

City of Arvada

City Council Agenda

AUGUST 19, 2024
CITY COUNCIL CHAMBERS
Regular Business

Councilmembers:

Lauren Simpson, Mayor
Randy Moorman, Mayor Pro-Tem
Shawna Ambrose, District 2
Sharon Davis, At large
Lisa Feret, At large
Bob Fifer, District 4
John Marriott, District 3

Staff Members Usually Present:

Linda Haley, Acting City Manager
Don Wick, Deputy City Manager
Rachel Morris, City Attorney
Jacqueline Rhoades, Director of Public Works
Sharon Israel, Director of Utilities
Jessica Garner, Director of Community & Econ. Dev.
Bryan Archer, Director of Finance
Gabriella Bommer, Director of Human Resources
Rachael Kuroiwa, Director of Communications & Engagement
Kristen Rush, City Clerk

Info: 720-898-7550

THIRD FLOOR CONFERENCE ROOM
EXECUTIVE SESSION
5:00 P.M.

Legal Advice, Pursuant to CRS 24-6-402(4)(b) and Instructions to Negotiators, Pursuant to C.R.S. 24-6-402(4)(e) Relating to Hamon Infrastructure Mediation

CITY COUNCIL MEETING – CITY COUNCIL CHAMBERS

6:00 PM

1. Call to Order - 6:00 PM
2. Moment of Reflection and Pledge of Allegiance - Councilmember Davis
3. Roll Call of Councilmembers
4. Approval of Minutes
 - A. August 5, 2024 City Council Meeting
5. Recognitions and Communications
 - A. Proclamation for National Payroll Week - Presented by Councilmember Marriott
6. Presentations
 - A. Mid-year Financial Update
7. Public Comment on Issues not Scheduled on Agenda - Three Minute Limit
8. New Business
 - A. Consent Agenda

1. R24-082, A Resolution Authorizing Amendment No. 6 to the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," by and between the City of Arvada and PCL Construction Inc., for the Purpose of Extending the Guaranteed Date of Substantial Completion and for Underdrains in Filters 7-9, Thereby Increasing the Contract Amount from \$18,515,985.00 to an Amount not to Exceed \$19,722,518.00
2. R24-083, A Resolution Accepting Material Donations from Faith Church for Use by City Staff in Connection with Homeless Services
3. R24-084, A Resolution Authorizing an Agreement Between the City of Arvada and DHE Computer Systems, LLC. for Goods and Professional Services Relating to Citywide Workstation Replacement in an Amount Not to Exceed \$1,800,000.00
4. R24-085, A Resolution Authorizing an Agreement By and Between the City of Arvada and SMH West, LLC for the 12-Inch Water Main – (Zone 5) Indiana Street, Project No. 23-WA-20, In an Amount Not to Exceed \$2,961,361.00

B. Resolutions

1. R24-086, A Resolution Authorizing an Agreement for Subordination of Deed of Trust Between the City of Arvada, Vance Street Flats, LLLP, and the Colorado Housing and Finance Authority for the Vance Street Flats Project (Presenter: Carrie Espinosa, Housing Manager)
2. R24-087, A Resolution Authorizing an Intergovernmental Joint Agreement and HOME Consortium Agreement Between Jefferson County, Colorado, the City of Lakewood, Colorado and the City of Arvada, Colorado (Presenter: Carrie Espinosa, Housing Manager)

C. Ordinances (First Reading) - None

9. Other

10. Public Hearings - 6:15 PM

- A. CB24-009, An Ordinance Repealing and Reenacting Chapter 50, Irrigation and Drainage, of the Arvada City Code (Ordinance No. 4875) (Presenter: Jacob Moyer, Stormwater Administrator)
- B. CB24-010, An Ordinance Permitting Concealed Handgun Permit Holders to Lawfully Carry a Concealed Handgun at the Arvada City Hall Located at 8101 Ralston Road (Ordinance No. 4876) (Presenter: Rachel Morris, City Attorney)

11. Public Comment - Five Minute Limit

12. Reports from City Council

- A. Council Committee Reports

13. Reports from City Manager

- A. Review of Future Workshops and Presentations

14. Reports from City Attorney

15. Adjournment



SUMMARY OF MINUTES OF THE MEETING OF THE ARVADA CITY COUNCIL HELD AUGUST 5, 2024

1. Executive Session – 4:30 p.m.
 - A. Legal Advice, Pursuant to CRS 24-6-402(4)(b) Relating to Texas Roadhouse Major Modification Request
 - B. Legal Advice, Pursuant to CRS 24-6-402(4)(b) Relating to complaint regarding municipal court case

Councilmember Feret moved to go into executive session for a Personnel Matter, Pursuant to C.R.S. 24-6-402(4)(f) Relating to Appointee Evaluations.

The following votes were cast on the Motion:

Those voting Yes: Simpson, Moorman, Ambrose, Davis, Feret, Fifer, Marriott,
The Motion was Approved

1. Call to Order - 6:10 p.m.

This Arvada City Council meeting was a hybrid meeting using webinar technology. Mayor Simpson, Mayor Pro Tem Moorman, Councilmember Ambrose, Councilmember Davis, Councilmember Feret, Councilmember Fifer, Councilmember Marriott were all present in chambers. Members of the public were given notice with instructions on how to participate with public comment.

2. Moment of Reflection and Pledge of Allegiance
3. Roll Call of Councilmembers

Those Present: Mayor Lauren Simpson, Mayor Pro Tem Randy Moorman, Councilmember Shawna Ambrose, Councilmember Sharon Davis, Councilmember Lisa Feret, Councilmember Bob Fifer, Councilmember John Marriott

Also Present: Lorie Gillis, City Manager; Rachel Morris, City Attorney; Linda Haley, Deputy City Manager; Don Wick, Deputy City Manager; Bryan Archer, Director of Finance; Jessica Garner, Director of Community and Economic Development; Katie Patterson, Communications Manager, Infrastructure; and Kristen Rush, City Clerk.

4. Approval of Minutes – July 15, 2024

The minutes stand approved.

5. Recognition and Communication – None
6. Presentations – None

7. Public Comment –
 - A. Jerry Marks, Arvada resident, and Bob Loveridge, representing the Arvada Fire Protection Board, invited council to attend the AVA Chairity Event on October 13.
 - B. Rachel Hoff, Arvada resident, addressed council regarding a new English class offered at the Rising Church.
 - C. Gabriel Fallon, Arvada resident, addressed council regarding the extension of a privacy fence along Ralston Road and Rensselaer.
 - D. Karen Gerbatsch, Arvada resident, addressed council regarding the proposed RV Storage project.
 - E. Dan Bradley, Arvada resident, addressed council regarding programs to assist homeless Veterans.
 - F. Ann Katzburg, Arvada resident, addressed council regarding the proposed RV Storage project.
 - G. Rainer Gerbatsch, Arvada resident, addressed council regarding the proposed RV Storage project.
8. New Business
 - A. Consent Agenda –
 1. R24-074 A Resolution Approving an Employment Separation Agreement between the City of Arvada and Lorie B. Gillis
 2. R24-075 A Resolution Approving an Employment Agreement Between the City of Arvada and Linda Haley For Services as Acting City Manager
 3. R24-076 A Resolution Approving the Fourth Amendment to an Employment Agreement by and between the City of Arvada and Rachel A. Morris as City Attorney
 4. R24-077 A Resolution Approving the Fourth Amendment to an Employment Agreement by and between the City of Arvada and Kathryn C. Kurtz as Presiding Municipal Court Judge
 5. R24-078 A Resolution Authorizing Amendment No. 3 to An Agreement Between the City of Arvada and Kennedy/Jenks Consultants, Inc. for Professional Design Services for Additional Engineering Consulting Services Relating to the North Trunk Sewer Improvements, Thereby Increasing the Contract Amount from \$1,024,221.00 to an Amount Not to Exceed \$1,128,087.00
 6. R24-079 A Resolution Authorizing a Change Order No. 1 to An Agreement Between the City of Arvada and Anderson Mason Dale Architects, P.C. For Professional Architectural/Engineering Design Services for Police Evidence Storage and Crime Lab in An Amount Not to Exceed \$117,500.00 In the First Year
 7. R24-080 A Resolution Approving an Agreement by and between the City of Arvada and Gabriel Patrick Fallon and Jennifer Ashley Fallon, for the Grant of a Revocable Encroachment License to Install a Fence on top of the Retaining Wall in Ralston Road Adjacent to 6180 Johnson Way, Within Public Right of Way
 8. R24-081 A Resolution Authorizing Change Order No. 1 to An Agreement by and Between the City of Arvada and APC Construction Co. for 2024

- Phase 1 Pavement Resurfacing Program, Project No. 24-ST-01C, in an Amount not to Exceed \$3,912,903.05
9. R24-068 A Resolution Authorizing Amendment No. 4 To A Construction Management/General Contractor (CM/GC) Agreement by and Between the City of Arvada and Archer Western Construction, LLC for the Zephyr (Zone 5) Tank, Project No. 24-WA10” for Purposes of Awarding Phase II Services, thereby Increasing the Contract Amount from \$4,078,293.00, to an Amount Not to Exceed \$4,893,063.00

Councilmember Marriott asked that R24-074 be removed from the consent agenda.

Councilmember Feret moved that R24-075, A Resolution Approving an Employment Agreement Between the City of Arvada and Linda Haley For Services as Acting City Manager; R24-076, A Resolution Approving the Fourth Amendment to an Employment Agreement by and between the City of Arvada and Rachel A. Morris as City Attorney; R24-077, A Resolution Approving the Fourth Amendment to an Employment Agreement by and between the City of Arvada and Kathryn C. Kurtz as Presiding Municipal Court Judge; R24-078, A Resolution Authorizing Amendment No. 3 to An Agreement Between the City of Arvada and Kennedy/Jenks Consultants, Inc. for Professional Design Services for Additional Engineering Consulting Services Relating to the North Trunk Sewer Improvements, Thereby Increasing the Contract Amount from \$1,024,221.00 to an Amount Not to Exceed \$1,128,087.00; R24-079, A Resolution Authorizing a Change Order No. 1 to An Agreement Between the City of Arvada and Anderson Mason Dale Architects, P.C. For Professional Architectural/Engineering Design Services for Police Evidence Storage and Crime Lab in An Amount Not to Exceed \$117,500.00 In the First Year; R24-080, A Resolution Approving an Agreement by and between the City of Arvada and Gabriel Patrick Fallon and Jennifer Ashley Fallon, for the Grant of a Revocable Encroachment License to Install a Fence on top of the Retaining Wall in Ralston Road Adjacent to 6180 Johnson Way, Within Public Right of Way; R24-081, A Resolution Authorizing Change Order No. 1 to An Agreement by and Between the City of Arvada and APC Construction Co. for 2024 Phase 1 Pavement Resurfacing Program, Project No. 24-ST-01C, in an Amount not to Exceed \$3,912,903.05; R24-068, A Resolution Authorizing Amendment No. 4 To A Construction Management/General Contractor (CM/GC) Agreement by and Between the City of Arvada and Archer Western Construction, LLC for the Zephyr (Zone 5) Tank, Project No. 24-WA10” for Purposes of Awarding Phase II Services, thereby Increasing the Contract Amount from \$4,078,293.00, to an Amount Not to Exceed \$4,893,063.00, be approved.

The following votes were cast on the Motion:

Those voting Yes: Simpson, Moorman, Ambrose, Davis, Feret, Fifer, Marriott
The Motion was Approved

B. Resolutions –

1. R24-074 A Resolution Approving an Employment Separation Agreement between the City of Arvada and Lorie B. Gillis

Councilmember Davis moved that R24-074, A Resolution Approving an Employment Separation Agreement between the City of Arvada and Lorie B. Gillis, be approved.

The following votes were cast on the Motion:

Those voting Yes: Simpson, Moorman, Ambrose, Davis, Feret, Fifer

Those voting No: Marriott

The Motion was Approved

C. Ordinances (First Reading) –

1. CB24-010 An Ordinance Permitting Concealed Handgun Permit Holders to Lawfully Carry a Concealed Handgun at the Arvada City Hall Located at 8101 Ralston Road (Public Hearing to be set for August 19, 2024 at 6:15 p.m.)

Mayor Pro Tem Moorman moved that CB24-010, An Ordinance Permitting Concealed Handgun Permit Holders to Lawfully Carry a Concealed Handgun at the Arvada City Hall Located at 8101 Ralston Road, be approved on first reading, ordered published in full and a Public Hearing to be set for August 19, 2024 at 6:15 p.m.

The following votes were cast on the Motion:

Those voting Yes: Simpson, Moorman, Ambrose, Davis, Feret, Fifer, Marriott

The Motion was Approved

9. Continuance of Public Hearing for Texas Roadhouse Major Modification Request from the Land Development Code subsection 5-1-3-1.B.2, that requires buildings adjacent to a Pedestrian Priority Street to have a minimum height of 25 feet and have at least two usable floors, for the building generally located at 5550 Wadsworth Blvd.

Councilmember Davis read the following into the record: It has come to my attention that there was a procedural irregularity in the initial public hearing for the Texas Roadhouse application for major modifications. Specifically, our rules of procedure require that the applicant be given the option for a continuance of a public hearing on an application if only an even number of councilmembers will be present at a meeting. This did not occur before the public hearing for the Texas Roadhouse application on July 15, 2024, where only 6 members of Council were present. As a result, I would like the Council to reconsider its decision made at the July 15, 2024, public hearing to correct this procedural irregularity.

Councilmember Davis moved that City Council reconsider the Texas Roadhouse Major Modification Request from the Land Development Code subsection 5-1-3-1.B.2, that requires buildings adjacent to a Pedestrian Priority Street to have a minimum height of 25 feet and have at least two usable floors, for the building generally located at 5550 Wadsworth Blvd, the reconsideration to occur on a later date after notice to the public.

The following votes were cast on the Motion:

Those voting Yes: Simpson, Moorman, Ambrose, Davis, Feret, Fifer, Marriott

The Motion was Approved

10. Public Hearings –None

12. Public Comment - Five Minute Limit –
 - A. Eric Winders, Arvada resident, addressed council regarding the 5 p.m. dinner session.
13. City Council Reports – None
14. City Manager Reports – None
15. City Attorney Reports – None
16. Adjournment at 6:45 p.m.

Lauren Simpson, Mayor

SEAL:

Kristen R. Rush, City Clerk



REPORT TO CITY COUNCIL

AGENDA ITEM
5.A.

TO: THE HONORABLE CITY COUNCIL

DATE: August 19, 2024

SUBJECT: Proclamation for National Payroll Week - Presented by Councilmember Marriott

Report in Brief

City Council will designate the first week in September as Payroll Week. Kristina Flipse, Payroll Specialist for the City of Arvada, will be present to accept the proclamation.

Prepared by:

Chris Koch, CCO Admin

Reviewed by:

Toni Riebschlager, Law Office Administrator 7/26/2024

Laura Hemler, Assistant City Attorney 7/26/2024

Approved by:

Rachel Morris, City Attorney 7/29/2024

Linda Haley, Deputy City Manager 7/29/2024

Enclosure, exhibits & attachments required to support the report

WHEREAS, PayrollOrg and its more than 20,000 members have launched a nationwide public awareness campaign that pays tribute to the nearly 150 million people who work in the United States and the payroll professionals who support the American system by paying wages, reporting worker earnings and withholding federal employment taxes; and

WHEREAS, payroll professionals in Arvada, CO play a key role in maintaining the economic health of Arvada, carrying out such diverse tasks as paying into the unemployment insurance system, providing information for child support enforcement, and carrying out tax withholding, reporting and depositing; and

WHEREAS, payroll departments collectively spend more than \$2.4 trillion annually complying with myriad federal and state wage and tax laws; and payroll professionals play an increasingly important role ensuring the economic security of American families by helping to identify noncustodial parents and making sure they comply with their child support mandates; and

WHEREAS, payroll professionals have become increasingly proactive in educating both the business community and the public at large about the payroll tax withholding systems; and

WHEREAS, payroll professionals meet regularly with federal and state tax officials to discuss both improving compliance with government procedures and how compliance can be achieved at less cost to both government and businesses.

NOW THEREFORE, be it resolved that the Mayor and Members of City Council proclaim the first full week of September as Payroll Week in Arvada and encourage everyone to give support to the efforts of the people who work in the payroll profession.

Dated this 19th day of August, 2024.

Lauren Simpson, Mayor

Randy Moorman, Mayor Pro Tem

Shawna Ambrose, Councilmember

Sharon Davis, Councilmember

Lisa Feret, Councilmember

Bob Fifer, Councilmember

John Marriott, Councilmember



REPORT TO CITY COUNCIL

AGENDA ITEM
6.A.

TO: THE HONORABLE CITY COUNCIL

DATE: August 19, 2024

SUBJECT: Mid-year Financial Update

Report in Brief

PRESENTER: Bryan Archer - Finance Director

Finance will provide the City Council with an un-audited financial report and a presentation of the Mid-Year 2024 financials. The presentation will include revenue and expenditure highlights of the major funds including: General Fund, Parks, Tax Increments, Capital Projects, Water, Wastewater, Storm Water, Golf, Solid Waste and the Internal Service Funds, an update on the current investment market and a status update on grants.

Prepared by:

Debra Nielson, Deputy Director of Finance

Reviewed by:

Approved by:

Jenna Belec, Executive Assistant 7/24/2024

Bryan Archer, Director of Finance 7/25/2024

Gail Walker, Legal Specialist-Contracts 7/25/2024

Laura Hemler, Assistant City Attorney 7/25/2024

Linda Haley, Deputy City Manager 7/25/2024

Enclosure, exhibits & attachments required to support the report



2024 Mid-Year Financial Report (Unaudited)



City Council
August 19, 2024

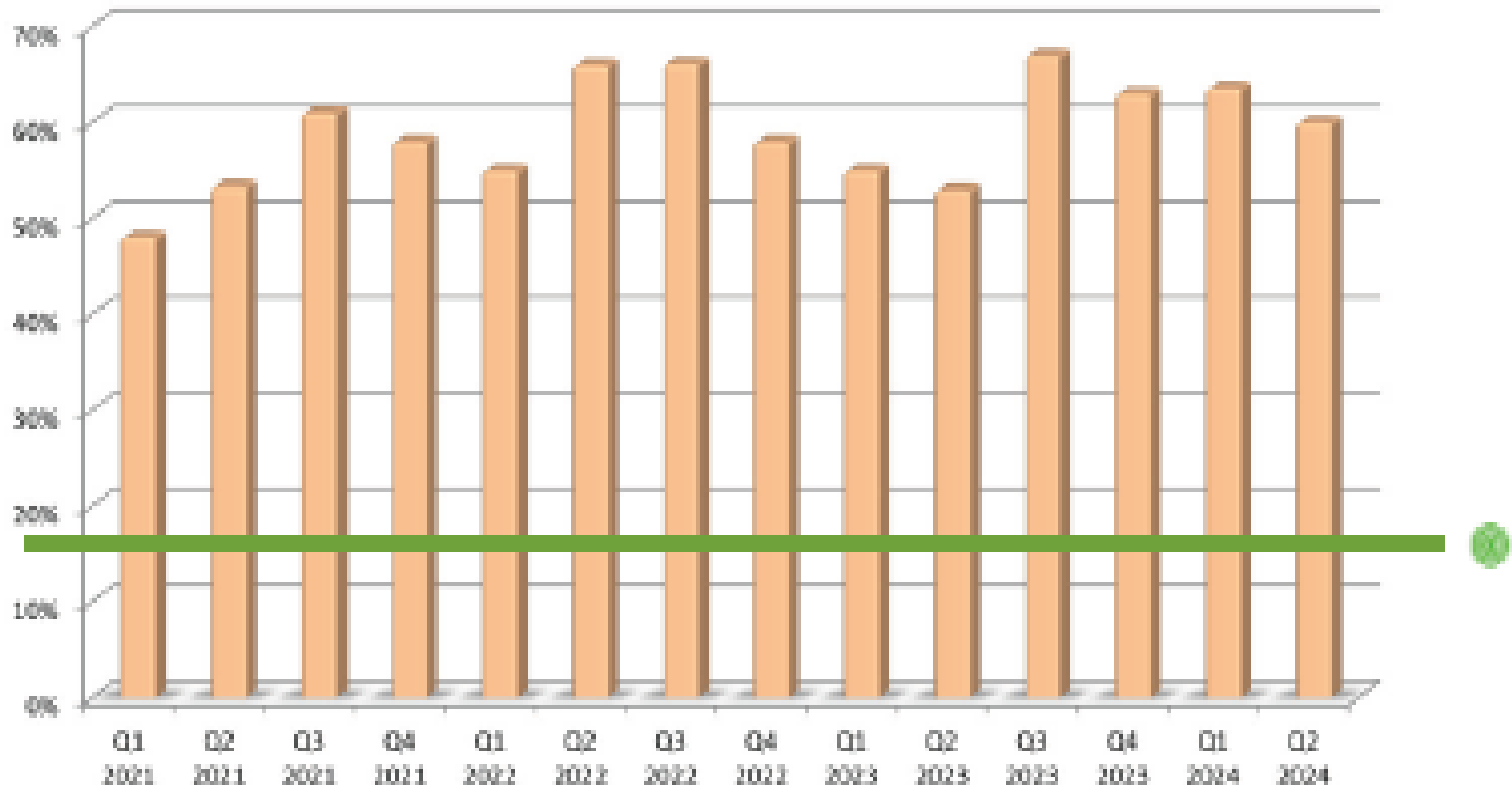


OVERVIEW

- Revenues are cooling, but still ahead of budget
- Operating expenditures remain in-line with budgets
- CIP continues to be under pressure
- Economy continues to be challenging



PERFORMANCE FOCUS



GENERAL FUND OVERVIEW



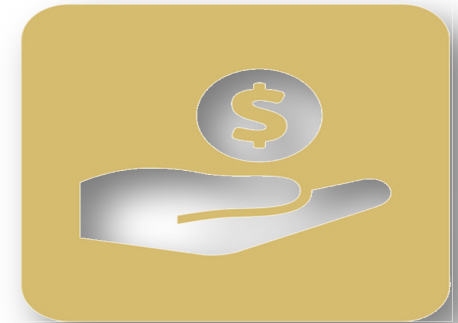
GENERAL FUND	YEAR TO DATE
Property Tax	POSITIVE
Sales Tax	MONITOR
Auto Use Tax	NEGATIVE
General Use Tax	POSITIVE
Court Revenues	NEGATIVE
Building Revenues	POSITIVE
Interest Revenue	POSITIVE
Personnel Expenditures	POSITIVE
Other Expenditures	MONITOR

PERFORMANCE - ACTUALS VS. BUDGET

SALES TAX

SALES TAX	YEAR TO DATE
Overall	MONITOR

Supermarket	POSITIVE
Wholesale	POSITIVE
Electronic Shopping	POSITIVE
Full-Service Restaurants	NEGATIVE
Utilities - Electric	POSITIVE
Hardware Stores	NEGATIVE
Limited-Service Restaurants	POSITIVE
Utilities - Cable	MONITOR
Liquor Store	NEGATIVE

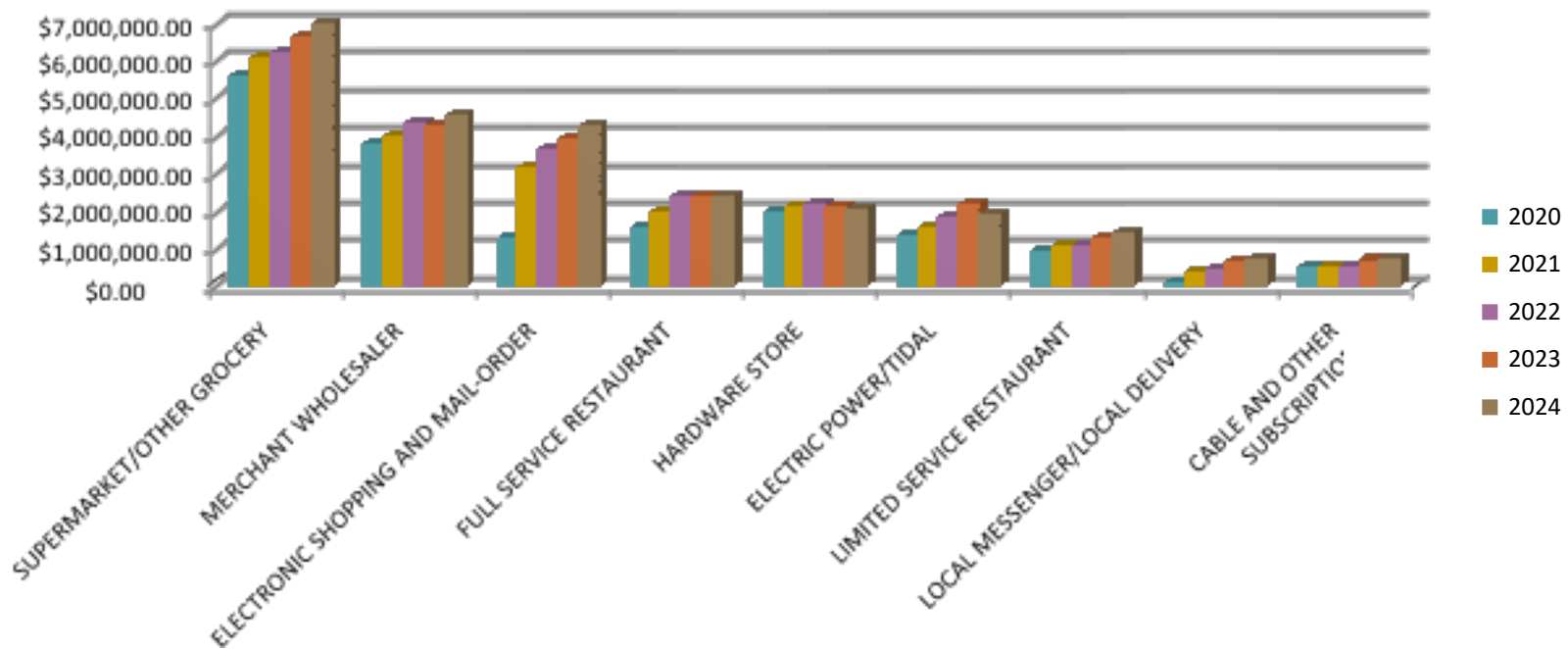


1.9% Increase



Top 70% Sales Tax Generating NAICS Categories

NAICS Code Name	2024	Percentage Change	2023	Percentage Change	2022
SUPERMARKET/OTHER GROCERY	\$6,923,204	5.52%	\$6,561,252	6.26%	\$6,174,434
GENERAL LINE GROCERY MERCH WHOLESA	\$4,478,163	5.43%	\$4,247,554	-0.69%	\$4,276,924
ELECTRONIC SHOPPING AND MAIL-ORDER	\$4,213,566	9.30%	\$3,854,973	7.60%	\$3,582,619
FULL SERVICE RESTAURANT	\$2,339,936	-0.17%	\$2,344,012	0.67%	\$2,328,311
HARDWARE STORE	\$2,043,272	-2.00%	\$2,084,973	-3.27%	\$2,155,565
ELECTRIC POWER/TIDAL	\$1,851,883	-13.72%	\$2,146,360	19.04%	\$1,803,097
LIMITED SERVICE RESTAURANT	\$1,378,317	8.94%	\$1,265,236	23.74%	\$1,022,491
LOCAL MESSENGERS/LOCAL DELIVERY	\$677,365	12.78%	\$600,586	52.39%	\$394,120
CABLE AND OTHER SUBSCRIPTION PROGRA	\$666,622	1.39%	\$657,465	30.83%	\$502,515
BEER/WINE/LIQUOR STORE	\$506,445	-15.06%	\$596,265	-5.36%	\$630,061
FLOOR COVERING STORE	\$416,823	-10.62%	\$466,342	-6.50%	\$498,757
NURSERY/GARDEN CENTER/FARM SUPPLY	\$383,112	2.15%	\$375,039	3.73%	\$361,567

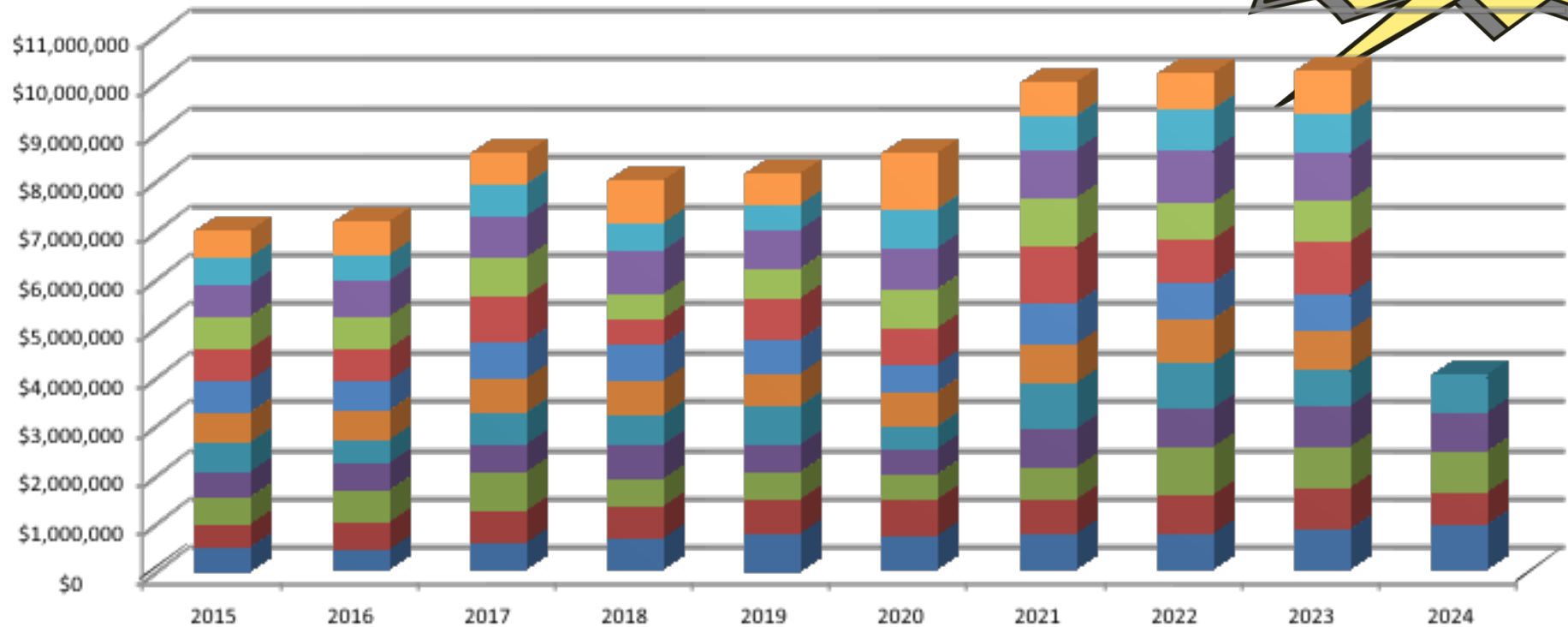


NAICS Code Name	2020	2021	2022	2023	2024
SUPERMARKET/OTHER GROCERY	\$5,543,044.14	\$6,061,185.76	\$6,174,433.54	\$6,561,252.11	\$6,923,204.12
MERCHANT WHOLESALER	\$3,734,745.67	\$3,927,867.00	\$4,276,924.20	\$4,247,554.17	\$4,478,162.72
ELECTRONIC SHOPPING AND MAIL-ORDER	\$1,217,864.18	\$3,117,323.49	\$3,582,618.57	\$3,854,973.39	\$4,213,565.53
FULL SERVICE RESTAURANT	\$1,507,336.16	\$1,928,099.79	\$2,328,310.56	\$2,344,012.18	\$2,339,936.44
HARDWARE STORE	\$1,922,281.97	\$2,077,949.64	\$2,155,564.70	\$2,084,973.21	\$2,043,272.38
ELECTRIC POWER/TIDAL	\$1,314,529.40	\$1,535,464.08	\$1,803,096.57	\$2,146,360.23	\$1,851,882.93
LIMITED SERVICE RESTAURANT	\$897,379.30	\$1,069,818.62	\$1,022,491.07	\$1,265,235.87	\$1,378,316.94
LOCAL MESSENGER/LOCAL DELIVERY	\$94,230.12	\$358,792.20	\$394,120.41	\$600,585.58	\$677,365.23
CABLE AND OTHER SUBSCRIPTION	\$484,819.46	\$472,794.45	\$502,515.23	\$657,465.31	\$666,622.12



AUTO USE

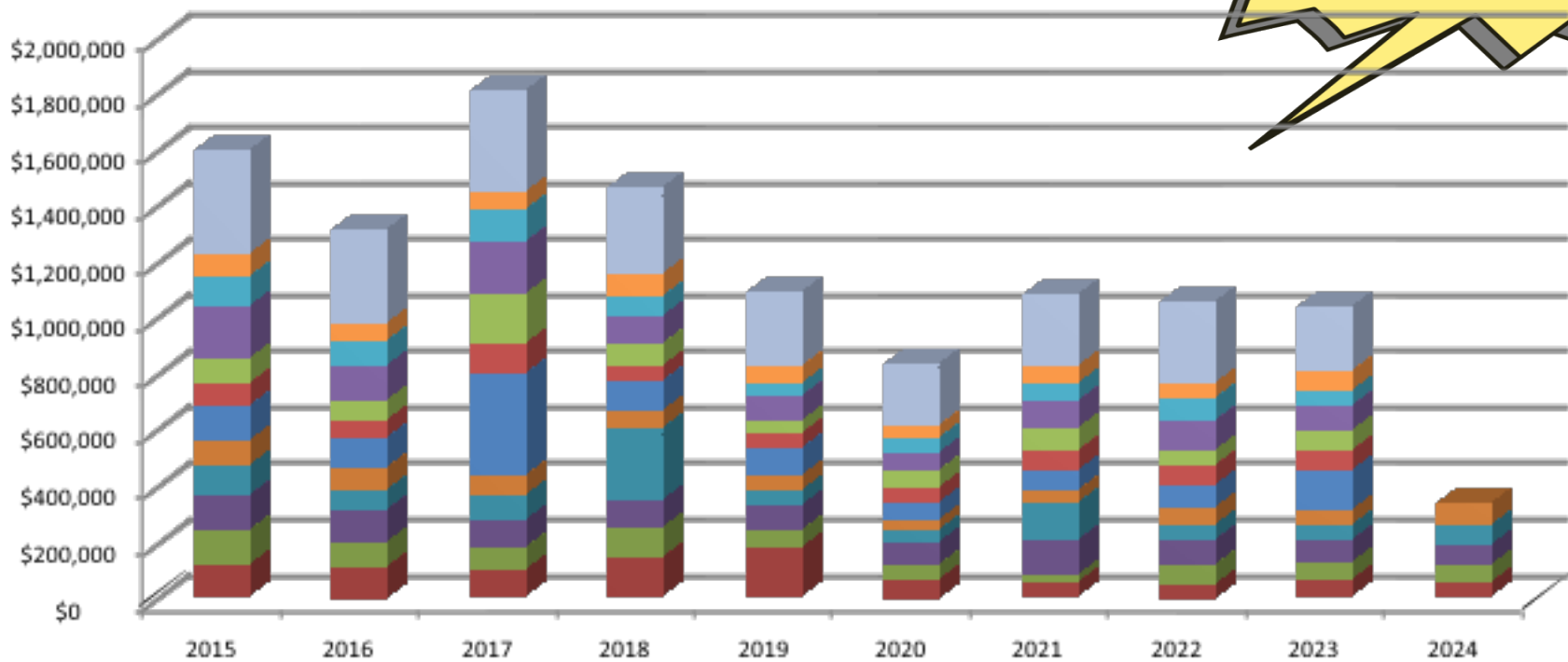
**3.3%
decrease**

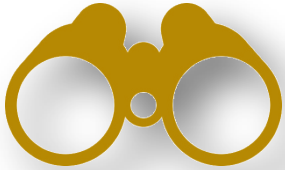


GENERAL USE TAX



6.2%
Increase





OTHER FUNDS OVERVIEW

FUND	REVENUES	EXPENDITURES	YEAR TO DATE
Parks	POSITIVE	MONITOR	POSITIVE
Tax Increment Funds	POSITIVE	POSITIVE	POSITIVE
Community Development	POSITIVE	POSITIVE	POSITIVE
Arvada Housing	POSITIVE	MONITOR	POSITIVE
Capital Projects	POSITIVE	WARNING	WARNING
Water	POSITIVE	POSITIVE	POSITIVE
Wastewater	POSITIVE	POSITIVE	POSITIVE
Stormwater	POSITIVE	POSITIVE	POSITIVE
Golf	POSITIVE	POSITIVE	POSITIVE
Solid Waste	POSITIVE	MONITOR	MONITOR
Risk Management	POSITIVE	MONITOR	MONITOR

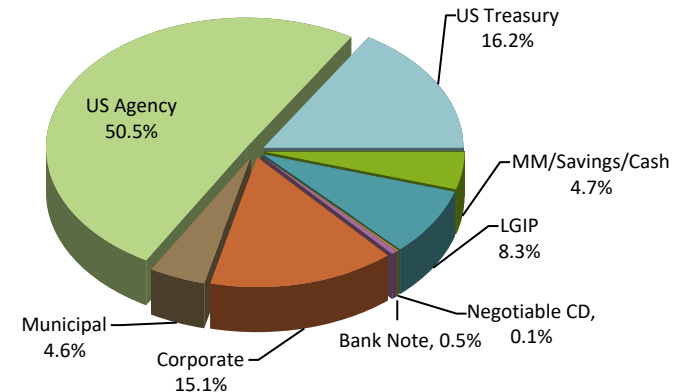
PERFORMANCE - ACTUALS VS. BUDGET

INVESTMENTS

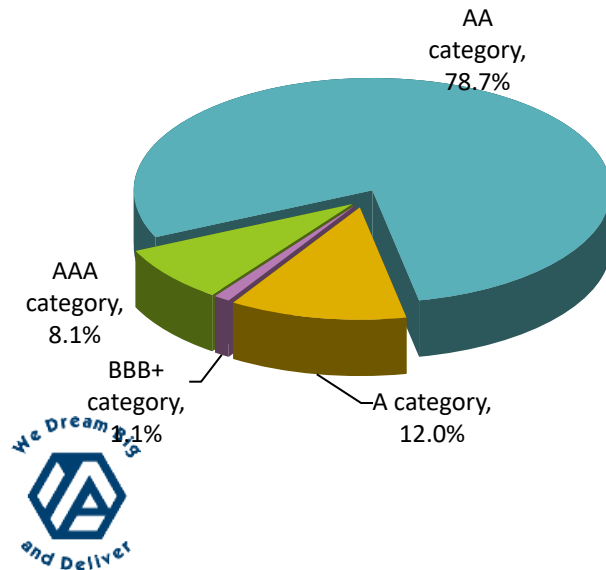
CONSOLIDATED PORTFOLIO ALLOCATION

PORTFOLIO PERFORMANCE

	6/30/2024	06/30/2023	Difference
City Interest Earnings	\$ 2,871,276	\$ 2,584,204	\$ 287,072
PFM Interest Earnings	745,578	415,148	330,430
Total Interest Earned	\$ 3,616,854	\$ 2,999,352	\$ 617,502
YTD City Portfolio Yield	2.41%	2.16%	+25 bps
YTD PFM Portfolio Yield	3.42%	1.95%	+147 bps
YTD Benchmark	4.66%	3.70%	+96 bps



CREDIT QUALITY (S&P RATING)



CONSOLIDATED PORTFOLIO CHANGES

	06/30/2024	06/30/2023	Difference
MM/Savings/Cash	\$ 14,361,875	\$ 6,014,640	\$ 8,347,235
LGIP	25,654,185	23,992,250	1,661,935
Time CD	395,000	-	395,000
Negotiable CD	1,600,000	-	1,600,000
Corporate	46,479,000	54,563,000	(8,084,000)
Municipal	14,050,000	22,330,000	(8,280,000)
US Agency	155,355,503	151,341,000	4,014,503
US Treasury	49,835,000	49,420,000	415,000
Total - Combined	\$ 307,730,562	\$ 307,660,890	\$ 69,672

INVESTMENTS – 'A-BBB rated' (3.74%)

Issuer	S&P	Face Amount/Shares
Adobe Inc	A+	\$ 135,000.00
American Express Credit	BBB+	\$ 275,000.00
American Honda Finance	A-	\$ 135,000.00
Bank of America Corp	A-	\$ 735,000.00
Bank of Montreal Chicago	A-	\$ 265,000.00
Bank of Nova Scotia Houston	A-	\$ 695,000.00
Bank of NY Mellon Corp	A	\$ 755,000.00
Caterpillar Financial Services Corp	A	\$ 500,000.00
Citigroup Inc	BBB+	\$ 430,000.00
Hershey Co	A	\$ 210,000.00
Home Depot Inc	A	\$ 310,000.00
IBM Corp	A-	\$ 255,000.00
Intel Corp	A+	\$ 265,000.00
John Deere Capital Corp	A	\$ 185,000.00
JPMORGAN Chase & Co	A-	\$ 810,000.00
Lockheed Martin	A-	\$ 40,000.00
Mastercard Inc	A+	\$ 135,000.00
Merk & CO	A+	\$ 105,000.00
Mitsubishi	A-	\$ 265,000.00
Morgan Stanley	A-	\$ 80,000.00
National Rural Util Coop	A-	\$ 75,000.00
Northern Trust Company	A+	\$ 105,000.00
Paccar Financial Corp	A+	\$ 400,000.00
State Street Bank & Tr	A	\$ 265,000.00
Swedbank AB	A+	\$ 265,000.00
Target Corp	A	\$ 70,000.00
Toronto-Dominion Bank	A	\$ 1,000,000.00
Toyota Motor Credit Corp	A+	\$ 550,000.00
UnitedHealth Group	A+	\$ 55,000.00
TOTAL		\$ 9,370,000.00

2024 GRANTS - Summary

<u>Grant Type</u>	<u>Amount</u>
Preparation	\$ 1,065,000
Pending	\$ 11,930,000
Rejected	\$ 154,000
Awarded	\$3,139,409
	\$ 10,975,178





QUESTIONS





REPORT TO CITY COUNCIL

AGENDA ITEM
8.A.

TO: THE HONORABLE CITY COUNCIL

DATE: August 19, 2024

SUBJECT: Consent Agenda

Report in Brief

1. R24-082, A Resolution Authorizing Amendment No. 6 to the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," by and between the City of Arvada and PCL Construction Inc., for the Purpose of Extending the Guaranteed Date of Substantial Completion and for Underdrains in Filters 7-9, Thereby Increasing the Contract Amount from \$18,515,985.00 to an Amount not to Exceed \$19,722,518.00

2. R24-083, A Resolution Accepting Material Donations from Faith Church for Use by City Staff in Connection with Homeless Services

3. R24-084, A Resolution Authorizing an Agreement Between the City of Arvada and DHE Computer Systems, LLC. for Goods and Professional Services Relating to Citywide Workstation Replacement in an Amount Not to Exceed \$1,800,000.00

4. R24-085, A Resolution Authorizing an Agreement By and Between the City of Arvada and SMH West, LLC for the 12-Inch Water Main – (Zone 5) Indiana Street, Project No. 23-WA-20, In an Amount Not to Exceed \$2,961,361.00

Suggested Motion: Moved by: _____ I move that the Consent Item(s),
Number(s) _____

be
(Removed from the Consent Agenda and Heard Upon Item _____) (Referred to a Workshop) (Postponed
Indefinitely).

YES _____ NO _____ ABSENT _____

That All/Remaining Consent Items be (Approved) (Rejected).

YES _____ NO _____ ABSENT _____

Prepared by:
Chris Koch, CCO Admin

Reviewed by:

Approved by:

Enclosure, exhibits & attachments required to support the report



REPORT TO CITY COUNCIL RESOLUTION

AGENDA ITEM
8.A.1.

TO: THE HONORABLE CITY COUNCIL

DATE: August 19, 2024

SUBJECT: R24-082, A Resolution Authorizing Amendment No. 6 to the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," by and between the City of Arvada and PCL Construction Inc., for the Purpose of Extending the Guaranteed Date of Substantial Completion and for Underdrains in Filters 7-9, Thereby Increasing the Contract Amount from \$18,515,985.00 to an Amount not to Exceed \$19,722,518.00

Report in Brief

Arvada's Ralston Water Treatment Plant (RWTP) is undergoing rehabilitation of the Filter (21-WA-52) and Solids Handling equipment (21-WA-50). The Filter Improvements project is 80% complete, with the rehabilitation in Filters 4-6 and 10-12 completed. Additionally, piping and electrical updates are roughly 70% complete. During the rehabilitation of Filters 7-9, damage to the base of the underdrains (concrete) was found to be extensive. This amendment provides for the best value alternative: new underdrains and concrete repair. This change order provides the City with the necessary resiliency in the water treatment system for the desired infrastructure life.

The Arvada team recommends that the City Council approve R24-082, A Resolution Authorizing Amendment No. 6 to the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," by and between the City of Arvada and PCL Construction Inc., for the Purpose of Extending the Guaranteed Date of Substantial Completion and for Underdrains in Filters 7-9, Thereby Increasing the Contract Amount from \$18,515,985.00 to an Amount not to Exceed \$19,722,518.00.

Financial Impact

The work included in this change order will be funded from 97611 (2023 Water Line-Bond), with \$1,000,000 being moved to 97610, RWTP Filter and Solids Handling Improvements.

Background

The RWTP was assessed in the 2019 Water Treatment Master Plan. The 2019 Master Plan identified the filter and solids handling systems at the RWTP as two of the priority projects. Additionally, the Arvada team has identified the filter system as being significantly past industry standard life and the solids handling as being critically undersized. This project addresses these needs with the solids handling portion of the project near completion and the filter rehabilitation portion about 80% complete.

The Arvada team has been implementing the design and construction of Filter and Solids improvements since 2021. The implementation has included Carollo Engineers supporting the study and design of the solids handling improvements (R21-032 and R22-104), Jacobs for the design of the filter improvements under the On-Call agreement (R21-089), and PCL as the CM/GC.

PCL Construction was selected for CMGC Pre-Construction Phase Services not to exceed \$130,000 through a competitive bid process (RFP-22-Ralston Filter and Solids Handling Improvements). Since the award of the pre-construction phase services, two contract amendments have been approved: GMP 1 (R22-055) and GMP 2 (R22-104). GMP 3 included work in the oldest three filters and all work associated with the solids drying beds. This GMP4 provides for implementation of the best value

SUBJECT: R24-082, A Resolution Authorizing Amendment No. 6 to the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," by and between the City of Arvada and PCL Construction Inc., for the Purpose of Extending the Guaranteed Date of Substantial Completion and for Underdrains in Filters 7-9, Thereby Increasing the Contract Amount from \$18,515,985.00 to an Amount not to Exceed \$19,722,518.00

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alternative identified by the project team.

After exposing the underdrains and concrete in Filters 7-9, damage was determined to be extensive enough that the planned rehabilitation was determined to be infeasible.

Discussion

During the rehabilitation work in Filters 7-9, the team found that the concrete floors of the filters are friable, or easily crumbled. During filter backwashes, the water picks up pieces of the concrete and clogs the underdrain panels. Therefore, the team could not complete the rehabilitation of Filters 7-9, including the installation of new, deeper media that allows more water to be filtered during treatment operations.

After discussing potential alternatives with the Utilities Operations staff, the Arvada team determined that fully replacing the underdrains in Filters 7-9 was the best value alternative, providing for the design filter rate, limiting future on-going and expensive maintenance, and a life of the rehabilitated filter that matches the anticipated life of the plant. This change order includes removing the existing underdrains, repairing the floor, and installing new underdrains to install the larger, deeper media. The media has already been purchased and is being stored onsite.

The most feasible, economical, alternative to doing this work is abandoning Filters 7-9. The Arvada team does not recommend abandonment as the plant capacity and overall treatment system capacity will not meet Level of Service goals. Additionally, the project has yet to expose the filter bottoms of the oldest set of filters in the plant. Abandonment of Filter 7-9 would force the project team to rehabilitate the last set of filters, regardless of the found condition. Due to significant lead time for new filter bottoms, abandonment would result in the City having 1/2 capacity at the RWTP during the 2025 irrigation (high water demand) season. The combined capacity of the Arvada Water Treatment Plant and 1/2 of the RWTP capacity is less than the 2024 maximum day to date seen by the water system.

Public Contact

Posting of the City Council agenda.

Commission Recommendation

N/A

Strategic Alignment

The recommended action aligns with the following Strategic Result within the Infrastructure Priority Area of the City Council Strategic Plan:

SR3 - By December 2023, update water, sewer, stormwater master plans and develop an implementation plan to address all findings.

Alternative Courses of Action

None recommended.

Recommendation for Action

The Arvada team recommends that the City Council approve R24-082, A Resolution Authorizing Amendment No. 6 to the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," by and between the City of

SUBJECT: R24-082, A Resolution Authorizing Amendment No. 6 to the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," by and between the City of Arvada and PCL Construction Inc., for the Purpose of Extending the Guaranteed Date of Substantial Completion and for Underdrains in Filters 7-9, Thereby Increasing the Contract Amount from \$18,515,985.00 to an Amount not to Exceed \$19,722,518.00

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Arvada and PCL Construction Inc., for the Purpose of Extending the Guaranteed Date of Substantial Completion and for Underdrains in Filters 7-9, Thereby Increasing the Contract Amount from \$18,515,985.00 to an Amount not to Exceed \$19,722,518.00.

Suggested Motion:

I move that R24-082, A Resolution Authorizing Amendment No. 6 to the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," by and between the City of Arvada and PCL Construction Inc., for the Purpose of Extending the Guaranteed Date of Substantial Completion and for Underdrains in Filters 7-9, Thereby Increasing the Contract Amount from \$18,515,985.00 to an Amount not to Exceed \$19,722,518.00, be (approved) (rejected).

Prepared by:
Bethany Yaffe, Civil Engineer

Reviewed by:

Approved by:

Mary Stahl, Senior Civil Engineer	7/30/2024
Jacqueline Rhoades, Public Works Director	7/31/2024
Bryan Archer, Director of Finance	8/1/2024
Tammy Hedlund, Legal Specialist	8/2/2024
Jessica Morales, Assistant City Attorney	8/5/2024
Debra Nielson, Deputy Director of Finance	8/6/2024
Don Wick, Deputy City Manager	8/7/2024
Rachel Morris, City Attorney	8/7/2024
Linda Haley, Deputy City Manager	8/7/2024

Enclosure, exhibits & attachments required to support the report

RESOLUTION NO. R24-082

A RESOLUTION AUTHORIZING AMENDMENT NO. 6
TO THE “CONSTRUCTION MANAGEMENT/GENERAL CONTRACTOR AGREEMENT
FOR PRECONSTRUCTION SERVICES FOR THE REHABILITATION AND
MODIFICATION OF THE FILTER AND SOLIDS HANDLING SYSTEMS AT THE
RALSTON WATER TREATMENT PLANT,” BY AND BETWEEN THE CITY OF ARVADA
AND PCL CONSTRUCTION INC., FOR THE PURPOSE OF EXTENDING THE
GUARANTEED DATE OF SUBSTANTIAL COMPLETION AND FOR UNDERDRAINS IN
FILTERS 7-9, THEREBY INCREASING THE CONTRACT AMOUNT FROM \$18,515,985.00
TO AN AMOUNT NOT TO EXCEED \$19,722,518.00

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ARVADA, COLORADO:

Section 1. The Mayor or Mayor Pro Tem is authorized to sign and the City Clerk to attest, in form approved by the City Attorney, Amendment No. 6 to an Agreement, which is in substantially the same form as that attached hereto, by and between the City of Arvada and PCL Construction Inc., for the purpose of extending the Guaranteed Date of Substantial Completion and for underdrains in Filters 7-9, thereby increasing the contract amount from \$18,515,985.00 to an amount not to exceed \$19,722,518.00.

Section 2. This resolution shall be effective upon its approval by the City Council.

APPROVED AND ADOPTED this 19th day of August, 2024.

Lauren Simpson, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

Rachel A. Morris, City Attorney

By: _____

**AMENDMENT NO. 6
TO THE “CONSTRUCTION MANAGEMENT/GENERAL
CONTRACTOR AGREEMENT FOR PRECONSTRUCTION SERVICES
FOR THE REHABILITATION AND MODIFICATION OF THE FILTER
AND SOLIDS HANDLING SYSTEMS AT THE RALSTON WATER
TREATMENT PLANT,” BY AND BETWEEN THE CITY OF ARVADA
AND PCL CONSTRUCTION INC., FOR THE PURPOSE OF
EXTENDING THE GUARANTEED DATE OF SUBSTANTIAL
COMPLETION AND FOR UNDERDRAINS IN FILTERS 7-9, THEREBY
INCREASING THE CONTRACT AMOUNT FROM \$18,515,985.00 TO AN
AMOUNT NOT TO EXCEED \$19,722,518.00**

1. **PARTIES.** The parties to this Amendment No. 6 are the City of Arvada, a Colorado home rule municipal corporation, whose mailing address is 8101 Ralston Road, Arvada, CO 80002 (“**Arvada**” or “**Owner**”) and PCL Construction, Inc., a Colorado Corporation whose place of business is located at 2000 S. Colorado Blvd., Suite 2-500, Denver, CO 80222 (“**Contractor**”), collectively referred to as the “**Parties.**”

2. **RECITALS AND PURPOSE.**

- 2.1 On or about May 24, 2022, Arvada and Contractor entered into the Construction Management/General Contractor (“**CM/GC**”) Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant, in an Amount Not to Exceed \$130,000.00 (“**Original Agreement**”) wherein Contractor would provide preconstruction phase (“**Phase I**”) Construction Management (“**CM**”) services, including but not limited to cost estimating, constructability reviews, value engineering, development of a Guaranteed Maximum Price (“**GMP**”), and risk management.
- 2.2 On or about August 17, 2022, Arvada and Contractor executed Amendment No. 1 for the purpose of establishing GMP No. 1 in an amount not to exceed \$8,703,990.00 in order to secure purchases and procurement/fabrication for long-lead time equipment for the filter improvements and solids handling projects and related emergency repairs (“**Amendment No. 1**”). The cost of Amendment No. 1 was in addition to the cost of Phase I of the Original Agreement.
- 2.3 On or about January 26, 2023, Arvada and Contractor executed Amendment No. 2 for the purpose of awarding Contractor the Construction Phase (“**Phase II**”) of the Original Agreement and establishing GMP No. 2 in an amount not to exceed \$4,381,518.00 (“**Amendment No. 2**”). The cost of Amendment No. 2 was in addition to the cost of the Original Agreement and Amendment No. 1.

- 2.4 On or about March 11, 2023, Arvada and Contractor executed Amendment No. 3 (“**Amendment No. 3**”) for the purpose of establishing GMP No. 3 for Phase II, in an amount not to exceed \$3,518,653.00. The cost of Amendment No. 3 was in addition to the costs of the Original Agreement and Amendments No. 1 and No. 2.
- 2.5 On or about May 10, 2023, Arvada and Contractor executed Amendment No. 4 (“**Amendment No. 4**”) for GMP No. 4 for Phase II, in an amount not to exceed \$1,781,824.00. The Cost of GMP No. 4 was in addition to the cost of Phase I of the Original Agreement and Amendments No. 1, No. 2, and No. 3, for a total contract amount of \$18,515,985.00 for the project.
- 2.6 On or about October 10, 2023, Arvada and Contractor executed Amendment No. 5 (“**Amendment No. 5**”) for purposes of extending the Date of Substantial Completion due to delays in electrical equipment lead times. Amendment No. 5 did not change the total contract amount for the project as established by the previous amendments.
- 2.7 For the convenience of the Parties, and due to their voluminous nature, the Original Agreement and Amendments No. 1, No. 2, No. 3, No. 4, and No. 5 are not attached hereto but are incorporated herein by reference.
- 2.8 The purpose of this Amendment No. 6 is to extend the Date of Substantial Completion and for underdrains in Filters 7-9 (“**Amendment No. 6**”). The cost of Amendment No. 6 is \$1,206,533.00, thereby increasing the contract amount from \$18,515,985.00 to an amount not to exceed **\$19,722,518.00** for all work.

3. CONTRACT DOCUMENTS AND EXHIBITS. The Contract Documents shall consist of the Original Agreement, Amendments No. 1, No. 2, No. 3, No. 4, No. 5, and this Amendment No. 6, together with the following:

- Exhibit A: Contractor’s April 23, 2024, Filter 7-9 Underdrain Price Model;**
- Exhibit B: Contractor’s July 12, 2024, Item Analysis Sheet for Recommended Coating Allowance;**
- Exhibit C: Contractor’s July 12, 2024, Item Analysis Sheet for Recommended Escalation Allowance; and**
- Exhibit D: Contractor’s May Schedule Update.**

All exhibits referred to in this Amendment No. 6 are attached hereto and are, by reference, incorporated herein for all purposes. In the event any matter, term, provision, or condition that is the subject of this Agreement requires clarification or is in dispute, or

is the subject of a difference of opinion, the purpose and intent of the Agreement shall be first ascertained by reference to the Contract Documents in their entirety. In the event of any dispute or differences between the respective documents that constitute the Contract Documents, then Contractor shall secure the written instructions from Arvada before proceeding with the performance of the services affected by such conflicts, omissions, or discrepancies.

4. **SCOPE OF WORK.** The Scope of Work for the Project is expanded to include the work detailed in Exhibits A, B, C and D to this Amendment No. 6.

5. **COMPENSATION AND COMPLETION DATE.**

5.1 The Guaranteed Date of Substantial Completion established by this Amendment No. 6 is **April 21, 2025**.

5.2 The total amount of compensation is hereby increased by **\$1,206,533.00**, thereby increasing the contract amount from \$18,515,985.00, to an amount not to exceed **\$19,722,518.00** for all Work.

6. **FULL FORCE AND EFFECT.**

6.1 All other terms and conditions shall be as set forth in the Original Agreement and Amendments No. 1, No. 2, No. 3, No. 4, and No. 5.

6.2 If any provision of this Amendment No. 6 is held invalid or unenforceable, no other provision shall be affected by such holding, and all of the remaining provisions of this Agreement shall continue in full force and effect.

7. **BINDING AUTHORITY.** Contractor represents and affirms that the signature page hereof accurately states the full legal name of Contractor (whether as a corporation, partnership, limited liability company, sole proprietorship, or other), contains all requisite signature(s) on behalf of Contractor, and in all other respects is effective to bind Contractor, in accordance with all applicable statutes, regulations, resolutions, rules, bylaws, agreements, or similar sources of authority or limitation. This Agreement may be executed in counterpart(s), each of which shall be deemed to be an original, and all of which, taken together, shall constitute one instrument.

(Signatures on next page.)

DATED this _____ day of _____, 2024.

CITY OF ARVADA, COLORADO

Lauren Simpson
Mayor
8101 Ralston Road
Arvada, CO 80002

ATTEST/WITNESS:

City Clerk

APPROVED AS TO FORM:

For Rachel A. Morris, City Attorney

By: _____

PCL CONSTRUCTION, INC., a Colorado
Corporation

Daña Lebeda
Area Manager
2000 S. Colorado Blvd, Suite 2-500
Denver, CO 80222
DLebeda@pcl.com

Exhibit A

Amendment No. 6

To The “Construction Management/General Contractor Agreement for Preconstruction Services for The Rehabilitation and Modification of The Filter and Solids Handling Systems at The Ralston Water Treatment Plant,” By and Between the City of Arvada and PCL Construction Inc., For the Purpose of Extending the Guaranteed Date of Substantial Completion and For Underdrains in Filters 7-9, Thereby Increasing the Contract Amount From \$18,515,985.00 To an Amount Not to Exceed \$19,722,518.00



CONSTRUCTION

Filter 7-9 Underdrain Price Model

FILTER AND SOLIDS HANDLING IMPROVEMENTS CMGC

CITY OF ARVADA

APRIL 23, 2024



Blunn Reservoir

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DETAILED ESTIMATE • AWI Option • Leopold Option	TAB 3
SCHEDULE	TAB 4
QUOTES	TAB 5



4/22/2023

PCL CONSTRUCTION, INC.

Filter Options 7-9

City of Arvada

Arvada Ralston Filter & Solids Handling Improvements

<u>Bid Item</u>	<u>Description</u>	<u>AWI Underdrain</u>	<u>Leopold Underdrain</u>
1	Filter Options 7-9	\$ 511,058	\$ 542,981
CONT1	Construction Contingency	\$ 31,187	\$ 33,560
GR	General Requirements	\$ 81,501	\$ 94,652
	Total Direct Cost	\$ 623,746	\$ 671,193
	General Expense		
	Bond	\$ 13,842	\$ 14,700
	Project Staff	\$ 227,270	\$ 271,596
	Insurance	\$ 13,362	\$ 14,795
	FEE - 9%	\$ 76,233	\$ 84,485
	Total General Expense	\$ 330,707	\$ 385,576
	Total Price	\$ 954,453	\$ 1,056,769

Technical Clarifications and Assumptions**1. General**

- Price Model excludes AIS, BABA and all DBE/SBE requirements including all state or federal funding sources.
- Price Model excludes Davis-Bacon wages.
- Price Model does not include cost for remediation of hazardous waste materials or archeological mitigation.
 - Owner remains responsible as the generator for all pre-existing hazardous materials found on site, will sign applicable waste manifests and except for Contractor's own negligence, will be responsible for any pre-existing hazardous materials.
- The Contractor shall be responsible for only those hazardous materials and/or chemicals as on site by contractor forces; and shall not be responsible for any existing hazardous conditions not known or foreseen prior to the start of construction.
- If the Contractor encounters a Differing Site Condition, Contractor will be entitled to an adjustment to the Contract Price and/or Contract Time(s) to the extent contractor's cost and/or time of performance have been adversely impacted by the Differing Site Condition.
- Price Model excludes taxes.
- Price Model excludes all costs associated with protecting migratory birds or endangered species.
- Price Model assumes a standard 40 hour workweek, 5 days a week 7am-5pm.
- Price Model assumes Filters 7-9 will be offline until new underdrains arrive onsite.
- Price Model assumes existing underdrains 7-9 will be demolished before demobilization in July.
- Price Model assumes demobilization of PCL staff starting in late July and remobilization in October. One trailer will remain onsite for remobilization timeline use.
- Price Model assumes existing floors in filters 7-9 to be power washed after existing underdrains are removed. Price model does not include concrete restoration or concrete coatings in existing filter 7-9.
- Price Model assumes Filters 1-3 can be completed starting approximately October 15, 2024.
- Price Model assumes removal of AWI Retro-Fit System in Filter 7.
- Price Model assumes a credit for installation scope of AWI Retro-Fit System in Filter 8 & 9 that has been deleted.
- Price Model assumes AWI option will require additional 15/cy of sand media total between laterals.
- Contractor's Contingency. OWNER and CONTRACTOR shall agree upon the amount of CONTRACTOR'S contingency to be included within each GMP, as follows:
 - The CONTRACTOR's contingency amounts allowed for each GMP will be established by the CONTRACTOR and OWNER, and clearly listed in the CONTRACTOR's GMP proposal. By way of example, and not as a limitation, CONTRACTOR's contingency may be used for cost issues such as trade labor differentials, overtime, acceleration, costs in correcting defective, damaged or nonconforming Work, scope gaps, and Subcontractor defaults.
 - CONTRACTOR'S contingency amounts listed in each GMP proposal are cumulative and will be combined into a single contingency fund for CONTRACTOR's use on any portion of the Work.
 - CONTRACTOR's contingency is for the sole use of CONTRACTOR. CONTRACTOR's contingency shall not be used for changes in the Work that would require a Change

Order or Amendment. CONTRACTOR may use the CONTRACTOR'S contingency for any reasonable purpose relating to the Project, excluding:

- Legal fees or costs related to claims arising from or related to this Agreement
 - Home office overhead (OH)
 - Should CONTRACTOR's contingency be used during execution of the Work, the amount charged shall include applicable mark-ups, such as pricing for bonds, insurances, and CONTRACTOR's fee.
 - CONTRACTOR'S contingency may be used to correct defective Work; however, no CONTRACTOR or Subcontractor fee shall be applied.
 - CONTRACTOR shall provide notice to OWNER of any charges against CONTRACTOR'S contingency with each Application for Payment and shall submit a contingency log showing the initial value of each contingency, any usage, and remaining value. CONTRACTOR shall submit backup documentation to OWNER showing the value and reason for each case of contingency usage. Backup documentation shall include summary of all pricing elements and applicable mark-ups.
 - Any balance remaining in CONTRACTOR'S contingency at the Final Completion of all Work under the Agreement shall be returned to OWNER by deductive reconciliation Change Orders.
- Allowances. OWNER and CONTRACTOR shall agree upon the amount of allowances to be included in each GMP, as follows:
- The allowance amounts for each GMP will be established by OWNER and CONTRACTOR to address risks CONTRACTOR can identify, but not adequately quantify, prior to execution of the Agreement or subsequent amendments. Allowance amounts may also be established for scopes of work that cannot be adequately defined prior to execution of the Agreement or subsequent amendments. Allowance amounts shall be clearly listed in the CONTRACTOR's GMP proposal
 - Should allowance amounts be used during execution of the Work, the amount charged shall include applicable mark-ups, such as pricing for bonds, insurances, and CONTRACTOR's fee.
 - CONTRACTOR shall submit for OWNER's approval documentation showing value and reason for each case of allowance usage. OWNER's written approval will be required prior to CONTRACTOR's usage of any allowance amounts.
 - If an individual allowance amount is exceeded during execution of the Work, additional funds may be drawn from another allowance or OWNER'S contingency with written approval of OWNER, which will not be unreasonably withheld.
 - In the event allowance amounts listed in the GMP proposal are exceeded, a change order shall be issued by OWNER for an increase in Contract Price and/or Time.
 - Any balance remaining in designated Allowances at the Final Completion of all Work under the Agreement shall be returned to OWNER by deductive reconciliation Change Order.



City of Arvada Filer and Solids Improvements
Filter 7-9 Options Price Model
April 22, 2024

- Price Model includes the following contingencies and allowances:
 - Contractor Contingency: \$31,187
- Price Model will be administered as a lump sum/stipulated price contract and not a cost reimbursable contract.
- The lump sum price model provides for labor, small tools, insurances, bonds, and equipment for this project based on the following billable Rate Schedule. These rates will be used for any future change orders:

Craft Classification	Billable Hourly Rate (\$/HR)
Construction Manager	\$176.67
Project Manager	\$142.44
General Superintendent	\$150.07
Field Superintendent	\$136.74
Project Engineer	\$100.02
Field Engineer	\$88.42
Scheduler	\$144.40
Computer Modeler	\$105.90
HSE Coordinator	\$97.00
Foreman	\$75.05
General Foreman	\$82.30
Mason	\$63.37
Carpenter	\$63.37
Laborer	\$58.37
Pipe Layer	\$58.38
Pipe Fitter	\$63.37
Equipment Operator	\$75.05
Crane Operator	\$91.73

Small Tools Assessment / Insurance Rates / Bond Rates:

- Small Tools Assessment \$1.00/manhour
- Project Bond Rate 1%
- Subcontract Bond Rate 1.4%
- General Liability Insurance 1%
- Builder's Risk Insurance 0.4%

Billable hourly equipment rates shall be FHWA operated rates published by Bluebook (penton) on equipmentwatch.com.





AWI Filter 7-9 Underdrain Option

General Estimate Summary & Item Analysis Sheet



CONSTRUCTION

BE Number FILTERS 7-9

Opportunity No

Owner File No

Project New Blank Estimate

Location [ProjectLocation]

Summary Page 1 of 1

Apr 19, 2024

3:17:42 PM

General Estimate Summary

Justin McRae

Sheet Name	Description	Quantity UOM	Labor			Equipment			Services/ Tools / Supplies		Material		Subcontract		Total PRICE	
			Hours	Rate	Total	Hours	Unit	Total	Unit	Total	Unit	Total	Unit	Total	Unit	Total
DIRECT PRICES																
Filter 7-9 Options1 LS																
AWI	AWI Underdrain	1 LS	2,581	67.21	173,478	60	---	8,893	---	12,150	---	314,537	---	2,000	---	511,058
Filter 7-9 Options1 LS			2,581	---	173,478	60	---	8,893	---	12,150	---	314,537	---	2,000	---	511,058
Contingency & Allowance1 LS																
CONT1	Construction Contingency	1 LS	---	---	---	---	---	---	---	31,187	---	---	---	---	---	31,187
Contingency & Allowance1 LS			---	---	---	---	---	---	---	31,187	---	---	---	---	---	31,187
General Requirements1 LS																
GR	General Requirements - AWI	1 LS	---	---	---	10,207	---	45,322	---	36,178	---	---	---	---	---	81,501
General Requirements1 LS			---	---	---	10,207	---	45,322	---	36,178	---	---	---	---	---	81,501
DIRECT PRICES			2,581	---	173,478	10,267	---	54,216	---	79,516	---	314,537	---	2,000	---	623,746
GENERAL EXPENSE PRICES																
FIXED GENERAL EXPENSE1 LS																
GE 8	F6 BOND	100 %	---	---	---	---	---	---	138.42	13,842	---	---	---	---	138.42	13,842
GE 9	F7 INSURANCE	100 %	---	---	---	---	---	---	133.62	13,362	---	---	---	---	133.62	13,362
FIXED GENERAL EXPENSE1 LS			---	---	---	---	---	---	---	27,204	---	---	---	---	---	27,204
VARIABLE GENERAL EXPENSE1 LS																
GE 17	V7 PROJECT STAFF - AWI	100 %	1,300	126.83	164,881	1,730	605.89	60,589	---	---	18	1,800	---	---	2,272.70	227,270
VARIABLE GENERAL EXPENSE1 LS			1,300	---	164,881	1,730	---	60,589	---	---	---	1,800	---	---	---	227,270
GENERAL EXPENSE PRICES			T.DC.	1,300	---	164,881	1,730	---	60,589	---	27,204	---	1,800	---	---	254,475
TOTAL PRICE			3,881	---	338,359	11,997	---	114,805	---	106,720	---	316,337	---	2,000	---	878,221
Fee																76,233
TOTAL BID																954,454

J01 STANDARD LANDSCAPE MASTER.RPT

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Proprietary and Confidential



BE Number FILTERS 7-9
Opportunity No
Owner File No
Project **New Blank Estimate**
Location

Item Analysis Sheet

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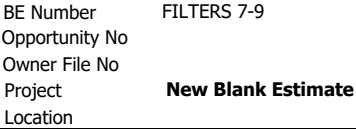
Justin McRae

AWI	AWI Underdrain	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total PRICE	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
Demo Underdrains 7-9		1	LS															
Demo Existing Underdrains 7-9		3	EA															
Foreman	3	EA	0.013	80.000	240	^{SU3} 82.30	19,752	---	---	---	---	---	---	---	---	6,584.00	19,752	
Demo Blocks	396	EA	0.800	1.250	495	^{WKB} 63.37	31,368	---	---	---	---	---	---	---	---	79.21	31,368	
Demo Pedestals & Anchors	300	EA	0.800	1.250	375	^{WKB} 63.37	23,764	---	---	---	---	---	---	---	---	79.21	23,764	
Patch Pedestals	300	EA	0.800	1.250	375	^{WKB} 63.37	23,764	---	---	---	---	---	---	---	---	79.21	23,764	
Patch Pedestals	300	EA	---	---	---	---	---	---	---	---	10.00	3,000	---	---	---	10.00	3,000	
Dumpster	3	EA	---	---	---	---	---	---	---	800.00	2,400	---	---	---	---	800.00	2,400	
Forklift, RT 10,000# Reach	3	EA	0.063	16.000	48	^{OP2} 75.05	3,602	148.22	7,115	---	---	---	---	---	---	3,572.32	10,717	
Buggy Cart STS	1	LS	---	---	---	---	---	---	---	---	1,500	---	---	---	---	---	1,500	
Containment STS	1	LS	---	---	---	---	---	---	---	---	1,500	---	---	---	---	---	1,500	
STS	1	LS	---	---	---	---	---	---	---	---	2,500	---	---	---	---	---	2,500	
Demo Existing Underdrains 7-9		3.00	EA	0.002	511.000	1,533	66.70	102,250	2,371.52	7,115	2,633.33	7,900	1,000.00	3,000	---	---	40,088.21	120,265
Retrofit AWI Removal Filter 7		1	EA															
Foreman	1	EA	0.042	24.000	24	^{SU3} 82.30	1,975	---	---	---	---	---	---	---	---	1,975.20	1,975	
Retrofit AWI Removal Filter 7	1	EA	0.014	72.000	72	^{WKB} 63.37	4,563	---	---	---	---	---	---	---	---	4,562.64	4,563	
STS	1	LS	---	---	---	---	---	---	---	---	1,000	---	---	---	---	---	1,000	
Retrofit AWI Removal Filter 7		1.00	EA	0.010	96.000	96	68.10	6,538	---	---	1,000.00	1,000	---	---	---	---	7,537.84	7,538
Demo Underdrains 7-9		1.00	LS	---	---	1,629	66.78	108,788	---	7,115	---	8,900	---	3,000	---	---	---	127,802
AWI Filter Underdrain 7-9		1	LS															
AWI Underdrain System	1	LS	---	---	---	---	---	---	---	---	---	304,868	---	---	---	---	304,868	
Additional Sand Media	1	LS	---	---	---	---	---	---	---	---	---	6,669	---	---	---	---	6,669	

AWI	AWI Underdrain	1.00
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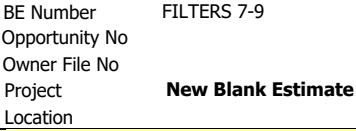


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Item Analysis Sheet

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor		Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total PRICE		
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
-1	STS	1	EA	---	---	---	---	---	---	1,000.00	-1,000	---	---	---	---	-1,000.00	-1,000	
Credit AWI Retrofit 8&9 Intalllation		2.00	EA	-0.006	-160.000	-320	68.10	-21,793	---	---	-500.00	-1,000	---	---	---	---	-11,396.40	-22,793
AWI Filter Underdrain 7-9		1.00	LS	---	---	952	67.95	64,690	---	1,779	---	3,250	---	311,537	---	2,000	---	383,255
AWI Underdrain		1.00	LS	---	---	2,581	67.21	173,478	---	8,893	---	12,150	---	314,537	---	2,000	---	511,058



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New Blank Estimate

Item Analysis Sheet

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CONT1	Construction Contingency	1.00	LS
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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total PRICE	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Construction Contingency	623,746	DC	---	---	---	---	---	---	---	0.050000	31,187	---	---	---	---	0.050000	31,187
Construction Contingency				1.00	LS	---	---	---	---	---	---	31,187	---	---	---	---	---	31,187

CONT1	Construction Contingency	1.00
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GR	General Requirements - AWI	1.00	LS
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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total PRICE	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
01 50 00 Temp Facilities & Controls		1	LS															
Oper Office Bldg		1	LS															
PCL / Engineer Office		16	MO															
	Engineer Trailer Office 12'x44'	6	MO	1.000	1.000	---	---	---	4.62	4,800	---	---	---	---	---	---	800.00	4,800
	Office Equipment PCL	8	MO	---	---	---	---	---	---	---	550.00	4,400	---	---	---	---	550.00	4,400
	T1 Connection and Virtual Private Network	8	MO	---	---	---	---	---	---	---	750.00	6,000	---	---	---	---	750.00	6,000
	Office Supplies PCL	8	MO	---	---	---	---	---	---	---	350.00	2,800	---	---	---	---	350.00	2,800
	Post & Courier	8	MO	---	---	---	---	---	---	---	200.00	1,600	---	---	---	---	200.00	1,600
	Sewage Billing	8	MO	---	---	---	---	---	---	---	500.00	4,000	---	---	---	---	500.00	4,000
PCL / Engineer Office		16.00	MO	---	---	---	---	---	300.00	4,800	1,175.00	18,800	---	---	---	---	1,475.00	23,600
Oper Office Bldg		1.00	LS	---	---	---	---	---	---	4,800	---	18,800	---	---	---	---	---	23,600
Oper Radio System		1	LS															
	4 Site Radios	6	MO	---	---	---	---	---	---	---	40.00	960	---	---	---	---	160.00	960
Oper Radio System		1.00	LS	---	---	---	---	---	---	---	---	960	---	---	---	---	---	960
Site Services		1	LS															
	2 Portable Toilets	6	MO	---	---	---	---	---	---	---	250.00	3,000	---	---	---	---	500.00	3,000
	Garbage Pickup	6	MO	---	---	---	---	---	---	---	800.00	4,800	---	---	---	---	800.00	4,800
Site Services		1.00	LS	---	---	---	---	---	---	---	---	7,800	---	---	---	---	---	7,800
Oper Trailers & Vans		1	LS															
	5 Tcon Tool 8'x40' - C	6	MO	1.000	1.000	---	---	---	0.5683	2,949	---	---	---	---	---	---	491.56	2,949

U01 STANDARD-LANDSCAPE-MASTER.RPT

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GR	General Requirements - AWI	1.00
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GR	General Requirements - AWI	1.00	LS
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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor		Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total PRICE	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit
Oper Trailers & Vans		1.00	LS	---	---	---	---	---	2,949	---	---	---	---	---	---	---	2,949
Forklifts & Timespan Equipment		1	LS														
Forklift, RT 10,000# Reach		5	MO	1.000	1.000	---	---	---	40.75	35,245	---	---	---	---	---	7,048.92	35,245
Forklifts & Timespan Equipment		1.00	LS	---	---	---	---	---	35,245	---	---	---	---	---	---	---	35,245
01 50 00 Temp Facilities & Control		1.00	LS	---	---	---	---	---	42,994	---	27,560	---	---	---	---	---	70,554
First Aid & Safety STS		1	LS														
F.A. & Safety Supplies		3,881	MH	---	---	---	---	---	---	0.120000	466	---	---	---	---	0.120000	466
Fire Protection		3,881	MH	---	---	---	---	---	---	0.070000	272	---	---	---	---	0.070000	272
Water Coolers						4.00	EA					50.00					
Drinking Water & Ice		8	MO	---	---	---	---	---	---	500.00	4,000	---	---	---	---	500.00	4,000
Air Monitors		6	MO	1.000	1.000	---	---	---	0.9263	961	---	---	---	---	---	160.25	961
Rescue Tripod w/yo yo		6	MO	1.000	1.000	---	---	---	0.9263	961	---	---	---	---	---	160.25	961
Yo Yo Winch		6	MO	1.000	1.000	---	---	---	0.3906	405	---	---	---	---	---	67.57	405
First Aid & Safety STS		1.00	LS	---	---	---	---	---	2,328	---	4,737	---	---	---	---	---	7,066
SMALL Tools-Expendables		1	LS														
SMALL Tools-Expendables		3,881	MH	---	---	---	---	---	---	1.00	3,881	---	---	---	---	1.00	3,881
SMALL Tools-Expendables		1.00	LS	---	---	---	---	---	---	---	3,881	---	---	---	---	---	3,881

GR	General Requirements - AWI	1.00
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GR	General Requirements - AWI	1.00	%
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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total PRICE	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
General Requirements - AWI		1.00	LS	---	---	---	---	---	---	45,322	---	36,178	---	---	---	---	---	81,501



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GE 8	F6 BOND	100.00	%
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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total PRICE	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
US CONTRACT BOND Class B		100	%															
	US CONTRACT BOND Class B	954,454	TB	---	---	---	---	---	---	---	0.010000	9,545	---	---	---	---	0.010000	9,545
US CONTRACT BOND Class B		100.00	%	---	---	---	---	---	---	---	95.45	9,545	---	---	---	---	95.45	9,545
SDI		100	%															
	SDI - Subcontractor	2,000	SC	---	---	---	---	---	---	---	0.013500	27	---	---	---	---	0.013500	27
	SDI - Equipment	316,337	MC	---	---	---	---	---	---	---	0.013500	4,271	---	---	---	---	0.013500	4,271
SDI		100.00	%	---	---	---	---	---	---	---	42.98	4,298	---	---	---	---	42.98	4,298
F6 BOND		100.00	%	---	---	---	---	---	---	---	138.42	13,842	---	---	---	---	138.42	13,842

GE 8	F6 BOND	100.00
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Proprietary and Confidential

GE 9	F7 INSURANCE	100.00	%
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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total PRICE	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	=====																	
	Delete Insurance not applicable.																	
	Place * beside appropriate Insurance Required.																	
	=====																	
	General Liability	100 %																
	Gen Liab-USA 8.50/M	954,454	TB	---	---	---	---	---	---	---	0.010000	9,545	---	---	---	---	0.010000	9,545
	General Liability	100.00 %		---	---	---	---	---	---	---	95.45	9,545	---	---	---	---	95.45	9,545
	Builders Risk Insurance	100 %																
	Builders Risk	954,454	TB	---	---	---	---	---	---	---	0.004000	3,818	---	---	---	---	0.004000	3,818
	Builders Risk Insurance	100.00 %		---	---	---	---	---	---	---	38.18	3,818	---	---	---	---	38.18	3,818
	F7 INSURANCE	100.00 %		---	---	---	---	---	---	---	133.62	13,362	---	---	---	---	133.62	13,362

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

U01 STANDARD-LANDSCAPE-MASTER.RPT	GE 9	F7 INSURANCE	100.00
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GE 17	V7 PROJECT STAFF - AWI	100.00	%
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total PRICE	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
Management		100 %																
	Field Superintendent	6 MO		1.000	1.000	1,040	^{SU2} 136.74	142,209	35.02	36,353	---	---	300.00	1,800	---	---	30,060.47	180,363
	Foreman	1 MO		1.000	1.000	173	^{SUB} 82.30	14,265	---	---	---	---	---	---	---	---	14,265.32	14,265
	Site Truck - Foreman Use	4 MO		1.000	1.000	---	---	---	35.02	24,236	---	---	---	---	---	---	6,058.89	24,236
	Safety Supervisor	0.50 MO		1.000	1.000	87	^{OF6} 97.00	8,406	---	---	---	---	---	---	---	---	16,812.82	8,406
Management		100.00 %		0.077	13.000	1,300	126.83	164,881	605.89	60,589	---	---	18.00	1,800	---	---	2,272.70	227,270
V7 PROJECT STAFF - AWI		100.00 %		0.077	13.000	1,300	126.83	164,881	---	60,589	---	---	18.00	1,800	---	---	2,272.70	227,270



AWI US
473 West Universal Circle
Sandy, UT 84070

801.566.1700
www.awi-us.com

April 3, 2024

Jessie Farmer
PCL Construction, Inc.
2000 S Colorado Blvd
Building 2 Suite 500
Denver, CO 80222

Subject: AWI Phoenix™ Lateral Underdrain Systems for the Arvada Water treatment Plant

Dear Jessie:

As the manufacturer of Phoenix Underdrain Systems, Anthratech U.S. Inc. (AWI) is pleased to offer for your consideration its stainless steel filter underdrains for inclusion in the City of Arvada, CO Filter Rehab Project (Filters 7 – 9).

AWI prides itself on the quality of the products we offer and the level of service we provide to all of our customers including Consulting Engineers, Owners, and Contractors. A key attribute of Phoenix Underdrain Systems is the speed and ease with which they can be installed. If we can do more to help you understand exactly how installation is accomplished and facilitate your estimating process, we would welcome the opportunity.

During the bidding process, AWI will be represented locally by Brian Dieke with contact information shown below:

Engineered Equipment Solutions
700 Colorado Blvd
Suite #282
Denver, CO 80206

Telephone: 303.921.2846
E-mail: bdieke@e-equipmentsolutions.com

AWI...Leaders in Filter Optimization

We wish you success in your bidding efforts and hope to have a chance to support you in making this a successful project – both a financial success as you construct and close out the project and as an installation that both of our organizations can point to as a positive reference in our future endeavors.

Should you have any questions or concerns regarding our offering, please contact us at your earliest convenience.

Regards,



Perry D. Pelitera
AWI Director of Sales & Marketing

cc: Brian Dieke/EES





PHOENIX™ FILTER UNDERDRAIN PROPOSAL

for the

CITY OF ARVADA WATER TREATMENT PLANT
FILTERS 7-9

APRIL 3, 2024



Proposal Contents¹

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¹ Note that all page numbers in this Table of Contents are hyperlinks in .pdf format. The reader can go to the desired location in this document by simply clicking on the page number. From most pages in the document, the reader can get back to the Table of Contents by clicking on the hyperlink entitled "[Contents](#)" at the top of the page.



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AWI OFFERING

AWI PHOENIX FILTER UNDERDRAIN SYSTEMS

AWI has been building its unique filter underdrain systems for installation in new filters and retrofit applications for more than 30 years. AWI uses a combination of design principles developed from decades of field experience along with the latest innovations in granular media filtration technology. The product offered in this proposal has been proven in hundreds of operating installations.

PROPRIETARY AND CONFIDENTIAL INFORMATION

The attached document contains proprietary and confidential information and is submitted under a confidential relationship for the sole purpose of responding to a request to solve various process and operational problems.

By accepting this document, the recipient agrees:

- it will not disclose to third parties or use any drawings, specifications, designs, processes or information supplied by AWI in any manner detrimental to the interests of AWI,
- any special features peculiar to this design and information gained as a result of this document shall be treated as confidential and shall be the property of AWI and will not be incorporated in whole or in part in other projects unless recipient obtains written permission from AWI to do so,
- not to copy in whole or in part nor reveal its contents in any manner or for any other purpose except for the purpose stated herein,
- the foregoing applies, without limitation, to all documents prepared by AWI in connection with this submission and the recipient acknowledges this document involves confidential, proprietary rights of AWI and all design, manufacturing, reproduction, use and sale rights regarding same as expressly reserved.

ITEM 1 – AWI PHOENIX FILTER UNDERDRAINS

AWI proposes to furnish filter underdrain systems suitable for installation in three (3) filters with each filter having two (2) cells. Each filter cell is 11.66 feet wide by 21 feet long.

AWI Phoenix Filter Underdrain Scope of Supply

The following items are included as part of the filter underdrain system for each filter cell:

- Low Profile Laterals constructed of 304 stainless steel necessary to form a complete underdrain system
- Feedbox (note that ports through the gullet wall at each end of the filter will need to be plugged)
- Gasketed end feed connections for each underdrain lateral
- Power wire brush cleaning of all fabricated stainless steel components
- All necessary 304 stainless steel anchors with appropriate hold down clamps
- All necessary HILTI adhesive for setting the anchors
- All necessary HILTI applicator disposable nozzles
- All necessary hole brushes with brush handles
- All necessary 304 stainless steel assembly hardware
- All necessary gaskets – cut to length (slight excess)
- All necessary sealant - Sikaflex (installer will need a caulking gun)
- Shims necessary to level the underdrain system
- Fastener overage amounting to 2% of each type of fastener

The following are provided under this proposal item:

- One (1) HILTI epoxy applicator
- Manuals for installation, operation, and maintenance
- Service for installation supervision and commissioning (refer to the “Installation and Commissioning Supervision” section of this proposal)
- Freight to the jobsite – terms are FOB jobsite

ITEMS FURNISHED BY OTHERS AND NOT BY AWI

Unless specifically noted in this proposal as offered by AWI and specifically included by item name in a purchase order tendered to AWI in response to this offering, AWI does not include:

- Engineering of any kind not directly related to design of an AWI Product
- Concrete design or concrete work of any kind including end plugs or plugging of wall ports
- Installation labor
- Blowers
- Pumps
- Valves
- Piping or hose other than specifically called out in this proposal
- Controls
- Wiring
- Grout and grout strips
- Concrete end plugs if needed
- Concrete plugging of end wall ports if needed
- Unloading
- Equipment required for installation
- Anchor bolt pull testing if required
- Tools
- Consumables
- Painting
- Filter disinfection or disinfection chemicals
- Filter media of any kind unless specifically called out in this proposal
- Water required for commissioning
- Service other than as noted in this proposal

AWI PRICE INFORMATION

Offer Pricing

Pricing for the AWI offering for this project is presented in the table below:

AWI Pricing		
Item	Description	Price
1	AWI Phoenix Feedbox Underdrain Laterals	\$ 304,868

Firm Price Bid

The prices submitted in this proposal are based upon receipt of a purchase order acceptable to AWI on or before May 4, 2024 and customer acceptance of shipment in accordance with the shipment schedule presented in this proposal. If the above indicated order date is exceeded, prices and shipping dates are subject to review and adjustment.

Stainless steel costs are subject to rapid escalation at times; therefore, AWI reserves the right to adjust its pricing accordingly in the event there is a sharp increase in quoted costs for stainless steel in the U.S. market.

Taxes

Sales or use taxes are not included in this offer price. Any such taxes incurred by AWI, or required to be passed on to AWI by any of its subcontractors, will be added to the previously quoted price to arrive at the total sales price. AWI will advise Purchaser of the amount of such taxes as soon as they are determined at which time Purchaser shall immediately provide AWI with a change order to reflect the taxes being added to arrive at the total sales price.

Payment Terms

The total amount of the order shall be payable as follows:

- 30% upon submittal of approval drawings
- 70% upon shipment of equipment

All invoices are due and payable within thirty (30) days of the date rendered. In the event AWI is not paid within the specified time frame due to anything other than performance by AWI, AWI reserves the right to charge a penalty of 2% per month on the unpaid balance.

AWI PROJECT SCHEDULE

The projected AWI schedule for this project is:

- Preparation of submittal information in accordance with this proposal – 8 to 10 weeks
- Scheduled block of time allotted for review and return of submittal information – 2 weeks
- Scheduled block of time allotted for addressing any issues raised during the initial submittal process – 2 weeks
- Time for fabrication and shipment leaving the AWI fabrication facility – 12 to 16 weeks

AWI will finalize its shipping schedule in conjunction with the purchaser at the time of order acceptance. Should AWI subsequently be asked to delay shipment beyond the agreed upon shipping schedule, an amount equal to 1% of the unpaid purchase order balance per month of delay will be added to the total purchase amount.

INFORMATION PROVIDED BY AWI

Submittal Information

General arrangement drawings with accompanying information necessary to facilitate designer approval of AWI Products offered will be provided within the number of weeks shown in this proposal under the heading “AWI Project Schedule” following receipt at the AWI offices of a written purchase order reflecting an agreement between the Purchaser and AWI.

Installation, Operation and Maintenance Manuals

An electronic version in Adobe .pdf format of the appropriate AWI Installation, Operation, and Maintenance Manual including project-specific information such as erection drawings will be sent to the jobsite prior to shipment of AWI Products.

AWI SERVICES

Installation and Commissioning Supervision

AWI will supply a Field Service Technician who is a direct employee of AWI to provide instruction, installation supervision, and commissioning oversight for AWI Products as noted in the table below:

AWI Supervision		
Item	Supervision Days	Supervision Trips
1	12	4

Supervision days are calculated on a portal-to-portal basis from AWI premises to the job site and return. The supervision time shown is commensurate with the supervision time normally required by a competent construction crew for installation and startup of AWI Phoenix Filter Underdrains. Adequate notice of a need for supervision defined as two weeks' notice must be provided to insure availability of qualified supervision personnel. AWI guarantees the personnel sent to perform supervision are fully qualified and a direct employee of AWI but cannot guarantee that the same Field Service Technician will always be available.

Customer Service

AWI will provide upon request additional services of experienced factory trained personnel for construction/installation consultation, mechanical inspection, operator training, and equipment start-up. Requested service will be billed at the rate in effect at the time that service is performed plus travel and accommodation expenses.

Billing rates for service in effect as of January 1, 2023 are:

AWI Service Rates	
Circumstances	Rate
Monday through Friday	\$1,450/day
Overtime	1½ times the above rate
Saturday	1½ times the above rate
Sunday	2 times the above rate

The above rates are subject to adjustment without notice to conform to the rates in effect at the time the work is performed.



ANTHRATECH U.S. INC. STANDARD WARRANTY

For the benefit of the original user, Anthratch U.S. (dba AWI) warrants all new equipment manufactured by or for it to be free from defects in material and workmanship; and will replace or repair, F.O.B. Sandy, Utah or other location designated by it, any part or parts returned to it which examination shall show to have failed under normal use and service by the original user within one year following initial shipment by AWI. Such repair or replacement shall be free of charge except for those parts such as filter media and the like that are consumable and normally replaced during maintenance. Such consumables shall be subject to pro-rata charge based upon AWI's estimate of the percentage of normal service life realized from the part. AWI's obligation under this warranty is conditioned upon its receiving prompt notice of claimed defects which shall in no event be later than thirty (30) days following expiration of the one year warranty period and is limited to repair or replacement as aforesaid.

THIS WARRANTY, INCLUDING THE STATED REMEDIES, IS EXPRESSLY MADE BY AWI U.S. AND ACCEPTED BY PURCHASER IN LIEU OF ALL OTHER WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE WHETHER WRITTEN, ORAL, EXPRESS, IMPLIED, OR STATUTORY. AWI U.S. NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITIES WITH RESPECT TO ITS EQUIPMENT. AWI U.S. SHALL NOT BE LIABLE FOR NORMAL WEAR AND TEAR, NOR FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGE DUE TO INOPERABILITY OF ITS EQUIPMENT FOR ANY REASON NOR ON ANY CLAIM THAT ITS EQUIPMENT WAS NEGLIGENTLY DESIGNED OR MANUFACTURED.

This warranty shall not apply to equipment or parts thereof which have been altered or repaired by parties other than AWI and its authorized agents. Neither does this warranty apply if the equipment or parts have been damaged by improper installation, application, erosion or corrosion of any sort, or subjected to misuse, abuse, neglect or accident.

AWI makes no warranty with respect to parts, accessories, or components manufactured by others. The warranty applicable to such items is that offered by their respective manufacturer.



AWI SUPPLEMENTAL EXTENDED WARRANTY

The AWI warranty will extend for a total duration of five (5) years from the date that the document certifying that the filter underdrains are properly installed is signed. The filter underdrain warranty will cover the cost of the following items:

- Repair or replacement of any failed filter underdrains, fasteners, and appurtenances supplied by the filter underdrain manufacturer.
- Any movement or removal of filter media necessary to effect needed repairs.
- Removal of any filter underdrain components and appurtenances which have failed to provide proper service including any required demolition.
- Reinstallation of repaired or replaced filter underdrains.
- Reinstallation of any filter media removed for the purpose of the covered warranty work.

AWI guarantees the structural integrity of the filter underdrains and underdrain system when that system is subjected to operating differential pressures up to 10 psi as measured in the feed piping which supplies backwash water to the filter underdrains. (This statement should be interpreted to mean that with all of the media retention slots plugged a static head of 23 feet can be applied to the filter underdrain system without the filter underdrain system sustaining damage.) This guarantee does not apply to damage caused by water hammer events because water hammer is a function of system hydraulic characteristics which are beyond the control of AWI.

AWI is not responsible for the concrete upon which the filter underdrains are installed under the terms of this warranty. The filter underdrain manufacturer will not be responsible if contaminated backwash water causes the underdrains to plug resulting in differential pressures exceeding 10 psi. System operating pressures within the filter underdrains will be continuously monitored and recorded by the user.

In the event of a failure under the terms of this warranty, AWI will pay the cost of all warranty related repairs and the Owner will not be required to pay for any of the warranty-related activities identified in this warranty statement. The Owner will be responsible for providing a nearby laydown area for the storage of filter media removed during any warranty related activities as well as any utilities required to perform the warranty work.

UNITED STATES
473 West Universal Circle
Sandy, Utah 84070

Phone: (801) 566-1700
Fax: (801) 566-1722

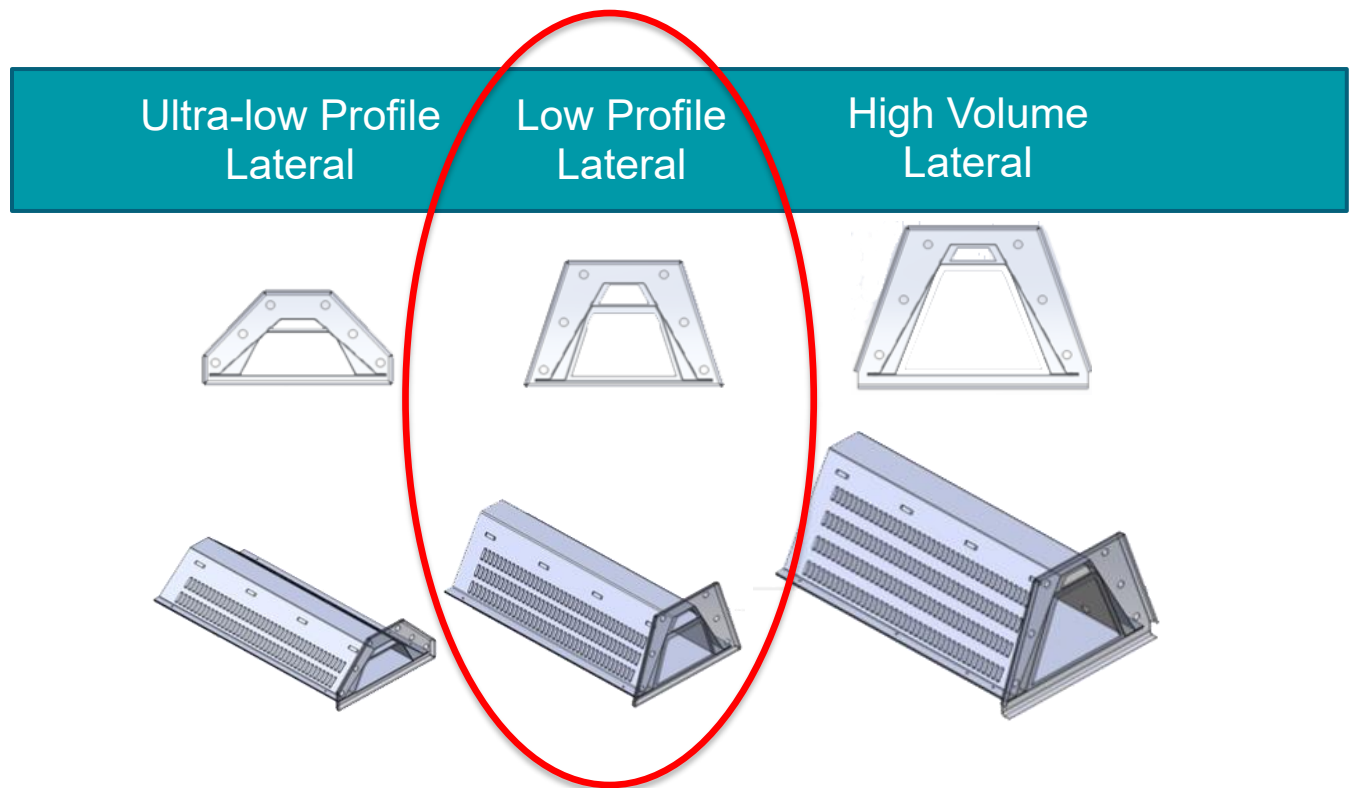


CANADA
4450 – 46th Avenue
Calgary, Alberta T2B 3N7

Phone: (403) 255-7377
Fax: (403) 255-3129

LOW PROFILE LATERALS

AWI offers three different size filter underdrain laterals as shown in the illustration that follows.



In general, use of the lowest applicable lateral profile is desirable to create as much room as possible in the filter cell for filter media. Velocity of flow in the lateral's water conduit is the limiting factor when it comes to lateral height – if the velocity becomes too great then the lateral headloss is excessive and we need to use a taller lateral with less headloss. The effective length of a lateral is the distance from the point at which backwash water is fed to the lateral to the end of the lateral (i.e., the effective length of a lateral in a 20-foot-wide filter that is fed from a center flume is nominally 10 feet).

AWI...Leaders in Filter Optimization

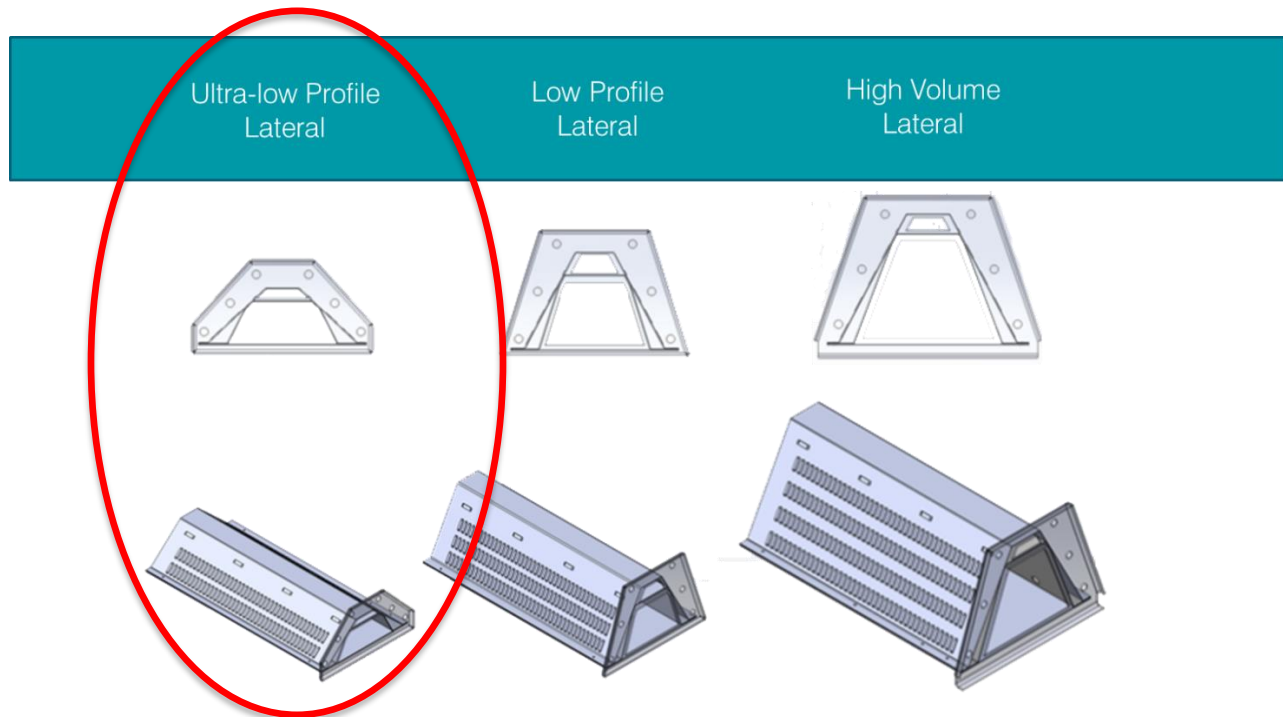
In the absence of more detailed information, AWI typically limits effective lengths of its laterals as follows:

- Ultra-low Profile Laterals – 12 feet (approximately 3 inches high)
- Low Profile Laterals – 30 feet (approximately 5¼ inches high)
- High Volume Laterals – up to 60 feet (approximately 6½ inches high)

The relevant dimensions for Low Profile Laterals are:

- Height – 5¼ inches (note that the laterals rest on grout strips that are normally between ½ and 1 inch high)
- Lateral Bottom Width – 8.83 inches (space between laterals is needed to accommodate anchorage)
- Nominal Spacing – 12 inches
- Maximum Spacing – 12½ inches
- Actual Spacing – calculated to be uniform across the filter

ULTRA-LOW PROFILE LATERALS



In general, use of the lowest applicable lateral profile is desirable to create as much room as possible in the filter cell for filter media. Velocity of flow in the lateral's water conduit is the limiting factor when it comes to lateral height – if the velocity becomes too great then the lateral headloss is excessive and we need to use a taller lateral with less headloss. The effective length of a lateral is the distance from the point at which backwash water is fed to the lateral to the end of the lateral (i.e., the effective length of a lateral in a 20-foot-wide filter that is fed from a center flume is nominally 10 feet).

In the absence of more detailed information, AWI typically limits effective lengths of its laterals as follows:

- Ultra-lowProfile Laterals – 12 feet (approximately 3 inches high)
- Low Profile Laterals – 30 feet (approximately 5¼ inches high)
- High Volume Laterals – up to 60 feet (approximately 6½ inches high)

The relevant dimensions for Ultra-low Profile Laterals are:

- Height – 3 inches (note that the laterals rest on grout strips that are normally between $\frac{1}{2}$ and 1 inch high)
- Lateral Bottom Width – 8.83 inches (space between laterals is needed to accommodate anchorage)
- Nominal Spacing – 12 inches
- Maximum Spacing – $12\frac{1}{2}$ inches
- Actual Spacing – calculated to be uniform across the filter

Justin McRae

From: cknox@cogentcompanies.com
Sent: Tuesday, April 2, 2024 9:09 AM
To: Justin McRae
Cc: Tyler Hammond
Subject: RE: Ralston WTP - Arvada Filters 7-9
Attachments: I24145 Leopold Filtration Equipment REV00 3-29-24.docx

Justin,

It was nice talking with you last week. Here is the proposal from Leopold.

The price is \$297,700.00.

FYI – I'm on PTO a couple days this week but am keeping my eyes out for urgent requests. Let me know if you have questions before I get back on Thursday.

Thanks

Chase Knox | 970.691.0805 | We RENT!



From: Justin McRae <JWMcRae@pcl.com>
Sent: Thursday, March 28, 2024 11:41 AM
To: cknox@cogentcompanies.com
Cc: Tyler Hammond <THammond@pcl.com>
Subject: RE: Ralston WTP - Arvada Filters 7-9

Chase,

We could set up a call to discuss with our PE on the project who knows the most about this issue. Let me know if you are available for a quick call this afternoon.

Thanks

Justin McRae
Senior Estimator

PCL Construction, Inc.
2000 S. Colorado Blvd., Suite 2-500
Denver, CO 80222
M: 407-427-0656
jwmcrae@pcl.com

www.pcl.com
TOGETHER WE BUILD SUCCESS

From: cknox@cogentcompanies.com <cknox@cogentcompanies.com>
Sent: Wednesday, March 27, 2024 10:44 PM

Red Flint Sand & Gravel, LLC

1 American Blvd.
PO Box 688
Eau Claire, WI 54702
Phone: (715) 855-7600
Fax: (715) 855-7608



DATE: April 9, 2024
TO: Justin Mcrae
Pcl Construction
FROM: Kaylie Wollum
SUBJECT: Granular Filter Materials
QUOTE: QTE240402E12-01REV1

Phone: 407-427-0656
Email: jwmcrae@pcl.com

ARVADA, CO

Listed below is our quotation for the Red Flint products you requested, quoted with delivery to Arvada, CO. Our product pricing will remain valid for 30 days; however, Red Flint reserves the right to re-quote the media as conditions change and update the purchase order pricing accordingly, and freight rate at time of shipping will apply. Our terms are net 30 days, with 1.5% interest charged per month on all account balances over 30 days. Red Flint imposes a surcharge of 2% on the transaction of Visa, MasterCard, Discover, and American Express credit cards, which is not greater than our cost of acceptance. We do not surcharge debit cards.

Red Flint granular filter materials have been used in municipal and industrial filtration applications since 1917. Red Flint filtration media is produced to meet exacting size and uniformity specifications and meets or exceeds the AWWA B100-16 Standard (Granular Filter Materials) and is NSF/ANSI Standard 61 (Drinking Water System Components – Health Effects) certified for quality and purity.

ITEM CODE	ITEM DESCRIPTION	QUANTITY
AB36010	Filter Sand 0.55-0.65mm, UC<1.4	8 (40 cuft) super sacks
AB36020	Filter Sand 0.55-0.65mm, UC<1.4	3 (30 cuft) super sacks
PA11099	Industrial Pallets	11 pallets
Material Subtotal:		\$2,868.60
TA12099	Estimated Shipping & Handling	1 flatbed
Freight Subtotal:		\$3,800.00
TOTAL USD:		\$6,668.60

Additional Notes:

1. In order to meet your delivery schedule, Red Flint requests that a Purchase Order be issued **5-6 weeks** prior to your estimated shipping date. This lead time **does not** include transit time to your location.
2. Independent Laboratory Testing is not included in the quoted price.
3. **Shipping & Handling price is based on current rates and fuel surcharge. Actual rates and surcharge at the time of shipping will apply.** Delivery will be made via flatbed truck; a forklift is needed to remove the pallets from the truck. After the first hour of truck unloading, there is an \$85/hour demurrage charge for any further unloading time.
4. We advise all of our customers to account for the volatility of the shipping market in their project contingency plans. We will pass on increases, should they occur on this project, when we invoice. If reductions were to occur, we will also pass on those savings at invoice.
5. Bulk Density of Sand & Gravel = 100 lb/cubic foot.

6. Prior to accepting a purchase order, Red Flint will provide updated and current freight rates. The freight rates at time of shipping will apply; rates will be updated after purchase order no less than every 30 days for the duration of the project as freight rates change
7. Red Flint shall not be liable for any delay or failure in delivering any of the products if such delay or failure shall be due to one or more of the following causes: fire, strike, lockout, dispute with workmen, pandemic, flood, lightning, accident, delay in transportation, shortage of fuel, inability to obtain material within quoted prices, war, embargo, demand or requirement of the United States or any governmental or war activity, or any other cause whatsoever beyond the reasonable control of Red Flint. In addition, Red Flint shall not be liable for any delays or failure attributable to failure of any materials supplier or freight carrier to perform any of its obligations in a timely manner. In the event of any such delay, Red Flint's obligations related to such products shall be excused for the period of such delay and the time for the performance shall be extended by a period equivalent to such delay.
8. Material released for pick-up must ship within 60 days of the production due date agreed to by the customer and Red Flint. Material that remains after 60 days will be billed to the customer with two months of storage fees added. Additional storage fees will be billed based on the number of months in storage. If material remains in storage for an extended period of time, Red Flint may have to re-bag material. A cost estimate will be provided to the customer if rebagging becomes necessary. Red Flint reserves the right to refuse storage of material and require pick-up with two-weeks' notice.

Please advise if we can be of further assistance by calling Red Flint at (715) 855-7600 or you can email me at kaylie.wollum@redflint.com. Purchase orders can be sent to sales@redflint.com. Thank you for considering Red Flint Sand and Gravel.

Exhibit B

Amendment No. 6

To The “Construction Management/General Contractor Agreement for Preconstruction Services for The Rehabilitation and Modification of The Filter and Solids Handling Systems at The Ralston Water Treatment Plant,” By and Between the City of Arvada and PCL Construction Inc., For the Purpose of Extending the Guaranteed Date of Substantial Completion and For Underdrains in Filters 7-9, Thereby Increasing the Contract Amount From \$18,515,985.00 To an Amount Not to Exceed \$19,722,518.00



BE Number ARVADA MASTER
Opportunity No
Owner File No
Project New Blank Estimate
Location

Item Analysis Sheet

Detail Page 1 of 1
Jul 12, 2024
8:00:06 AM

Justin McRae

AL-1	Coating Allowance	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Cost	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Coatings in Filters																	
	Applewood Quote	1	LS	---	---	---	---	---	---	---	---	---	---	---	---	208,100	---	208,100
	Applewood Bond	1	LS	---	---	---	---	---	---	---	---	---	---	---	---	6,243	---	6,243
	Bonds and Insurance	100	%															
	US CONTRACT BOND Class B	241,922	TC	---	---	---	---	---	---	---	0.010000	2,419	---	---	---	---	0.010000	2,419
	Builders Risk	241,922	TC	---	---	---	---	---	---	---	0.004000	968	---	---	---	---	0.004000	968
	Gen Liab-USA 8.50/M	241,922	TC	---	---	---	---	---	---	---	0.010000	2,419	---	---	---	---	0.010000	2,419
	SDI - Subcontractor						SC						0.01					
	Bonds and Insurance	100.00	%	---	---	---	---	---	---	---	58.06	5,806	---	---	---	---	58.06	5,806
	CA Fee	100	%															
	Fee	241,922	TC	---	---	---	---	---	---	---			0.090000	21,773	---	---	0.090000	21,773
	CA Fee	100.00	%	---	---	---	---	---	---	---			217.73	21,773	---	---	217.73	21,773
	Coating Allowance	1.00	LS	---	---	---	---	---	---	---		5,806	---	21,773	---	214,343	---	241,922



Change Order

Attn: PCL

Date: 7/11/2024

Project: Ralston WTP - Filter Underdrain Coating

Scope: Underdrains on Filters 7,8 & 9 are showing heavy deterioration of the concrete.

There are 3 areas identified which need a coating system:

Gullet/Feed Box, Floor and North wall.

Each Price Option is for all 3 tanks (7,8,9)

SCHEDULE:

Build containment structure over tanks and install fans to create a dust free environment.

Prepare existing concrete by abrasive blasting to achieve clean, sound and profiled concrete (ICRI CSP-3), and in accordance with SSPC-SP-13/NACE 6.

Saw cut details at all coating termination joints both horizontal and vertical.

Holiday Test Coating to ensure pinhole free and consistent dry film thickness

Coating System A; applied to gullet/feed box area

Apply surface filler; Tnemec N218 or 215

Apply 1 coat of Primer; Tnemec Series V140 at 5.0-10.0 mils

Apply 1 coat of Finish; Tnemec Series 22 at 16.0-40.0 mils

Coating System B; applied to filter floor and up wall 6", north wall

Apply surface filler; Tnemec N218 or 215

Apply 1 coat of Primer; Tnemec Series V140 at 5.0-10.0 mils

Apply 1 coat of Finish; Tnemec Series 262 at 80.0 mils

PRICE OPTIONS:

OPTION #1

Gullet/Feed Box; Approx 1530 SF

Bid Price: \$91,800.00

OPTION #2

Gullet/Feed Box & Filter Floor (without coating north wall); Approx 3174 SF

Bid Price: \$157,600.00

OPTION #3

Gullet/Feed Box & Entire North wall: Approx 2628 SF

Bid Price: \$142,300.00

OPTION #4

Gullet/Feed Box, Filter Floor, Entire North wall: Approx 4272 SF

Bid Price: \$208,100.00

General Exclusions:

All steel to be properly prepared and primed by supplier

Concrete patching

Coating of buried or embedded items.

Coating of items not exposed to view

Applewood insurance cert attached. Any coverage up and above standard limits are extra

Temp heating/dehumidification

Temp power, sanitary and trash facilities.

Bond Costs

Submitted By: Jimmy Anderson (303) 507-1242 cell
jimmyanderson@qwestoffice.net (email)

Exhibit C

Amendment No. 6

To The “Construction Management/General Contractor Agreement for Preconstruction Services for The Rehabilitation and Modification of The Filter and Solids Handling Systems at The Ralston Water Treatment Plant,” By and Between the City of Arvada and PCL Construction Inc., For the Purpose of Extending the Guaranteed Date of Substantial Completion and For Underdrains in Filters 7-9, Thereby Increasing the Contract Amount From \$18,515,985.00 To an Amount Not to Exceed \$19,722,518.00



BE Number ARVADA MASTER
Opportunity No
Owner File No
Project New Blank Estimate
Location

Item Analysis Sheet

Detail Page 1 of 1
Jul 12, 2024
8:02:35 AM

Justin McRae

AL-2	Escalation Allowance	1.00	LS
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Proprietary and Confidential

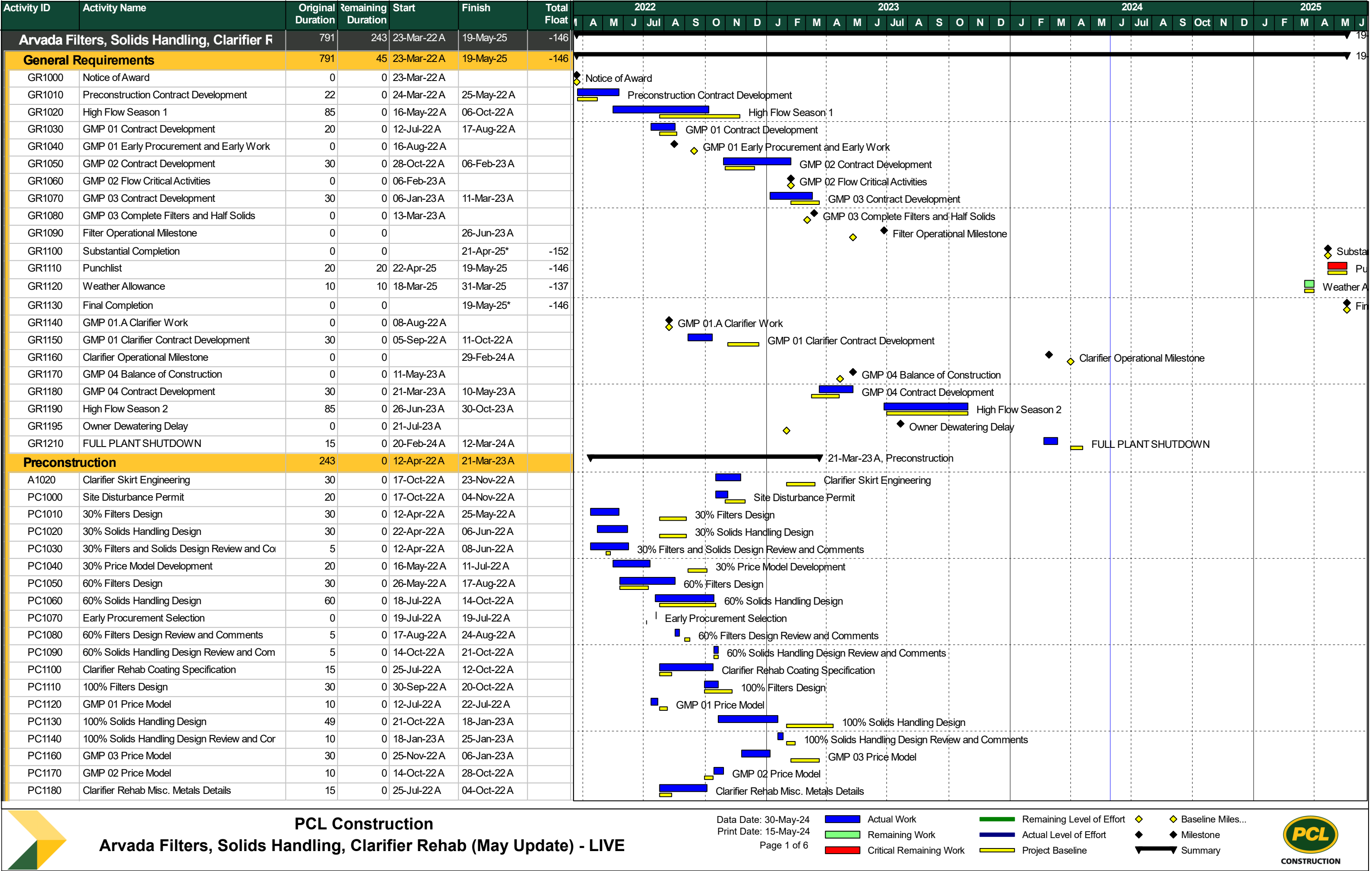
No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Cost	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Escalation for Stainless Steel																	
	Escalation Allowance	3	MO	---	---	---	---	---	---	---	---	---	3,000.00	9,000	---	---	3,000.00	9,000
	Bonds and Insurance	100	%															
	US CONTRACT BOND Class B	10,158	TC	---	---	---	---	---	---	---	0.010000	102	---	---	---	---	0.010000	102
	Builders Risk	10,158	TC	---	---	---	---	---	---	---	0.004000	41	---	---	---	---	0.004000	41
	Gen Liab-USA 8.50/M	10,158	TC	---	---	---	---	---	---	---	0.010000	102	---	---	---	---	0.010000	102
	SDI - Subcontractor						SC						0.01					
	Bonds and Insurance	100.00	%	---	---	---	---	---	---	---	2.44	244	---	---	---	---	2.44	244
	CA Fee	100	%															
	Fee	10,158	TC	---	---	---	---	---	---	---	0.090000	914	---	---	---	---	0.090000	914
	CA Fee	100.00	%	---	---	---	---	---	---	---	9.14	914	---	---	---	---	9.14	914
	Escalation Allowance	1.00	LS	---	---	---	---	---	---	---	244		---	9,914	---	---	---	10,158

AL-2	Escalation Allowance	1.00
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Exhibit D

Amendment No. 6

To The “Construction Management/General Contractor Agreement for Preconstruction Services for The Rehabilitation and Modification of The Filter and Solids Handling Systems at The Ralston Water Treatment Plant,” By and Between the City of Arvada and PCL Construction Inc., For the Purpose of Extending the Guaranteed Date of Substantial Completion and For Underdrains in Filters 7-9, Thereby Increasing the Contract Amount From \$18,515,985.00 To an Amount Not to Exceed \$19,722,518.00



[illegible]

[illegible]



REPORT TO CITY COUNCIL RESOLUTION

AGENDA ITEM
8.A.2.

TO: THE HONORABLE CITY COUNCIL

DATE: August 19, 2024

SUBJECT: R24-083, A Resolution Accepting Material Donations from Faith Church for Use by City Staff in Connection with Homeless Services

Report in Brief

Faith Bible Chapel International (d/b/a “Faith Church”) in Arvada is assembling hygiene kits for the benefit of people experiencing homelessness. These hygiene kits will be divided for hot and cold weather and are valued at approximately \$20/bag. Faith Church anticipates donating approximately 1,000 bags, for a total approximate value of \$20,000. The bags will include items such as socks, hand warmers, feminine hygiene products, and travel sizes of soap, shampoo, toothbrushes and toothpaste, deodorant, and bug repellent.

Faith Church is seeking to donate these kits to the City for distribution by City staff and City contractors during street outreach, during One Small Step court, during the provision of emergency housing, and during severe weather sheltering.

The Arvada team recommends that the City Council approve R24-083, A Resolution Accepting Material Donations from Faith Church for Use by City Staff in Connection with Homeless Services.

Financial Impact

This donation is being made at no-cost to the City.

Background

Faith Church is a faith-based 501(c)(3) non-profit corporation located in Arvada, that is seeking to serve in furtherance of its core value – “Love People.” Faith Church proactively contacted the City’s Homeless Project Manager regarding the collection of items and distribution of hygiene kits to individuals experiencing homelessness in hopes of increasing engagement with City staff. Faith Church will assemble and deliver the hygiene bags to the City, for staff’s discretionary distribution. Staff’s intention is to only distribute items that individuals actually request in order to reduce waste.

The City’s homeless navigation program regularly accepts donations. City Council previously approved a partnership with the Community First Foundation for the acceptance of donations; however, the Community First Foundation specializes in the receipt of monetary donations and does not handle material donations.

Discussion

The hygiene kits will consist of essential health and hygiene products that help meet the needs of individuals experiencing homelessness. The kits, however, also provide a bridge for staff to engage in conversation with individuals experiencing homelessness. The kits and conversations help to build relationships, which, in turn, will help start the journey toward homeless resolution. This donation will enable City staff and City contractors to engage with this population to utilize these goods, while also freeing up funds for other housing-related needs, such as IDs and birth certificates, which are necessary to obtain housing.

Public Contact

Posting of the City Council agenda.

Commission Recommendation

N/A

Strategic Alignment

Accepting this donation is in alignment with City Council’s Strategic Result related to homelessness: “*Collaborate and coordinate with nonprofits, local organizations, and regional governments to advance services to individuals experiencing homelessness or at risk of experiencing homelessness.*” More specifically, Strategic Goal #6: “**Provide outreach and resources to those in need while also enforcing laws and ordinances to create a safe community for all to enjoy.**”

Alternative Courses of Action

N/A

Recommendation for Action

The Arvada team recommends that City Council approve R24-083, A Resolution Accepting Material Donations from Faith Church for Use by City Staff in Connection with Homeless Services.

Suggested Motion:

I move that R24-083, A Resolution Accepting Material Donations from Faith Church for Use by City Staff in Connection with Homeless Services, be (approved) (rejected).

Prepared by:
Gail Walker, Legal Specialist-Contracts

Reviewed by:

Approved by:

Janelle Miller, Assistant City Attorney 7/30/2024
Rachel Morris, City Attorney 8/6/2024
Linda Haley, Deputy City Manager 8/6/2024

Enclosure, exhibits & attachments required to support the report

RESOLUTION NO. R-24-083

A RESOLUTION ACCEPTING MATERIAL DONATIONS FROM FAITH CHURCH FOR
USE BY CITY STAFF IN CONNECTION WITH HOMELESS SERVICES

WHEREAS, Faith Church is assembling hygiene kits for the benefit of people experiencing homelessness; and

WHEREAS, the hygiene kits will consist of items such as socks, hand warmers, toothbrushes, toothpaste, soap, deodorant, etc., and are valued at approximately \$20.00 per bag; and

WHEREAS, Faith Church wishes to donate the hygiene kits to the City for distribution by City staff in connection with homeless services; and

WHEREAS, the hygiene kits will not only meet a need for homeless individuals, but will also provide a bridge for City staff to engage in conversation and build relationships that will serve as a catalyst in the journey toward homelessness resolution.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ARVADA, COLORADO:

Section 1. Pursuant to Sec. 13.6 of the Arvada City Charter, City Council hereby accepts the generous donation of hygiene kits from Faith Church.

Section 2. This resolution shall be effective upon its approval by the City Council.

APPROVED AND ADOPTED this 19th day of August, 2024.

Lauren Simpson, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:
Rachel A. Morris, City Attorney

By: _____



REPORT TO CITY COUNCIL RESOLUTION

AGENDA ITEM
8.A.3.

TO: THE HONORABLE CITY COUNCIL

DATE: August 19, 2024

SUBJECT: R24-084, A Resolution Authorizing an Agreement Between the City of Arvada and DHE Computer Systems, LLC. for Goods and Professional Services Relating to Citywide Workstation Replacement in an Amount Not to Exceed \$1,800,000.00

Report in Brief

The Information Technology Department requests the purchase of new workstations (desktops, laptops, and related equipment) and related professional services to replace the existing workstations for all City departments. This purchase is necessary to replace end-of-life hardware and software.

The Arvada Team recommends City Council approve R24-084, A Resolution Authorizing an Agreement Between the City of Arvada and DHE Computer Systems, LLC. for Goods and Professional Services Relating to Citywide Workstation Replacement in an Amount not to Exceed \$1,800,000.00.

Financial Impact

The purchase of the replacement workstations will not exceed \$1,800,000.00. Funding for the replacement workstations has been budgeted in the technology replacement fund (52).

Background

The City of Arvada currently uses HP workstations that were last refreshed in 2018/2019. As such, many of the City's current workstations are at or near the end of their warranty period. As the City typically refreshes Citywide workstations every five years, the City is now due for all City workstations to be replaced. Replacing workstations with new computers will ensure that City workstations are current, functioning, and covered under warranty.

On February 5, 2024, the City of Arvada published Request for Proposals 24-IT-001 seeking responses from qualified vendors to provide the Citywide workstation refresh. Through this solicitation, City staff selected DHE Computer Systems, LLC. to provide the City's new workstations and related services.

Discussion

The Agreement Between the City of Arvada and DHE Systems, LLC. for Goods and Professional Services Relating to Citywide Workstation Replacement in an Amount Not to Exceed \$1,800,000.00 (the "Agreement") will enable the City to purchase replacement workstations. These workstations may be desktops or laptops and will feature more memory and faster processing. The new workstations will also accommodate a more current version of Windows, as the version the City currently has is nearing its end-of-support period. In addition to providing the replacement workstations, DHE Systems will also assist City staff in implementing the new workstations and providing warranty and support services for the new workstations. If City staff chooses, DHE Systems will also assist City staff in securely wiping data from, and disposing of, the old workstations. By conducting this Citywide workstation refresh, the City ensures that City technology keeps up with industry standards for the next five years.

Public Contact

Posting of the City Council Agenda

Commission Recommendation

n/a

Strategic Alignment

Provide operational technology and implement new innovative projects to guide decisions, improve results, enhance service delivery, and continue the highest level of cybersecurity strategy in support of City operations and efficiency.

Alternative Courses of Action

n/a

Recommendation for Action

Staff recommends that the City Council approve R24-084, A Resolution Authorizing an Agreement Between the City of Arvada and DHE Computer Systems, LLC. for Goods and Professional Services Relating to Citywide Workstation Replacement in an Amount Not to Exceed \$1,800,000.00 on August 19, 2024.

Suggested Motion:

I move that R24-084, A Resolution Authorizing an Agreement Between the City of Arvada and DHE Computer Systems, LLC. for Goods and Professional Services Relating to Citywide Workstation Replacement in an Amount Not to Exceed \$1,800,000.00, be (approved) (rejected).

Prepared by:
Laura Hemler, Assistant City Attorney

Reviewed by:

Approved by:

Craig Poley, Chief Information Officer	7/25/2024
Bryan Archer, Director of Finance	7/25/2024
Rachel Morris, City Attorney	8/6/2024
Linda Haley, Deputy City Manager	8/7/2024

Enclosure, exhibits & attachments required to support the report

RESOLUTION NO. R24-084

A RESOLUTION AUTHORIZING AN AGREEMENT BETWEEN THE CITY OF ARVADA AND DHE COMPUTER SYSTEMS, LLC. FOR GOODS AND PROFESSIONAL SERVICES RELATING TO CITYWIDE WORKSTATION REPLACEMENT IN AN AMOUNT NOT TO EXCEED \$1,800,000.00

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ARVADA, COLORADO:

Section 1. The Mayor or Mayor Pro Tem is authorized to sign and the City Clerk to attest, in form approved by the City Attorney, an Agreement, which is in substantially the same form as that attached hereto, by and between the City of Arvada and DHE Computer Systems, LLC. for goods and professional services relating to citywide workstation replacement, in an amount not to exceed \$1,800,000.00.

Section 2. This resolution shall be effective upon its approval by the City Council.

APPROVED AND ADOPTED this 19th day of August, 2024.

Lauren Simpson, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:
Rachel A. Morris, City Attorney

By: _____

**AN AGREEMENT BETWEEN THE CITY OF ARVADA AND
DHE COMPUTER SYSTEMS, LLC. FOR GOODS AND
PROFESSIONAL SERVICES RELATING TO CITYWIDE
WORKSTATION REPLACEMENT IN AN AMOUNT NOT TO
EXCEED \$1,800,000.00**

1. **PARTIES.** The Parties to this Agreement are the City of Arvada, a Colorado home rule municipal corporation, whose mailing address is 8101 Ralston Road, Arvada, CO 80002 (“Arvada” or the “City”) and DHE Computer Systems, LLC., a Colorado Limited Liability Company whose principal place of business is located at 7076 S. Alton Way, Ste. C, Centennial, CO 80112 (“Contractor”). The Parties may be referred to individually as a “Party” and collectively as the “Parties.”
2. **RECITALS AND PURPOSE.**
 - 2.1. Arvada requires a qualified entity to provide replacement laptops with docking stations, desktops, and computer towers (collectively “workstations”) and facilitate warranty services for the replacement workstations. Arvada may also elect to have Contractor perform services related to disposing of the old workstations and implementing the new workstations.
 - 2.2. On or about February 5, 2024, Arvada issued Request for Proposal (RFP) 24-IT-001 entitled “2024-25 Workstation Replacement”, seeking responses from qualified entities to provide goods and services as described in Sec. 2.1 (“the Work”). On or about February 22, 2024, Arvada issued Addendum No. 1 to RFP 24-IT-001.
 - 2.3. Contractor has extensive experience in providing replacement workstations and related services on a large scale. On or about March 5, 2024, Contractor submitted its proposal for Workstation Replacement Request for Proposal #24-IT-001 in response to Arvada’s RFP 24-IT-001 (“Response”).
 - 2.4. Arvada has determined that Contractor has the requisite background, skill, expertise, and insurance to provide the requested goods and services and other related services, under the terms and conditions more fully set forth below.
 - 2.5. Arvada and Contractor agree that Arvada contemplates using Contractor as a Contractor for the Work as described in the Contract Documents. However, Arvada and Contractor acknowledge and agree that Arvada may, at its sole discretion, use other Contractors to perform similar work, and that this Agreement in no way limits Arvada from hiring other contractors or constitutes a contract for exclusive services from Contractor.
3. **CONTRACT DOCUMENTS AND EXHIBITS.**
 - 3.1. Contract Documents. The Contract Documents shall consist of this Agreement together with the following:

- Exhibit A:** Arvada's RFP 24-IT-001 including General Terms and Conditions and Insurance Requirements;
- Exhibit B:** Arvada's Addendum No. 1 to RFP 24-IT;
- Exhibit C:** Contractor's Response, including Price Sheet;
- Exhibit D:** Contractor's Updated Cost Sheet for Services, Hardware, and Professional Services Selected by Arvada; and
- Exhibit E:** Federal Bureau of Investigation Criminal Justice Information Services Security Addendum.

All exhibits referred to in this Agreement are attached hereto and are, by reference, incorporated herein for all purposes.

- 3.2. Interpretation of Contract Documents. In the event any matter, term, provision, or condition that is the subject of this Agreement requires clarification or is in dispute, or is the subject of a difference of opinion, then the terms of this Agreement shall control, and then the terms of **Exhibits A, Exhibit B, and Exhibit E** as applicable, and then **Exhibits C and D** as applicable, in that order.
- 3.2.1. In no event may any contradictory term or provision contained in **Exhibit C, or D** supersede the provisions of this Agreement or **Exhibits A, B, or E**. Any such contradictory term or provision shall be null and void.

4. **TERM AND TERMINATION.**

- 4.1. Effective date. This Agreement will become effective and binding on both Parties upon its execution by Arvada.
- 4.2. Term. The term of the Agreement shall remain in effect for one year from Arvada's execution of the Agreement as described in Sec. 4.1. unless otherwise agreed to in writing by the Parties, and subject to availability of funds.
- 4.2.2. Termination. Notwithstanding the above, Arvada may terminate this Agreement with or without cause upon 30 calendar days written notice and in accordance with the provisions of this Agreement and **Exhibit A**.
- 4.3. Force majeure. Any delays in or failure of performance by any party of its obligations under this Agreement shall be excused if such delays or failure are a result of acts of God, fires, floods, strikes, labor disputes, pandemics, accidents, regulations or orders of civil or military authorities, shortages of labor or materials, or other causes, similar or dissimilar, which are beyond the control of such party.

- 4.4. Renewal. This Agreement may be renewed by Arvada for no more than four one-year renewal terms. Renewals will be automatic unless the Agreement is terminated.
- 4.5. Warranty term. Notwithstanding the above provisions, any warranty period which exceeds the term of this Agreement and any renewals shall remain in full force for the duration of the warranty period.

5. **COMPENSATION.**

- 5.1. Payment. Arvada shall pay Contractor for the Work requested by Arvada and rendered by Contractor under this Agreement in an amount not to exceed \$1,800,000.00.
- 5.1.1. Contractor shall submit itemized monthly invoices to Arvada for actual goods and services that have been requested and accepted by Arvada and performed or provided by Contractor at the rates reflected in **Exhibit D**. Payment by Arvada will be due NET 30 days.
- 5.2. Additional Work. While Arvada has listed its major requirements for its solicitation in **Exhibit A**, Arvada may, during the term of this Agreement, wish to purchase other related services identified and offered by Contractor, based upon the pricing/fee contained in Contract Documents. Arvada reserves the right to award these ancillary items to Contractor or another top-rated Bidder based upon the negotiated scope of work and fee structure. This option, if exercised, in no way obligates Arvada to pursue additional services with Contractor.
- 5.3. No reimbursement of expenses. In no event shall Arvada reimburse Contractor for out-of-pocket, travel, meal, or other expenses that are not expressly agreed upon in this Section 5.

6. **SCOPE OF SERVICES.** Contractor shall perform the Work as described in the Contract Documents or as amended by the mutual consent of the Parties in writing. Contractor will timely participate in all project planning, deployment efforts and scheduling, on-going maintenance or warranty work, and wiping and disposal efforts. Should the Parties agree in writing to a change in the scope of services or a change in a deadline provided in the Contract Documents, then the Parties will timely execute an amendment, which will address the amended scope of services, revisions to necessary start and end dates, any applicable deliverables and associated due dates, reporting requirements, documentation requirements, and any other matters that the Parties deem necessary.

- 6.1. New workstations. In terms of providing workstations, Contractor shall perform the Scope of Work reflected on page 9 of **Exhibit A**. Consistent with the Scope of Work stated in **Exhibit A**, Contractor shall provide the products, configurations, specifications, support, and warranties as stated in **Exhibit C** at the price per device

stated in **Exhibit D** as requested by Arvada. Contractor shall provide all such hardware in accordance with a planning and deployment schedule established by Arvada.

6.2. Deployment services.

6.2.1. Contractor and Arvada will establish the deployment schedule for the Work as well as the exact process for imaging and deployment the new workstations. Contractor shall complete all services stated in this Section in accordance with that schedule.

6.2.2. Contractor shall install Arvada-provided images and software on each workstation purchased by Arvada. Contractor shall have the capacity to image all workstations purchased by Arvada through Contractor when needed by Arvada.

6.2.3. Contractor shall apply asset tags to all new workstations and provide data related to the newly tagged workstations for tracking and inventory purposes in an asset tracking application as needed by Arvada.

6.2.4. Contractor shall conduct all unpacking of new workstations and complete all BIOS/firmware updates.

6.3. Data wiping and disposal of old workstations.

6.3.1. Arvada, in its sole discretion, may elect to have Contractor wipe data from old workstations and dispose of the old workstations. Should Arvada elect to do so, Contractor will perform that portion of the Work in accordance with this Section.

6.3.2. Contractor and Arvada will establish a schedule for the wiping and disposal of old workstations. Contractor shall adhere to the established schedule.

6.3.3. Contractor shall completely wipe data from any old workstations provided to Contractor by Arvada for such purposes in accordance with Department of Defense (DOD) Standards (DoD 5220.22-M). Contractor shall provide a certification of destruction in accordance with the DOD Standards for each workstation hard drive disposed of.

6.3.4. Contractor shall responsibly remove and dispose of old workstations in an environmentally friendly and compliant manner. Contractor shall ensure that all such disposal adheres to local regulations and environmental standards.

6.4. Warranty. Contractor shall ensure that all new workstations are warrantied in accordance with the Contract Documents.

6.5. General obligations.

6.5.1. Arvada, through its Information Technology Department, will be responsible for coordinating deployment efforts with Arvada end-users. Contractor will cooperate and assist with Arvada's deployment efforts as directed by Arvada.

6.5.2. Arvada will provide Contractor with its desired images and software and provide a staging space.

6.5.3. Contractor will conduct status meetings with Arvada at regular intervals to be determined during or shortly after project kick-off.

6.5.4. Contractor will conduct daily check-ins with Arvada's project manager when Contractor is performing work at an Arvada facility or performing work requiring access to Arvada's systems or network.

6.5.5. Contractor will furnish all materials, supplies, tools, equipment, labor, transportation, testing, and other services necessary for the completion of the Work.

6.5.6. Contractor must perform all services or provide all workstations included in the Work at Arvada facilities and under supervision of Arvada personnel if Arvada determines such supervision to be necessary. Any Contractor employee, representative, or personnel performing work at an Arvada facility will follow all security policies and practices and may be subject to background checks as determined by Arvada.

6.5.7. Contractor shall provide any documentation showing the technical specifications of any provided workstations.

6.5.8. Contractor will provide technical support at Arvada facilities during deployment as-needed by Arvada.

7. INFORMATION TECHNOLOGY PROVISIONS.

7.1. Definitions. When used in this Agreement, the following terms shall have the meanings assigned below.

7.1.1. **Arvada Confidential Information** means any and all Arvada Records not subject to disclosure under CORA. Arvada Confidential Information shall include, but is not limited to, PII, PHI, PCI, Tax Information, CJI, and Arvada personnel records not subject to disclosure under CORA. Arvada Confidential Information shall not include information or data concerning individuals that is not deemed confidential but nevertheless belongs to Arvada, which has been communicated, furnished, or disclosed by Arvada to Contractor which (i) is subject to disclosure pursuant to CORA; (ii) is already known to Contractor without restrictions at the time of its disclosure to Contractor; (iii) is or subsequently becomes publicly available without breach of any obligation owed by Contractor to Arvada; (iv) is

disclosed to Contractor, without confidentiality obligations, by a third party who has the right to disclose such information; or (v) was independently developed without reliance on any Arvada Confidential Information.

7.1.2. **Arvada Records** means any and all Arvada data, information, and records, regardless of physical form. This includes credentials issued to Arvada by Contractor, all records relating to Arvada's use of Contractor's services; as well as account credentials, including those issued by Arvada or Contractor, account information, and all records sent, received, or created by or for end users.

7.1.3. **Criminal Justice Information (CJI)** means criminal justice information collected by criminal justice agencies needed for the performance of their authorized functions, including, without limitation, all information defined as criminal justice information by the U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Security Policy, as amended and all Criminal Justice Records as defined under §24-72-302, C.R.S.

7.1.4. **PCI** means payment card information, including any data related to credit card holders' names, credit card numbers, or other credit card information as may be protected by state or federal law.

7.1.5. **PHI** means any protected health information, including, without limitation any information whether oral or recorded in any form or medium: (i) that relates to the past, present, or future physical or mental condition of an individual; the provision of health care to an individual; or the past, present, or future payment for the provision of health care to an individual; and (ii) that identifies the individual or with respect to which there is a reasonable basis to believe the information can be used to identify the individual. PHI includes, but is not limited to, any information defined as Individually Identifiable Health Information by the federal Health Insurance Portability and Accountability Act.

7.1.6. **PII** means personally identifiable information including, without limitation, any information maintained by Arvada about an individual that can be used to distinguish or trace an individual's identity, such as name, social security number, date and place of birth, mother's maiden name, or biometric records. PII includes, but is not limited to, all information defined as personally identifiable information in §§24-72-501 and 24-73-101, C.R.S.

7.1.7. **Tax Information** means federal and state tax information including, without limitation, federal and state tax returns, return information, and such other tax-related information as may be protected by federal and state law and regulation. Tax Information includes, but is not limited to all information defined as federal tax information in Internal Revenue Service Publication 1075.

7.2. Data protection and handling. Contractor shall ensure that all Arvada Records accessed or in possession of Contractor or any subcontractors are protected and handled in accordance with the Agreement at all times. Contractor shall, and shall

cause its subcontractors, to do all of the following:

7.2.1. Provide physical and logical protection for all hardware, software, applications, and data that meets or exceeds industry standards and the requirements of the Agreement;

7.2.2. Maintain network, system, physical, and application security, which includes, but is not limited to, network firewalls, intrusion detection (host and network), annual security testing, and improvements or enhancements consistent with evolving industry standards;

7.2.3. Follow all applicable Arvada policies and procedures related to accessing Arvada Records, Arvada systems, Arvada networks, or Arvada premises. Contractor will also use appropriate safeguards to protect Arvada Records and systems.

7.2.4. Not maintain or forward Arvada Records except to perform the obligations set forth in this Agreement. Contractor or any subcontractor shall not maintain any Arvada Records beyond the term of this Agreement or any extension.

7.2.5. Not maintain Arvada Records in any data center or other storage location outside the United States for any purpose without Arvada's prior express written consent. Contractor shall also not allow remote access to Arvada Records from outside the United States, including access by Contractor's employees, representatives, or personnel, without the prior express written consent of Arvada.

7.3. Background checks. Contractor shall perform current background checks in a form reasonably acceptable to Arvada on all of its respective employees and agents performing services or having access to Arvada Records provided under the Agreement, including any subcontractors or the employees of subcontractors. A background check performed within 30 days prior to the date such employee or agent begins performance or obtains access to Arvada Records shall be deemed to be current.

7.3.1. Contractor will provide notice to Arvada's Project Owner(s) indicating that background checks have been performed. Such notice will inform Arvada of any action taken in response to such background checks, including any decisions not to take action in response to negative information revealed by a background check.

7.3.2. If Contractor will have access to Federal Tax Information under the Agreement, Contractor shall comply with the background check requirements defined in IRS Publication 1075.

7.4. Compliance. Contractor shall allow Arvada reasonable access and shall provide Arvada with information reasonably required to assess Contractor's compliance. In addition to the main body of the Agreement, Contractor and any subcontractors shall comply with:

7.4.1. All Arvada IT security policies and procedures; and

7.4.2. All information security and privacy obligations imposed by any federal, state, or local statute or regulation, or by any industry standards or guidelines, as applicable based on the classification of the data relevant to Contractor's performance under the Agreement. Such obligations may arise from:

7.4.2.1. Health Information Portability and Accountability Act (HIPAA);

7.4.2.2. IRS Publication 1075;

7.4.2.3. Payment Card Industry Data Security Standard (PCI-DSS); and

7.4.2.4. **Exhibit E.**

- 8. TERMS AND CONDITIONS IN CONTRACT DOCUMENTS.** Contractor affirms that it has read and is familiar with all of the Contract Documents including the General Terms and Conditions set forth in the City's solicitation or otherwise attached to this Agreement and agrees to be bound by those Terms and Conditions.

8.1. CJIS Security Addendum. Contractor, including any employee, representative, or personnel with access to CJI data or systems, agrees to executed and abide by the terms set forth in **Exhibit E** in the event Contractor receives access to, transmits, stores, or otherwise handles data covered by **Exhibit E**. Only Contractor's employees, representatives, or personnel with CJIS L3 Certification are permitted to access any workstation containing CJI.

- 9. PERFORMANCE MEASURES.** Contractor's performance shall be documented as to (a) completing the agreed upon Scope of Work, (b) completing within the contracted price, (c) completing the Work within the contracted timeline, (d) completing the Work with materials that meet industry standards, and (e) completing any installation, imaging, data wiping, and workstation disposal required by the Work with high quality standards.

- 10. PROJECT OWNERS.** Arvada designates Joe Holtz (jholtz@arvada.org) and Noel Johannes (njohannes@arvada.org) as Arvada's Project Owners. Arvada's Project Owners will be Arvada's responsible staff members providing direction to Contractor during the course of the Work. Arvada reserves the right to change the Project Owner(s) at its discretion and will promptly notify Contractor of any such change in writing. Contractor designates Dan Hammack (dan.hammack@dhcs.com) as Contractor's primary contact person during the course of this Agreement. Contractor may change the Project Owner(s) with the Arvada's prior written approval.

- 10. INSURANCE.** Contractor will be required to, at its own expense, keep in full force and effect during the term of the Agreement, and during the term of any extension or amendment of the Agreement, insurance reasonably sufficient to insure against the liability assumed by Contractor under the terms of the Contract Documents. Contractor's failure to secure and maintain sufficient insurance at any time during the pendency of this Agreement do not relieve Contractor of its obligations under this provision; Contractor's failure to fulfill the obligations of this section will make the Contractor the *per se* insurer.

11. **INTEGRATION, AMENDMENT, AND SEVERABILITY.** This Agreement represents the entire agreement between the Parties; there are no oral or collateral agreements or understandings. The Parties, by mutual agreement, may amend this Agreement at any time. Any amendments must be in writing and will be incorporated into and made a part of this Agreement. If any provision in this Agreement is held to be invalid or unenforceable, the remainder of this Agreement will be deemed severable, and as such, the remaining provisions will continue in full force and effect.
12. **NOTICES.** Any notice or notification required or permitted by the Agreement shall be in writing, and may be sent to the other Party by certified or registered mail, or by electronic mail, addressed to the that Party's project owner at such street address or email address as are set forth herein or subsequently designated by the Parties. Such notice or notification shall be deemed to have been given when deposited in the United States mail or, in the case of electronic mail, upon the sent date stamp contained in the electronic mail.
13. **ADDITIONAL DOCUMENTS OR ACTION.** The parties agree to execute any additional documents and to take any additional action that is necessary to carry out this Agreement.
14. **BINDING AUTHORITY.** Contractor represents and affirms that the signature page hereof accurately states the full legal name of Contractor (whether as a corporation, partnership, limited liability company, sole proprietorship, or other), contains all requisite signature(s) on behalf of Contractor, and in all other respects is effective to bind Contractor, in accordance with all applicable statutes, regulations, resolutions, rules, bylaws, agreements, or similar sources of authority or limitation. This Agreement may be executed in counterpart(s), each of which shall be deemed to be an original, and all of which, taken together, shall constitute one instrument.

The rest of this page is intentionally left blank.

DATED this _____ day of _____, 2024.

CITY OF ARVADA, a Colorado home
rule municipal corporation

Lauren Simpson
Mayor
8101 Ralston Road
Arvada, CO 80002
lsimpson@arvada.org

ATTEST:

City Clerk

APPROVED AS TO FORM:

Rachel A. Morris, City Attorney

By: _____

DHE COMPUTER SYSTEMS, LLC.

Dan Hammack
Chief Technology Officer
7076 S. Alton Way
Ste. C
Centennial, CO 80112
dan.hammack@dhecs.com

EXHIBIT A
AN AGREEMENT BETWEEN THE CITY OF ARVADA AND
DHE COMPUTER SYSTEMS, LLC. FOR GOODS AND
PROFESSIONAL SERVICES RELATING TO CITYWIDE
WORKSTATION REPLACEMENT IN AN AMOUNT NOT TO
EXCEED \$1,800,000.00



REQUEST FOR PROPOSAL

Proposal #: 24-IT-001

Title: 2024-25 Workstation Replacement

RFP Issued: February 5, 2024

Question Deadline: February 15, 2024 at 2:00 PM MT
Questions must be submitted through BidnetDirect.com.
Responses will be posted on Bidnet via addendum.

Proposals Due By: March 6, 2024 at 2:00 PM MT

Responses must be submitted online at BidNetDirect.com. This is the only valid source for postings regarding this solicitation.

Late responses will not be considered for award.

For additional administrative information not related to the project, contact: Dawn Krank, dkrank@arvada.org
Contact with the requesting department may result in vendor disqualification.

Arvada Vision: We dream big and deliver.

Mission: We are dedicated to delivering superior services to enhance the lives of everyone in our community.

Values:

Innovation – We excel in creativity, flexibility and the use of best practices while valuing diverse backgrounds, ideas and perspectives.

Passion – We are a high performing, inclusive team inspiring each other to pursue excellence.

Opportunity – We value our diversity, embrace possibilities, face challenges, persevere and take action to deliver quality results.

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Attachment A - 2024-25 WORKSTATION REPLACEMENT REQUIREMENTS

GENERAL TERMS AND CONDITIONS

1. **NO MULTI-YEAR FISCAL OBLIGATION.** Financial obligations of Arvada payable after the current fiscal year are contingent on funds for that purpose being appropriated, budgeted, and otherwise made available by the City Council for Arvada. Arvada's obligations under the Agreement shall be from year to year only and shall not constitute a multiple-fiscal year direct or indirect debt or other financial obligation of Arvada within the meaning of Article X, Section 20 of the Colorado Constitution (TABOR).
2. **TAXES.** Arvada shall not be liable for the payment of any excise, sales, or use taxes. Arvada is exempt from federal excise taxes under I.R.C. Chapter 32 (26 U.S.C., Subtitle D, Ch. 32) and from State and local government sales and use taxes under §§39-26-704(1), *et seq.*, C.R.S. (Colorado Sales Tax Exemption Identification Number 98-01789). Contractor shall not invoice Arvada for any state, federal or local taxes. Upon written notification by Arvada, Contractor shall reimburse Arvada in a timely manner for any taxes erroneously paid by Arvada.
3. **NO INDEMNIFICATION BY ARVADA.** Arvada is prohibited under Article XI, Section 1 of the Colorado Constitution from indemnifying anyone. Despite any provision in any contract document to the contrary, Arvada does not indemnify Contractor or anyone else under the Agreement.
4. **INDEMNIFICATION OF ARVADA.** Contractor shall indemnify, defend, and hold harmless Arvada, its employees, agents and assignees (the "Indemnified Parties"), against any and all costs, expenses, claims, damages, liabilities, court awards, and other amounts (including attorneys' fees and related costs) arising from or related to any act or omission by Contractor, or its employees, agents, Subcontractors, or assignees in connection with the Agreement.
 - 4.1. **Confidential Information Indemnification.** Disclosure or use of Arvada Confidential Information by Contractor may be cause for legal action by third parties against Contractor, Arvada, or their respective agents. Contractor shall indemnify, defend, and hold harmless the Indemnified Parties, against any and all claims, damages, liabilities, losses, costs, expenses (including attorneys' fees and costs) incurred by Arvada in relation to any act or omission by Contractor, or its employees, agents, assigns, or subcontractors.
 - 4.2. **Intellectual Property Indemnification.** Contractor shall indemnify, save, and hold harmless the Indemnified Parties, against any and all costs, expenses, claims, damages, liabilities, and other amounts (including attorneys' fees and costs) incurred by the Indemnified Parties in relation to any claim that any Deliverable, Good or Service, software, or Work provided by Contractor under the Agreement (collectively, "IP Deliverables"), or the use thereof, infringes a patent, copyright, trademark, trade secret, or any other intellectual property right. Contractor's obligations shall not extend to the combination of any IP Deliverables provided by Contractor with any other product, system, or method, unless the other product, system, or method is (a) provided by Contractor or Contractor's subsidiaries or affiliates; (b) specified by Contractor to work with the IP Deliverables; (c) reasonably required in order to use the IP Deliverables in its intended manner and the infringement could not have been avoided by substituting another reasonably available product, system, or method capable of performing the same function; or (d) is reasonably expected to be used in combination with the IP Deliverables.
5. **GOVERNMENTAL IMMUNITY.** Liability for claims for injuries to persons or property arising from the negligence of Arvada, its departments, boards, commissions, committees, bureaus, offices, employees and officials shall be governed by the provisions of the Colorado Governmental Immunity Act, §§24-10-101, *et seq.*, C.R.S. (CGIA). No term or condition of the Agreement shall be construed or interpreted as a waiver, express or implied, of any of the immunities, rights, benefits, protections, or other provisions contained in the CGIA.
6. **OPEN RECORD REQUESTS.** Arvada is obligated to comply with the Colorado Open Records Act (C.R.S. §§24-72-200.1 *et seq.*)(CORA), which may require Arvada to disclose all or a portion of communications relating to the Agreement, any transaction under the Agreement, and other related matters. Contractor has been advised to familiarize itself with CORA. Any confidentiality provisions in any contract documents are subject to the provisions of CORA.
7. **PROTECTION OF PERSONAL IDENTIFYING INFORMATION.** In the event the Agreement includes or requires Arvada to disclose to Contractor any Personal Identifying Information as defined in C.R.S. § 24-73-101, Contractor shall comply with the applicable requirements of C.R.S. §§ 24-73-101, *et seq.*, relating to third-party service providers.
8. **NO THIRD PARTY BENEFICIARIES.** The Agreement does not and is not intended to confer any rights or remedies upon any person or entity other than Arvada and Contractor. Enforcement of the Agreement and all related rights and obligations are reserved solely to Arvada and Contractor. Any services or benefits which third parties receive as a result of the Agreement are incidental and do not create any rights for such third parties.
9. **ASSIGNMENT.** Contractor's rights and obligations under the Agreement are personal and may not be transferred or assigned without the prior, written consent of Arvada. Any attempt at assignment or transfer without such consent shall be void. Any assignment or transfer of Contractor's rights and obligations approved by Arvada shall be subject to the provisions of the Agreement. Any provision of an assignment that enlarges any duty, responsibility, or obligation of Arvada, or that limits, curtails, or diminishes any right or privilege of Arvada, without Arvada's express written consent, shall be void.
10. **BINDING EFFECT.** This Agreement shall inure to the benefit of, and be binding upon, the parties, their respective legal representatives, successors, heirs, and assigns.

11. **SURVIVAL.** Any provision of the Agreement that imposes an obligation on a party after the Agreement's termination or expiration shall survive the termination or expiration and shall be enforceable by the other party.
12. **SUBCONTRACTS.** Contractor shall not subcontract any of its responsibilities without Arvada's prior written approval, which will not be unreasonably withheld. Contractor shall submit to Arvada a copy of each such subcontract upon Arvada's request. All subcontracts Contractor enters into in connection with the Agreement shall comply with all applicable federal, state, and local laws and regulations, shall provide that they are governed by the laws of the State of Colorado, and shall be subject to all provisions of the Agreement. Contractor agrees it is fully responsible for subcontractors performing services under the Agreement. Contractor shall be Arvada's sole point of contact regarding the services, including with respect to payment.
13. **INDEPENDENT CONTRACTOR.** Contractor shall perform its duties under the Agreement as an independent contractor and not as an employee. Neither Contractor nor any agent or employee of Contractor shall be deemed to be an agent or employee of Arvada. Contractor shall not have authorization, express or implied, to bind Arvada to any agreement, liability, or understanding, except as expressly set forth herein. **Contractor and its employees and agents are not entitled to unemployment insurance or workers compensation benefits through Arvada and Arvada shall not pay for or otherwise provide such coverage for Contractor or any of its agents or employees. Contractor shall pay when due all applicable employment taxes and income taxes and local head taxes incurred pursuant to the Agreement. Contractor shall: (i) provide and keep in force workers' compensation and unemployment compensation insurance in the amounts required by law; (ii) provide proof thereof when requested by Arvada; and (iii) be solely responsible for its acts and those of its employees and agents.**
14. **LICENSES, PERMITS, AND OTHER AUTHORIZATIONS.** Contractor shall secure, prior to the effective date, and maintain at all times during the term of the Agreement, at its sole expense, all licenses, certifications, permits, and other authorizations required to perform its obligations under the Agreement, and shall ensure that all employees, agents and subcontractors secure and maintain at all times during the term of their employment, agency or subcontract, all license, certifications, permits and other authorizations required to perform their obligations in relation to the Agreement.
15. **STANDARD AND MANNER OF PERFORMANCE.** Contractor shall perform its obligations under the Agreement in accordance with the highest standards of care, skill, and diligence in Contractor's industry, trade, or profession.
16. **TIME OF THE ESSENCE.** Contractor acknowledges and agrees that time is of the essence for this Agreement and that it is an essential term of this Agreement that Contractor maintain a rate of progress in the Services that will result in completion of the Services in accordance with this Agreement. To that end, Contractor agrees to proceed with all due diligence to complete the Services in a timely manner in accordance with this Agreement, and further agrees that failure to complete any of the Services during the Term of this Agreement, or as may be more specifically set forth in an attachment, exhibit, or modification, shall be deemed a breach.
17. **WAIVER OF BREACH.** A waiver by any party to the Agreement of a breach of any Agreement term shall not operate or be construed as a waiver of any subsequent breach by either party.
18. **RIGHT TO TERMINATE.** Arvada shall have the right to terminate, without cause, the Agreement. Any such termination shall not be considered a breach of the Agreement or any extension. In the event Arvada terminates for convenience, Arvada will pay Contractor for requested work performed up until the time of termination, not to exceed the total amount of the contract price agreed upon by Arvada and Contractor.
19. **EXTERNAL TERMS AND CONDITIONS.** Notwithstanding anything to the contrary, Arvada shall not be subject to any provision included in any terms, conditions, or agreements appearing on Contractor's or a subcontractor's website or any provision incorporated into any click-through or online agreements related to the Work unless that provision is specifically referenced in the Agreement.
20. **PROHIBITED TERMS.** Any term included in the Agreement that requires Arvada to indemnify or hold Contractor harmless; requires Arvada to agree to binding arbitration; limits Contractor's liability for damages resulting from death, bodily injury, or damage to tangible property; or that conflicts with this provision in any way shall be void ab initio. Any term included in the Agreement that limits Contractor's liability that is not void under this section shall apply only in excess of any insurance to be maintained under the Agreement, and no insurance policy shall be interpreted as being subject to any limitations of liability of the Agreement.
21. **COMPLIANCE WITH ALL LAWS.** Contractor shall comply with all applicable federal, Colorado and Arvada laws, rules, regulations, policies and procedures in effect or hereafter established, including, without limitation, laws applicable to discrimination and unfair employment practices.

22. **BINDING ARBITRATION PROHIBITED.** Arvada does not agree to binding arbitration by any extra-judicial body or person. Any provision to the contrary shall be null and void.
23. **GOVERNING LAW AND VENUE.** Colorado law, rules, and regulations shall be applied in the interpretation, execution, and enforcement of the Agreement. Any provision included or incorporated herein by reference which conflicts with said laws, rules, and regulations shall be null and void. All suits or actions related to the Agreement shall be filed and proceedings held in the State of Colorado and exclusive venue shall be in Jefferson County.
24. **OWNERSHIP OF WORK PRODUCT.** The originals of all plans, reports, studies, data, or other materials or information relating to the Work that are produced by Contractor shall be delivered to and become the property of Arvada. Contractor may retain copies of any originals; however, no plans, reports, studies, data, or other materials or information relating to the Work shall be released to any person or entity without the prior written consent of Arvada. Nothing in this clause is intended to affect Contractor's right to use generic know-how learned in the course of providing services under the Agreement for the future benefit of Arvada or others.
25. **SOFTWARE PIRACY PROHIBITION.** Arvada or other public funds payable under the Agreement shall not be used for the acquisition, operation, or maintenance of computer software in violation of federal copyright laws or applicable licensing restrictions. Contractor hereby certifies and warrants that, during the term of the Agreement and any extensions, Contractor has and shall maintain in place appropriate systems and controls to prevent such improper use of public funds. If Arvada determines that Contractor is in violation of this provision, Arvada may exercise any remedy available at law or in equity or under the Agreement, including, without limitation, immediate termination of the Agreement and any remedy consistent with federal copyright laws or applicable licensing restrictions.
26. **ACCESSIBILITY COMPLIANCE.**
- 26.1 Arvada is obligated to comply with the Colorado Anti-Discrimination Act (C.R.S. §§24-34-300 et seq.)("CADA"), which requires all digital and online platform and content providers to comply with the minimum Accessibility Standards for Individuals with a Disability, adopted by the Colorado Office of Information Technology ("OIT") under C.R.S §24-85-103(2.5). Contractor has been advised to familiarize itself with CADA.
- 26.2 To the extent the Work or any of Contractor's services provided under the Agreement involves digital, technological components, including but not limited to software, websites, applications, digital documents (the "Material"), all Material shall comply with the OIT's currently adopted minimum Accessibility Standards for Individuals with a Disability at all times.
- 26.3 Contractor shall indemnify, save, and hold harmless Arvada, its employees, agents and assignees (the "Indemnified Parties") against any and all costs, expenses, claims, damages, liabilities, court awards and other amounts (including attorneys' fees and related costs) incurred by any of the Indemnified Parties in relationship to Contractor's failure to comply with Section (26.2) above.
- 26.4 Upon Arvada's request, Contractor shall certify to Arvada that its service(s) and digital documents are compliant with Section (26.2) above. Arvada may require Contractor's compliance to the OIT's currently adopted minimum standards of accessibility to be determined by a third party selected by Arvada to attest to Contractor's compliance.

SPECIAL TERMS AND CONDITIONS

1. PRICES FIXED AND FIRM FOR THE TERM OF THE CONTRACT

Prices proposed by the vendor shall remain fixed and firm during the term of the contract; however, the vendor may offer incentive discounts from the fixed price. This contract shall commence upon the date specified in the Contract or Purchase Order and shall remain in effect until such time as all items/services purchased in conjunction with this solicitation have been delivered and accepted by the City's authorized representative. It shall be understood and agreed that any warranty period which exceeds this term shall remain in full force for the duration of the warranty period.

2. NO OPTION TO RENEW FOR SUBSEQUENT YEARS

The prices or discounts quoted in this Solicitation shall prevail for one year from the effective date of the contract with no option to renew.

3. CONTENTS OF OFFER

Vendors are required to submit offers with the following conditions:

- a. Vendors shall make all investigations necessary to inform themselves of the facilities affected by the delivery of products and services required by the Solicitation.
- b. Any official interpretation of the Solicitation may only be issued by an authorized agent of the City. The City shall not be responsible for other interpretations offered by employees not authorized.
- c. The City shall issue Addenda if substantial changes are required which may impact the content and submission of Offers. A copy of such addenda will be publicly posted with the original RFP posting.

- d. The apparent silence or omissions within this Solicitation regarding a detailed description of the materials or services shall be interpreted to mean that only the best commercial practices are to prevail and that only materials and workmanship of first quality are to be provided.

4. CLARIFICATION AND MODIFICATIONS

The contract resulting from this solicitation will be subject to the Solicitation materials, City Ordinance, State and Federal Statutes. When conflicts occur, the highest authority shall prevail. Vendors are required to indicate any variances to the terms, conditions, requirements and specifications of this Solicitation; no matter how slight. If variations are not stated in the vendor's Offer, it shall be agreed that the vendor's Offer fully complies with all conditions identified in this Solicitation.

5. ELIGIBILITY OF VENDORS: MUST BE ENGAGED IN SUPPLYING PRODUCTS OR SERVICES RENDERED

Offers will only be considered from firms which have been engaged in the business of manufacturing or distributing the goods and/or performing services described in this Solicitation. Vendors must be able to produce evidence that they have an established satisfactory record of performance for at least two (2) years and have sufficient finances and structure to ensure that they can satisfactorily execute the Contract requirements, as determined by authorities of the City. The City reserves the right, before awarding the contract, to require a vendor to submit evidence of its qualifications including, but not limited to, financial, technical and other qualifications, as well as past performance with the City, for consideration in making the award in the best interest of the City.

6. CONFIDENTIAL DOCUMENTS

Vendors may designate specific pages or sections within their submission as trade secret or confidential commercial information or as otherwise protected by law ("Confidential Information"). Documents and data that are considered Confidential Information shall be clearly marked as such and separated from the rest of the solicitation submission documents. Comingling is not acceptable. The City does not favor blanket assertions of Confidential Information. Please note that blanket assertions that merely classify and/or broadly claim information is confidential are insufficient as a matter of law. See, *International Brotherhood of Electrical Workers Local 68 v. Denver Metropolitan Major League Baseball Stadium District*, 880 P.2d 160 (Colo.App. 1994). Any information that will be included in any resulting contract cannot be considered Confidential. Under no circumstances may submission pricing information be considered Confidential. In the event a formal contract is entered into with the City and a portion of the Proposal/Response carries a designation indicating the Vendor believes it is Confidential Information, then the City agrees that it will use its best efforts to forward any request for the disclosure of the Confidential Information to the Vendor. By its submission of the Proposal/Response, Vendor agrees to promptly respond to the request for disclosure with any objections and reasons therefor in accordance with the Colorado Open Records Act C.R.S. §§24-72-101 *et seq.* and any other applicable law. Further, Vendor agrees to assume the obligation to defend, hold harmless, and indemnify the City in any legal proceeding that arises from non-disclosure of documents or data pursuant to the Vendor's objection.

7. COOPERATIVE PURCHASING

The City of Arvada encourages and participates in cooperative purchasing endeavors undertaken by or on behalf of other governmental agencies including the Multiple Assembly of Procurement Officials and the Cooperative Educational Purchasing Council (CPEC).

We hereby request that any member of MAPO/CPEC be permitted to avail itself of this contract and purchase, as specified by the contract resulting from this RFP, at the contract prices established therein. Each governmental entity would establish its own contract, issue its own orders, be invoiced directly, make its own payments and issue its own exemption certificates as required. It is understood and agreed that the City of Arvada is not a legally binding party to any contractual agreement made between another governmental entity and the successful vendor as a result of this solicitation. The City shall not be liable for any costs or damages incurred by any other entity.

8. MODIFICATIONS TO EXISTING CONTRACT

Terms and conditions may be added, modified, and deleted upon mutual agreement between authorized agents of the City and the vendor provided that such terms and conditions remain within the scope and original intent of the Solicitation. Said terms and conditions may include, but are not limited to, additions or deletions of service levels and/or commodities, and increases or decreases in the time limits for an existing contract. Any and all modifications must be signed by authorized agents of the City and the vendor prior to the enactment of such modifications.

9. DELIVERY

Quoted prices and deliveries are to be FOB Destination freight prepaid and shall require inside delivery unless otherwise specified in the Special Conditions of this Solicitation. Title and risk of loss shall pass to the City upon inspection and acceptance by the City at its designated point of delivery; unless otherwise specified in the Special Conditions.

10. CONDITION OF MATERIALS AND PACKAGING

All materials and products supplied by the vendor in conjunction with this solicitation shall be new (unless otherwise specified in the Special Conditions), warranted, free from defects, and consistent with industry standards. The Solicitation price shall include commercial packaging. The materials and products shall be delivered to the City in excellent condition for inspection by City representatives. If the product(s) is damaged or a number of items or components are missing during shipment, the vendor shall either replace the damaged items (if shipped by the vendor) or be responsible for filing, processing and collecting all damage claims (if shipped by a contractor of the shipper). In the event that any of the materials and products supplied to the City by the vendor are found to be defective or do not conform to the specifications, the City reserves the right to return the product to the vendor at no cost to the City; either as an exchange for suitable merchandise or for full credit.

INSURANCE REQUIREMENTS

The following listed insurance requirements shall be carried by the selected vendor for the entirety of the contract. Applicable requirements for this solicitation are identified by completed check boxes.

- 1) ☒ **Commercial General Liability**, written on an occurrence form, for limits not less than \$1,000,000 for bodily injury and property damage for each occurrence and not less than \$2,000,000 aggregate. Coverage shall include premises and operations liability, blanket contractual, broad form property damage, products and completed operations and personal injury endorsements.
- 2) ☒ **Workers' Compensation and Employers Liability** as required by statute. Employers Liability coverage is to be carried for a minimum limit of \$1,000,000 each accident/disease and \$2,000,000 aggregate.
- 3) ☒ **Automobile Liability** for limits not less than \$1,000,000 combined single limit for bodily injury and property damage for each occurrence. Coverage shall include owned, non-owned and hired automobiles.
- 4) ☐ **Umbrella Liability** of \$ _____, following form to the Commercial General Liability.
- 5) ☐ **Builders Risk or Course of Construction** Purchased by contractor to cover physical damage to property in construction or rehab. Contractors will ensure that City and subcontractors will be covered as additional insureds, excluding their own machinery, tools and equipment.
- 6) ☐ **Professional Liability** Professional Liability insurance in an amount of not less than \$1,000,000 per occurrence, covering the professional work contemplated under this proposal. The coverage shall have an extended reporting period of three (3) years following the date of substantial completion of the work for reporting of claims.
- 7) ☐ **Pollution Legal Liability Insurance** for limits not less than \$1,000,000 per occurrence (or claims made) and not less than \$1,000,000 aggregate for bodily Injury, personal Injury and property Damage.
- 8) ☒ **Privacy/Network/Cyber Liability Insurance** for limits not less than \$1,000,000 for any firm providing product or services associated with IT, software, communication, or network.

Additional Insurance Requirements:

- Contractor will be required to, at its own expense, keep in full force and effect during the term of the Agreement, and during the term of any extension or amendment of the Agreement, insurance reasonably sufficient to insure against the liability assumed by Contractor pursuant to the provisions of the solicitation sent by the City of Arvada or as determined by the City of Arvada Risk Manager.
- Issuance of a Purchase Order/Contract is contingent upon the receipt of the insurance documents. Work shall not commence before this requirement is met. If the vendor fails to submit the required insurance documents within fifteen (15) calendar days after notice to submit such policies is given to the vendor by a City representative, the vendor may be in default of the Award.
- Except for Workers Compensation, Employer's Liability insurance, Automobile Liability and Professional Liability insurance, the City of Arvada must be endorsed as an additional insured on a Certificate of Insurance.
- All coverage must be written with carriers holding a minimum A.M. Best rating of A-:VII, and authorized to do business in Colorado. Coverage shall be primary, and any insurance held by the City of Arvada is excess and non-contributory.
- The City, through its Risk Manager, reserves the right to require additional insurance coverage and other requirements.

ADMINISTRATIVE INFORMATION

1. PURPOSE - TO OBTAIN PROPOSALS

The purpose of this Solicitation is to provide qualified vendors with sufficient information regarding the City's needs in order to adequately prepare and submit a Proposal. Proposals must be received by the date and time established in this solicitation. Once the deadline has passed, Proposals will not be able to upload to the BidNet site. Proposals are proprietary working documents offered by prospective vendors and, as such, are not subject to public inspections until an official award is made.

2. PREPARATION AND SUBMISSION

Offers will be prepared as follow:

- a. A blank shall be construed as "No Bid/not offered". Where there is a discrepancy between the unit price and the extension of prices, the unit price shall prevail.
- b. Vendors will not knowingly participate in solicitations where there exists a conflict of interest with their firm and a member of City staff or their immediate family.
- c. Solicitations and addenda are available at WWW.BIDNETDIRECT.COM. Registration is available to receive email notification of new solicitations, addenda and communications.

- d. Vendors who qualify their Offers by requiring alternate contractual terms and conditions as a stipulation for contract award, must include such alternate terms and conditions in its Offer. The City reserves the right to declare the vendor's Offer as non-responsive if any of these alternate terms and conditions are in conflict with the City's terms and conditions, or its best interest.
- e. Once Offers have been opened, the City shall not consider any subsequent submissions of alternate terms and conditions.

3. MODIFICATION OR WITHDRAWAL OF OFFERS

Modifications to Offers- Changes to the Offer after the submission deadline shall be allowed only when the vendor can show convincing evidence that an unintentional factual mistake was made. Modification requests must be made in writing. Any modification submitted to the City must have the vendor's name, address, Solicitation Number and title included.

Withdrawal of Offers- Offers may not be withdrawn after the deadline for the Solicitation for a period of ninety (90) calendar days. If an Offer is withdrawn by the vendor during this ninety (90) day period, the City may, at its option, suspend the vendor and may not accept any Offer from the vendor for a six (6) month period following the withdrawal.

4. REJECTION OF OFFERS

- a. The City may reject an offer, in whole or in part, for reasons including, but not be limited to:
 - i. The vendor misstates or conceals any material fact in its Proposal;
 - ii. The vendor's Offer does not strictly conform to the law or requirements of the Solicitation;
 - iii. The Offer expressly requires or implies a conditional award that conflicts with the method of award stipulated in the Special Conditions;
 - iv. The Offer does not include documents which are required for submission with the Offer; or
 - v. The Offer has not been executed by the vendor through an authorized signature.
- b. The City may, at its sole and absolute discretion:
 - i. Reject all or parts of Offers submitted by prospective vendors;
 - ii. Re-advertise this Solicitation;
 - iii. Postpone or cancel the Solicitation;
 - iv. An Offer may not be accepted from, nor any contract be awarded to, any person or firm which
 - (a) is in arrears to the City for any debt or Contract, or is a defaulter as surety for any obligation to the City.
 - (b) has failed to perform faithfully any previous contract with the City, State or Federal governmental for a minimum period of one (1) year after this previous Contract was terminated for cause.
 - (c) has pending litigation against the City on the date and time that the Solicitation is due.

5. BEST VALUE AGENCY

The City of Arvada is a best value agency. Best value means a technique in a competitive solicitation process which emphasizes value over price and permits the evaluation of criteria such as, but not limited to, qualifications, experience, and performance data to determine the best overall value to the city. It is solely incumbent on the staff of the City of Arvada to conduct due diligence to determine best value prior to award.

6. METHOD OF AWARD - BEST EVALUATIVE SCORE BASED ON WRITTEN PROPOSAL:

The selection process will consist of evaluation of qualified proposals received based on the criteria outlined in this RFP. Presentations may be requested to confirm or clarify the information contained in the proposal responses. It is the intent of the City to award a contract to the vendor(s) who receives the highest score from the City's RFP Evaluation Committee.

The Committee will score written Proposals by reviewing documentation submitted by the vendors. Evaluation will be based on the following criteria:

- A. Quality of response and services provided
 - a. Overall price and availability of the machines
 - b. Technical support package
 - c. Warranty
- B. Firm capabilities & assigned staff experience
 - a. Effective project approach and safety
 - b. Effective implementation or installation plan

Exceptions to specifications or terms and conditions may result in submission being deemed non-responsive.

7. PRESENTATIONS

After the written proposals have been evaluated, the committee may move on to a second phase in which a limited number of vendors with the highest scores will be invited to give an oral presentation. The evaluative score from the oral presentation will then be used to determine the top-rated vendor(s).

8. SAMPLES

At the request of the City, respondents may be required to provide samples for evaluation of the proposed workstations, desktops, and portable computers to the City's Office of Information Technology at no cost. The technical staff of the City will review these samples and will return them within 30 days of receiving them, with freight prepaid.

9. PROPOSAL FORMAT REQUIREMENTS

Written proposals should include the information in the format outlined below and be limited to no more than fifteen (15) pages. Required City forms (including Attachment A - 2024-25 Workstation Replacement Requirements), resumes, and title pages are

excluded from page count. Information should be concise, without extraneous content. Refrain from submitting generic marketing materials, alternate and unapproved agreements, and any other information not requested.

All information should be contained in one pdf file, with sections bookmarked. The file name should start with proposer's name, then the proposal number. Embedded links for required information are NOT acceptable. All information that proposers want evaluated must be contained in the pdf file.

- a. Cover & executive summary
- b. Detail Firm's and assigned staff capabilities, experience, qualifications, and compliance status
- c. Details of proposal – proposed services, implementation timeline and project / project management approach as it applies to the Statement of Work
- d. Previous projects of similar size and scope, with references
- e. Customer Support
- f. Warranty plan details
- g. Completed and signed Required Vendor Submittal
- h. Completed Attachment A: 2024-25 Workstation Replacement Requirements

Proposers must also upload the completed Attachment A - 2024-25 Workstation Replacement Requirements in Excel format to Bidnet. Be sure that the Hardware Regs, Vendor Regs, and Pricing tabs are completed.

STATEMENT OF WORK

The City of Arvada (City) is seeking proposals from qualified Tier 1 microcomputer manufacturers and value-added resellers (VARs) to provide Microsoft Windows based desktop computers and laptops.

BACKGROUND:

Founded in 1870 and incorporated in 1904, Arvada is located in Jefferson and Adams Counties just 10 miles from downtown Denver. Our beautiful community retains a small-town feel even with its estimated population of 120,000. Arvada enjoys a rich history, quiet tree-lined neighborhoods, and a robust mix of business. Our strong civic leadership balances quality of life with an understanding and support of business and economic development.

The City provides various municipal services, including Safe Community (police), Vibrant Community and Neighborhoods (parks, recreation, and housing), Organization Service Effectiveness (city manager office, city attorney office, information technology, human resources, and finance), Infrastructure (utility services, public works), Community and Economic Development, and Municipal Courts.

SCOPE:

Workstations replaced in the 2018-19 replacement cycle have reached the end of warranty and end of life. As this technology ages, there is an increase in failures, many of which are no longer covered under warranty. This increases the cost and time needed to repair these devices and leaves our customers without the tools needed to perform their duties for extended amounts of time.

City staff need reliable and current hardware technology with the ability to utilize both current and future applications. The City of Arvada will be purchasing the Microsoft Windows based desktop computers and laptops in 2024-2025 with a lesser number of additional PCs purchased periodically throughout the contract.

Every City laptop (approx. 470), desktop (approx. 300), and tower (approx. 30) computer will be replaced.

OVERVIEW OF REQUIREMENTS:

All workstations, desktops, and portable computers must strictly adhere to the "Must Have" priorities listed in Attachment A. The City requires:

- a. State-of-the-art equipment. Please do not provide proposals for "excess" inventory and/or obsolete configurations.
- b. Devices that are fully FCC authorized, UL listed, Windows 11 Certified, Energy Star certified, and Section 508 conformant.
- c. Devices designed for the large business market. Consumer or small business class machines are not acceptable.
- d. Prices must include delivery charges and any other costs must be fully divulged. The City is tax-exempt, and purchase prices should not include federal and/or state taxes. A copy of the Purchase Exemption Certificate will be provided at contract execution with the successful respondent.

OTHER CONSIDERATIONS:

The City may elect not to purchase the exact machine specified within the configuration spreadsheet; the specifications are being provided for evaluation and comparison purposes. Please provide pricing for the systems specified in the configuration spreadsheet and the costs associated with each optional upgrade/modification. It is expected that market-driven updates to the equipment configurations and pricing will be made as necessary to remain competitive.

The City of Arvada values your experience and expertise in this arena and considers you a content expert. To that end, our Evaluation Committee would like to understand your recommended configuration and/ or other value engineering ideas to provide the City with the best value as defined by total cost ownership. As such, you are encouraged to communicate within your proposal any ideas, options, clarifications or potential problems you may foresee in our acquisition plan.

As our content expert partner, the successful respondent may provide periodic in-service presentations to the City's technical support staff, not to exceed two (2) per year. The goal and nature of these presentations is effective communication of product technical information, current specifications, product roadmaps, policy and production protocols, and other information that may enhance the interaction and productivity of both the respondent and the technical staff.

REQUIRED VENDOR SUBMITTAL FORM

SUBMITTED BY:

Company Name: _____

Contact Names: Sales/Customer Service _____

Address: _____

Phone: (____) _____ Email(s): _____

The undersigned hereby affirms that:

- They are a duly authorized agent of the vendor;
- They have read all Terms and Conditions and technical specifications made available in conjunction with this solicitation and fully accepts and acknowledges this offer is consistent with the specifications and terms and conditions, unless specific variations have been clearly and expressly listed in the offer.
- The Offer is in all respects fair, without outside collusion or otherwise illegal action.

By: _____
Signature of Authorized Agent Date FEIN

Typed/Printed Name of Agent Title of Agent Agent email

Type of Business: Corporation, State of Incorporation _____ Partnership (general)

Partnership (limited) Sole Proprietorship Limited Liability Company Other _____

Address of main business office, principal factory, or warehouse if different from above:

Principal line of business: _____

Number of years in present business: _____

REFERENCES:

- ☐ Check here if Firm's standard reference sheet is attached, otherwise, use the space below.

Name: _____ Contact Person: _____

Address: _____

Telephone No: _____ Email: _____

Describe type of work/service performed or items supplied: _____

Name: _____ Contact Person: _____

Address: _____

Telephone No: _____ Email: _____

Describe type of work/service performed or items supplied: _____

Name: _____ Contact Person: _____

Address: _____

Telephone No: _____ Email: _____

Describe type of work/service performed or items supplied: _____

PAYMENT TERMS: If the vendor does not accept a percentage discount, the City standard is net thirty (30) days after the date that the City receives an accurate invoice and has accepted the product or service. Payment is the date of the check mailing or date of the credit card transaction.

Discount: ____ % ____ Days, Net: 30 Days, Accept Visa without additional fee? _____

SUBMITTAL CHECKLIST:

Proposals shall be submitted in the order listed below, unless otherwise directed in Administrative Information, with each section clearly identified. **Missing information or required documents may result in submission being deemed non-responsive.**

- ☐ Submit **one** PDF document on-line at BidnetDirect.com (PDF File Name: Company name – Solicitation number) Include the following:
 - ☐ Cover & Executive Summary
 - ☐ Detail Firm's and assigned staff capabilities, experience, qualifications, and compliance status
 - ☐ Details of proposal – proposed services, implementation timeline and project / project management approach
 - ☐ Previous projects of similar size and scope, with references
 - ☐ Customer Support details
 - ☐ Warranty details
 - ☐ This completed and signed Required Vendor Submittal Form
 - ☐ Completed Requirements and Pricing sheets from Attachment A - 2024-25 Workstation Replacement Requirements
- ☐ Proposers must also upload a second file - Attachment A - 2024-25 Workstation Replacement Requirements 1-24 in **Excel** format.

CONFIRM:

- ☐ CONFIDENTIAL information, if any, MUST be stamped as such on each page and submitted separately.
- ☐ VARIATIONS: Checking this box indicates that the vendor has variations to this solicitation. Identify all variations and exceptions to this solicitation on a separate sheet/s of paper. If variations are not stated in the vendor's Offer, it shall be agreed that the vendor's Offer fully complies with all conditions identified in this Solicitation. For each variation listed, reference the applicable section of the solicitation document, the page number, and the variance. Submittal of a Vendor Contract is considered excessive in Variations and may be cause for determining that the Bid/Offer is non-responsive and ineligible for award.
- ☐ Insurance – Checking this box accepts that the insurance requirements listed by the City are acceptable unless listed as a variation.
- ☐ Initial to acknowledge receipt of Addenda, if any: #1 _____ #2 _____ #3 _____

Attachment A - RFP 24-IT-001 2024-25 Workstation Replacement

Vendor Instructions:

Please complete the next two tabs in this Excel workbook, labeled "Hardware Reqs" and "Vendor Reqs." On each line, click in the "Conformance" column and select a response from the drop-down indicating your solution's ability to meet each of the requirements. Under "Vendor Comments," you may provide additional information about how your product meets each requirement. Do not change any values in columns other than "Conformance" and "Vendor Comments."

In the final tab, labeled "Pricing," please complete the second column, "Unit Pricing."

Submit this spreadsheet in Excel format to BidNet to be considered for evaluation.

Contact the Purchasing Representative if you have any trouble working with this document.

Requirement Conformance	Description	Score Value
Yes	The solution meets the requirement as is, "out-of-the-box" functionality with no custom configuration, additional parts, or fees.	4
Qualified Yes	The solution can meet the requirement with some additional configuration by you (vendor) or us (customer) and/or with additional fees – so that it meets the City's specific business needs. Please explain in the Vendor Comments cell.	2
No	The solution cannot meet the requirement.	0
Priority	Description	Score Value
Must have	An essential component of the solution we seek	6
Should have	An important component of the solution we seek	3
Could have	Feature we would find helpful but not necessary	1

Vendors must use the Excel file to complete the following pages. Vendor's completed Excel workbook should be uploaded as a separate file to the proposal.

ID	Priority	Component	Description	Conformance	Vendor Comments	Score
Standard Desktop Requirements						
SDR1	Must have	Processor	Alternative 1: i5 Intel 13th-Gen 10-core Processor @2.5gHz + for P-Cores -20 mb cache-Integrated graphics			
SDR2	Must have	Processor	Alternative 2: i7 Intel 13th-Gen 16-core Processor @2.1gHz + for P-Cores -30 mb cache-Integrated graphics			
SDR3	Must have	Memory	16GB DDR4 with room for expansion			
SDR4	Must have	Hard Drive	512GB or greater Solid State Drive			
SDR5	Must have	Display Port	DPI or HDMI			
SDR6	Should have	Monitors	Capable of supporting 3 monitors			
SDR7	Must have	Ports	4 USB Ports or greater			
SDR8	Must have	Ports	RJ45			
SDR9	Should have	Ports	USB-C			
SDR10	Must have	Ports	Headphone output / Microphone input			
SDR11	Must have	Operating System	Windows 11 Pro 64-bit			
SDR12	Should have	Form Factor	Small Form Factor			
SDR13	Could have	WiFi	Option 1: 802.11ax Connectivity (price separately)			
SDR14	Could have	Drive option	Option 2: External Optical Drive (price separately)			
SDR15	Should have	Network	Bluetooth 5.3 or higher			
SDR16	Could have	Optional vendor recommendation	Optional vendor recommendation			
SDR17	Could have	Optional	Optional- capability to use a VR headset as a monitor			
Standard Laptop Requirements						
SLR1	Must have	Processor	Alternative 1: i5 Intel 13th-Gen 12-core Processor @ 2.0 gHz + - 18 mb cache Intel Iris Xe Graphics eligible			
SLR2	Must have	Processor	Alternative 2: i7 Intel 13th-Gen 14 core Processor @ 2.1 gHz + - 24 mb cache Intel Iris Xe Graphics eligible			
SLR3	Must have	Memory	16GB DDR4, room for expansion			
SLR4	Must have	Memory option	Option 1: 32GB DDR4 (price separately from 16GB)			
SLR5	Must have	Hard Drive	Solid State Drive, 512GB or greater			
SLR6	Must have	Display	15" Class LED Anti-glare			
SLR7	Must have	Network	Wake-on-LAN and PXE capable			
SLR8	Must have	Network	Intel 802.11 ac/ax			
SLR9	Must have	Network	Bluetooth 5.3 or higher			
SLR10	Must have	Network	RJ45 port or adapter			
SLR11	Must have	Speakers	Integrated, stereo			
SLR12	Must have	Keyboard	Integrated			
SLR13	Must have	Mouse / Trackpad	Integrated			
SLR14	Must have	Ports	1-2 USB Ports			
SLR15	Must have	Ports	1 USB-C			
SLR16	Must have	Ports	DPI or HDMI			
SLR17	Must have	Ports	Headphone output / Microphone input			
SLR18	Must have	Operating System	Windows 11 Pro 64-bit			
SLR19	Must have	Docking Station Option	MAC Address Pass-Through			
SLR20	Must have	Webcam	Built-in webcam with mic			
SLR21	Could have	Keypad, larger screen	Option 2: 10-key numeric keypad, larger screen (price separately)			
SLR22	Could have	Privacy screen	Option 3: Built-in privacy screen (price separately)			
SLR23	Must have	Cellular add-on option	Option 4: Verizon LTE cellular modem (price separately)			
SLR24	Should have	Optical Drive option	Option 5: DVD Writer (price separately)			
SLR25	Must have	Biometric	Option 6: Integrated fingerprint reader, Windows Hello compatible			
SLR26	Could have	Optional vendor recommendation	Optional vendor recommendation			

Vendors must use the Excel file to complete the Requirements pages. Vendor's completed Excel workbook should be uploaded as a separate file to the proposal.

Conversion Laptop Requirements

CLR1	Must have	Processor	Alternative 1: i5 Intel 13th-Gen 12-core Processor @ 2.0 GHz - 18 mb cache Intel Iris Xe Graphics eligible	
CLR2	Must have	Processor	Alternative 2: i7 Intel 13th-Gen 14 core Processor @ 2.1 GHz + - 24 mb cache Intel Iris Xe Graphics eligible	
CLR3	Must have	Memory	16GB DDR4, room for expansion	
CLR4	Must have	Memory option	Option 1: 32GB DDR4 (price separately from 16GB)	
CLR5	Must have	Hard Drive	Solid State Drive, 512GB or greater	
CLR6	Must have	Display	11" - 15" LED Anti-glare / Touch Model	
CLR7	Must have	Network	Wake-on-LAN and PXE capable	
CLR8	Must have	Network	Intel 802.11 ac/ax	
CLR9	Must have	Network	Bluetooth 5.3 or higher	
CLR10	Must have	Network	RJ45 port or adapter	
CLR11	Must have	Speakers	Integrated, stereo	
CLR12	Must have	Keyboard	Integrated	
CLR13	Must have	Mouse / Trackpad	Integrated	
CLR14	Must have	Ports	DPI or HDMI	
CLR15	Must have	Ports	Headphone output / Microphone input	
CLR16	Must have	Battery	6-Cell Long Life Battery	
CLR17	Must have	Operating System	Windows 11 Pro 64-bit	
CLR18	Must have	Docking Station Option	MAC Address Pass-Through	
CLR19	Should have	Ports	3 or more USB ports	
CLR20	Must have	Webcam	Built-in webcam with mic	
CLR21	Must have	Cellular add-on option	Option 2: Verizon LTE cellular modem (price separately)	
CLR22	Should have	Optical Drive option	Option 3: DVD Writer (price separately)	
CLR23	Must have	Biometric	Option 4: Integrated fingerprint reader, Windows Hello compatible	
CLR24	Could have	Optional vendor recommendation	Optional vendor recommendation	

Vendors must use the Excel file to complete the Requirements pages. Vendor's completed Excel workbook should be uploaded as a separate file to the proposal.

High-Performance Desktop Requirements

HDR1	Must have	Processor	Intel Core Processor i7 or i9, 3+ GHz (base), 4+ GHz (turbo), 10+ cores	
HDR2	Must have	Memory	32GB with room for expansion	
HDR3	Must have	Hard Drive	1st Drive - 256GB or greater	
			2nd Drive - 500GB or greater, Solid State Drives	
HDR4	Must have	Video Card	3840 x 2160 (4K) or greater; 12 GB VRAM or greater; Pixel Shader 3.0 or greater; DirectX 12-capable	
HDR5	Should have	Display Port	DPI or HDMI	
HDR6	Must have	Monitors	Capable of supporting 4 monitors	
HDR7	Must have	Network	Wake-on-LAN and PXE capable	
HDR8	Must have	Ports	4 USB Ports or greater	
HDR9	Must have	Ports	RJ45	
HDR10	Must have	Ports	Headphone output / Microphone input	
HDR11	Must have	Operating System	Windows 11 Pro 64-bit, version 1809 or above	
HDR12	Could have	Optical Drive	Option 1: DVD writer (price separately)	
HDR13	Could have	Network	Bluetooth 5.3 or higher	
HDR14	Could have	Optional vendor recommendation	Optional vendor recommendation	

ID	Priority	Component	Description	Conformance	Vendor Comments	Score
Vendor Requirements						
Warranty						
VR1	Must have	Standard Desktop Hardware	5 year next business day on-site (City does not ship)			
		Standard Laptop Hardware				
VR2	Must have	(excluding battery)	5 year next business day on-site (City does not ship)			
VR3	Must have	Standard Laptop Battery	3 year or better next business day on-site (City does not ship)			
Support						
		Technical support availability and location	Telephone and web-based support in North America, available weekdays 8:00 AM - 5:00 PM Mountain Time			
VR4	Must have					
VR5	Must have	Escalation options	Defined escalation process for issues with technical support			
VR6	Must have	End-of-Life and Replacement	Defined process for notification of EOL and replacement models			
VR7	Must have	Software updates	Defined process for obtaining driver and other software updates			
		Repair technicians	Repair technicians are your employees rather than third-party contractors			
VR8	Should have					
VR9	Should have	Repair certification	Ability to become self-certified for repairs if needed			
VR10	Must have	Hard drive retention policy	City retains all hard drives			
Deployment						
		Remote BIOS updates	Options for remote BIOS changes and updates			
VR11	Should have					
VR12	Should have	Image deployment	Option of preloaded image			
Operations						
		Shipping	Low-waste shipping options			
VR13	Should have					
VR14	Must have	Supply Chain	Provide your supply chain security policies			
Compliance						
			ISO/IEC 27001:2013 is a security management standard that specifies security management best practices and comprehensive security controls following the ISO/IEC 27002 best practice guidance. The basis of this certification is the development and implementation of a rigorous security program, which includes the development and implementation of an Information Security Management System (ISMS) which defines how an organization perpetually manages security in a holistic, comprehensive manner.			
		ISO 27001 - Security Management Controls	Demonstration of Compliance: Certification by a third party auditor			
VR15	Should have					
VR16	Should have	ADA compliance	Is your user portal WCAG 2.2 compliant?			
			Describe any other industry standards with which this solution or your operations are compliant			
VR17	Could have	Standards				
Vendor Requirements						0

Vendor Name:	
---------------------	--

Standard Desktop Pricing

Description/Brand/SKU or Part Number	Unit Price
--------------------------------------	------------

Alternative 1: i5

Alternative 2: i7

Option 1: Additional price for External Optical Drive

Option 2: Additional price for 802.11ax connectivity

Standard Laptop Pricing

Description/Brand/SKU or Part Number	Unit Price
--------------------------------------	------------

Alternative 1: 16GB RAM, 15" Class LED Anti-glare screen

Alternative 2: 16GB RAM, larger screen, 10-key numeric keypad

Option 1: Additional price for 32GB RAM total

Option 2: Additional price for integrated 10-key numeric keypad, larger screen

Option 3: Additional price for built-in privacy screen

Option 4: Additional price for Verizon-compatible LTE modem

Option 5: Additional price for external optical drive

Option 6: Additional price for integrated fingerprint scanner

Conversion Laptop Pricing

Description/Brand/SKU or Part Number	Unit Price
--------------------------------------	------------

Alternative 1: i5, 16GB RAM

Alternative 2: i7, 16GB RAM

Option 1: Additional price for 32GB RAM total

Option 2: Additional price for Verizon-compatible LTE modem

Option 3: Additional price for external optical drive

Option 4: Additional price for integrated fingerprint scanner

High-Performance Desktop Pricing

Description/Brand/SKU or Part Number	Unit Price
--------------------------------------	------------

Base Unit: no optical drive

Option 1: Additional price for DVD Writer

Vendors must use the Excel file to complete the Pricing page. Vendor's completed Excel workbook should be uploaded as a separate file to the proposal.

EXHIBIT B
AN AGREEMENT BETWEEN THE CITY OF ARVADA AND
DHE COMPUTER SYSTEMS, LLC. FOR GOODS AND
PROFESSIONAL SERVICES RELATING TO CITYWIDE
WORKSTATION REPLACEMENT IN AN AMOUNT NOT TO
EXCEED \$1,800,000.00



Addendum Description

Addendum No. 1 contains the answers to the questions received.

Notice Modifications

Notice Information	From Value	To Value
No entries		

Category Modifications

Added Categories
No Categories Added

Removed Categories
No Categories Removed

Added Documents[A]

Document	Size	Uploaded Date	Language
Q&A Document 1.pdf [pdf]	4 Kb	02/21/2024 06:08 PM MST	English

Questions & Answers - 1

Solicitation

24-IT-001 - 2024-25 Workstation Replacement

Buying Organization

City of Arvada

No	Question/Answer	Question Date
Q1	Question: Attached spreadsheet corrupted When I tried to open the downloaded Attachment A - 2024-25 Workstation Replacement Requirements, it told me the file is corrupted, will you please check? Thanks. Answer: The City could find no issues with the Excel file Attachment A - 2024-25 Workstation Replacement Requirements.	02/05/2024
Q2	Question: Scope of work May we know the expected quantity of each listed device? Thanks. Answer: The City does not have estimates by model. Existing counts by chassis are provided in the Statement of Work. Laptop (approx. 470), desktop (approx. 300), and tower (approx. 30).	02/05/2024
Q3	Question: RFP Questions a. Standard Desktop Requirements – Do you want this priced out with both an i5 and an i7 (Alternative 1 and Alternative 2)? b. Optional- capability to use a VR headset as a monitor – Which VR Headset(s) specifically? c. For both laptops, would an external optional drive be acceptable? d. Can the city provide more information on specific timelines for delivery they have in mind? e. Will it be one delivery or multiple over the course of the contract? f. What are the cities current standards for devices (Brand, Model, Type, Warranty)? Answer: a. Yes. Pricing options are listed on the Pricing tab of Attachment A. b. This requirement is in anticipation of a future need. The City's research shows Planning and GIS industry experiments are being conducted with the Meta Quest so you can use that model in your proposal. Please also add any additional guidance to the City related to VR Headsets. c. Yes, an external option is acceptable. Pricing options are listed on the Pricing tab of Attachment A. d. Specific start dates are not yet determined but will begin in 2024 and last between 12-18 months. e. Multiple large deliveries over the course of the initial deployment project (approximately 12-18 months). f. The City's current standards are not relevant to this solicitation. The City's existing models do not have the same specifications.	02/13/2024

No	Question/Answer	Question Date
Q4	Question: Compliance Requirements Are we able to bid on this if we are not yet ISO/IEC 27001:2013 certified and if our portal is not yet WCAG 2.2 compliant? We are working on these and this is listed as a "should have" not a "must have". Thank you Answer: Yes, include information on your certification and compliance plans in the Vendor Comments column.	02/15/2024

EXHIBIT C
AN AGREEMENT BETWEEN THE CITY OF ARVADA AND
DHE COMPUTER SYSTEMS, LLC. FOR GOODS AND
PROFESSIONAL SERVICES RELATING TO CITYWIDE
WORKSTATION REPLACEMENT IN AN AMOUNT NOT TO
EXCEED \$1,800,000.00



proposal by
DHE COMPUTER SYSTEMS
DAN HAMMACK
CTO | 720.240.4560
DAN.HAMMACK@DHECS.COM

WORKSTATION REPLACEMENT

REQUEST FOR PROPOSAL #24-IT-001

CONTACT

Dan Hammack
Dan.Hammack@dhecs.com
720.240.4560.
www.dhecs.com
7076 S. Alton Way, Suite C
Centennial, CO 80112

City of Arvada,

As the Co-Founder of DHE Computer Systems, I am pleased to offer City of Arvada our proposal for leading-edge Computers. DHE is committed to our partnerships and knows that these services will help the county achieve success through enhanced collaboration, engagement, and opportunity. Key differentiators of the proposed solution include:

- Market-leading products that offer flexibility, ease-of-use, and superior performance.
- Local value-added services/support programs to assist the City and support staff in integrating the technologies necessary for learning and collaboration.
- Ongoing technical assistance and just-in-time assistance for staff and technicians utilizing DHE's services.
- High-quality, efficient, and attentive team to support the City's needs.

DHE is committed to the City of Arvada's success and I'm confident that our solution will exceed the requirements presented in this bid.

Thank you for taking the time to review our proposal. DHE looks forward to working with the county for many more years to come.

Best Regards,



Dan Hammack
Chief Technology Officer & Founder

EXECUTIVE SUMMARY

DHE Computer Systems is pleased to submit a comprehensive proposal in response to the RFP for the 2024-25 Workstation Replacement project for the City of Arvada. Our proposal aligns closely with the city's requirements, offering a range of Lenovo and HP workstations that meet the specified need for advanced, energy-efficient technology. Each recommended product adheres to FCC and UL standards, ensuring reliable and secure performance. With DHE's proven expertise in delivering tailored technology solutions, our proposal includes detailed product specifications, competitive pricing, and a commitment to exceptional post-installation support, underlining our dedication to enhancing the City of Arvada's IT infrastructure while ensuring optimal value and service excellence.

DHE Computer Systems is a premier IT (Informational Technology) solutions provider and leader in the Rocky Mountain region. For over 34 years, we have provided our customers with competitive pricing, exceptional customer service and a dedicated technical services team to support large customer projects and roll outs. By being one of the largest providers of devices in Colorado, we believe that our offerings will be best suited to meet Arvada's needs.

As a local minority-owned and family-operated business, DHE is not only able to meet the City's requirements but exceed the opportunity by supplying value-add that our competitors cannot. Arvada will have dedicated representatives who are ready to deliver and serve the City's expectations. Our team is always willing and able to "Step Outside the Box" and address any unique needs or concerns. We are flexible, we listen, and we respond. We constantly strive to remain in the forefront and are always seeking innovative technologies to provide our customers with to ensure they always have the best technological solutions available in the marketplace.

DHE is a one stop shop for all your technology needs. Along with windows device procurement and services, DHE designs, configures, and manages large scale networks, datacenter and cloud infrastructure deployments, workstations, desktops, notebooks, storage, and in-depth Cyber-Security requirements. We offer a wide array of printers, printing supplies, software licensing, as well as warranty entitlement, and complete City system refresh.

Our company offers complete deployment solutions including SCCM (System Center Configuration Manager), Intune MDM (Mobile Device Management), Auto-Pilot deployment, ZTE (Zero-Touch Enrollment) with extensive white glove services, asset tagging, and customized imaging prior to delivery.

We are presenting the city with our top recommendation for Staff Devices that fit Arvada's requirements, along with a value-added experience that can only be provided by DHE Computer Systems.

For our workstation proposal, DHE has chosen to partner with Lenovo & HP. Through our years of experience, we believe that all OEM's products are the best performing devices due to durability and longevity.

VENDOR PROFILE & CONTACT INFORMATION

At DHE Computer Systems, we pride ourselves on our dedicated team of professionals who bring unparalleled expertise and commitment to every project. Below, we present detailed profiles of our key team members assigned to the City of Arvada's project. Each profile showcases the individual's extensive experience, unique skills, and dedication to ensuring the success of our partnership with the City of Arvada. Our team's collective expertise and proactive approach are pivotal in our mission to deliver exceptional service and tailored technology solutions. Dan, Merry, and Sonia will be the Cities main point of contact.

1. Sonia Ramos - Arvada Account Specialist

- Email: sonia.ramos@dhecs.com
- Phone: (303) 290-6050
- Sonia excels in translating complex tech scenarios into tailored solutions for Arvada, leveraging her profound tech knowledge and superior relationship-building skills to enhance client engagement and satisfaction.

2. Merry Hammack - Sales Director

- Email: merry@dhecs.com
- Phone: 720.240.4563

- Merry orchestrates the sales strategy with a nuanced understanding of the educational and technological sectors, ensuring solutions align with client objectives, fostering growth, and enhancing long-term partnerships.

3. **Dan Hammack - Chief Technology Officer**

- Email: Dan.hammack@dhecs.com
- Phone: 720.240.4560
- Dan's leadership in technology strategy is pivotal in delivering innovative solutions, ensuring DHE's offerings are at the forefront of industry standards, meeting Arvada's evolving tech needs.

4. **Taycia Yockim - Designated Accounting Manager**

- Detail-oriented and diligent, Taycia's management of financial operations instills confidence and ensures a seamless fiscal relationship with the City of Arvada, embodying precision and reliability.

5. **David Kahley - Designated Project Manager**

- David's comprehensive project management approach guarantees that each initiative is aligned with Arvada's goals, ensuring projects are not only successful but also strategically aligned with the city's vision.

6. **Sterling Leve - Designated Services Manager**

- With a keen focus on technical excellence and service quality, Sterling ensures that all solutions are functioning optimally, providing quick and effective resolutions to enhance user experience and operational continuity.

7. **Jacob Pieper - Designated Logistics Manager**

- Jacob's strategic oversight of logistics and delivery operations ensures that Arvada's needs are met with efficiency and accuracy, contributing to the smooth operation and success of the city's tech initiatives.

DHE Computer Systems was founded by Dan and Elena Hammack in 1989. What started as a duo with a passion for technology grew to become one of the largest Education Technology resellers in the nation.

Today, DHE is honored to have supported over 6,500 customers nationwide. Our clientele primarily serves State & Local Government, but it is not limited to Enterprise, Small and Medium-Sized Businesses, Healthcare, Education, as well as other business verticals.

DHE Computer Systems is a nationally accredited Technical Sales and Service provider. For more than 34 years, DHE has been named a premier authorized repair and sales center for Lenovo, HP, Dell, and several other OEMs (Original Equipment Manufacturer) in the region. We stand ready as a knowledgeable national service provider and eager to assist with any technical requirements the city may have.

At DHE, we are prepared to provide Arvada with comprehensive solutions and superior technical support. Our skilled team is ready to provide the expertise, energy, and technical insight necessary to manage a project of this size.

QUALIFICATION

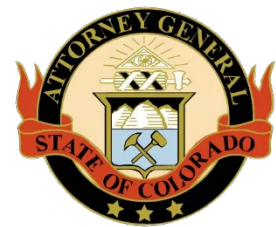
DHE Computer Systems stands out with a solid track record, selling over 150,000 devices annually, a testament to our scale and expertise. Our offerings go beyond mere distribution; we provide comprehensive white-glove services, ensuring personalized setup and deployment tailored to each client's specific requirements. This, coupled with our extensive experience serving a diverse client base of over 7,000 active clients, including many within Arvada's community, underscores our deep industry knowledge and commitment to exceptional service. Our Colorado roots and compliance with industry standards further solidify our status as a trusted, locally invested technology partner.

COLORADO PROUD

At DHE, we are proud to support our local Colorado community. Below are some of the entities we work with:



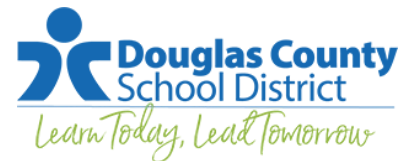
COLORADO
Department of Corrections



COLORADO
Department of Public Safety



COLORADO
Division of Criminal Justice
Department of Public Safety



PARTNER HIGHLIGHTS

- Dedicated Local Team - Residing and working in your community.
- Designated Project Managers and Sales Support – Nick Garcia, Merry Hammack & Dan Hammack - To oversee all aspects of quote and order processing, device fulfillment, City daily inquiries, deployment, technical training, and support for City of Arvada.
- Your dedicated team answers emails and calls the same day in a very responsive manner. Typically, within 1-2 hours after notification if not sooner.
- Your dedicated team reside and local to the Denver Area, operate on Mountain Standard Time (MST) and remain at your disposal during Arvada normal working hours.
- Customer Service - DHE has a proven record of accomplishment delivering our value throughout the state of Colorado. DHE takes customer service seriously and constantly strives to provide the utmost care to each customer and order. Our commitment includes (but not limited to):
- A personalized customer success team aligned with Arvada expectations.
- Immediate contact and involvement with their account representatives. Direct line and cell phone available for all escalated requests.
- Proven project management that interacts with Arvada warehouse and leadership to oversee and execute complex device roll out projects of any size.
- Flexibility - DHE will remain adaptable to assist with all unique requirements. This includes but not limited to storing and warehousing of equipment to be delivered on a specific date, or special handling requirements.
- Actively listening and prioritizing the cities concerns and requests to meet expectations. Constant communication is what makes DHE different.

COMMUNITY FIRST



DHE is proud to be a Family Operated, Minority Women Owned, Small Business in the State of Colorado. Though DHE has grown to hire 66 employees, our company stays true to our family's core values.

At DHE, outreach is our top priority. Each year we work with various non-profits and schools to give back to our community. DHE believes that **Community Comes First**. DHE is proud to be a sponsor for the following programs:



REFERENCES

As a top-tier service and sales provider in the Rocky Mountain Region, our company excels at cultivating robust customer relationships. The references outlined below demonstrate our ongoing partnerships with satisfied clients who continue to engage our services. For each reference, we provide contact details and a brief overview of our collaboration:



DHE Computer Systems is engaged by the City of Lakewood to provide services related to the PC replacement program. This program involves the procurement, imaging, deployment, and management of new PCs, laptops, and monitors, along with the requirement to run Windows 11 Pro OS and adhere to established hardware and image standards. Additionally, DHE handles data transfers, asset tagging, data wiping, and disposal of old hardware as part of this project. DHE has been the contract holder for these services for the past 5 years and was recently awarded this contract for an additional 5 years.

Scope of Work:

1. **Procurement of Hardware:**
 - The City of Lakewood procures the desired number of PCs and laptops according to the hardware specifications established by the City.
 - DHE will ensure that all hardware components meet or exceed the City's hardware standards.
2. **Imaging of Devices:**
 - DHE will image the purchased devices with the City's standard image when needed.
 - The imaging process will include the installation and configuration of Windows 11 Pro OS.
3. **Onsite Deployment and User Support:**
 - DHE will coordinate with the City to schedule onsite deployments of new devices.
 - During onsite deployments, DHE will assist end-users with profile configuration and data transfers between old and new devices.
 - DHE will provide on-site technical support to ensure a smooth transition for end-users.
4. **Asset Tagging and Tracking:**
 - DHE will add asset tags to all new devices as required by the City.

- DHE will provide data related to the newly tagged devices for tracking and inventory purposes in the City's asset tracking application.
5. **Data Wiping:**
 - DHE will ensure the secure wiping of data from the old hardware in compliance with data privacy and security standards.
 - Data wiping will be performed using industry-standard methods to prevent data leakage.
 6. **Disposal of Old Hardware:**
 - DHE will responsibly remove and dispose of old hardware in an environmentally friendly and compliant manner.
 - Disposal methods will adhere to local regulations and environmental standards.



DHE Computer Systems maintains multiple contracts with Denver Public Schools (DPS) covering various technology procurement solutions, including Student Chromebook Devices, Staff Windows Devices, Student Safety Software, STEM Labs/3D Print, and Charging Carts. As the largest school district in Colorado, DPS relies on DHE's expertise to fulfill its diverse technology needs. DHE has been a trusted partner in supporting DPS's 1:1 program, known as "MyTech," and has supplied individual site purchases, contributing to the deployment of over 125,000 devices to the district. DPS has been a customer with DHE since 2018.

Scope of Services for DPS:

1. **Chromebook Device Procurement:**
 - DHE assists DPS in procuring Student Chromebook Devices.
 - DHE provides project planning services for the deployment of Chromebook devices.
 - DHE handles Chromebook enrollment for DPS.
 - Asset Tag placement and management for each Chromebook device is managed by DHE.
2. **Windows Device Procurement and Management:**
 - DHE delivers thousands of Windows devices to DPS, addressing various requirements.
 - DHE's services include imaging services in our SCCM environment for Windows devices.
 - BIOS updates, Asset Tag placement, and management are part of DHE's Windows device services.

- DHE facilitates memory upgrades and custom configuration needs for Windows devices.
- DHE has introduced Windows Autopilot Deployment for all Windows devices within the district.
- 3. **Self-Maintainer Program:**
 - DHE has implemented a self-maintainer program for DPS, offering the district a highly advantageous maintenance solution.
- 4. **Repair Services:**
 - DHE's service team provides weekly repair services for DPS on-site, ensuring the reliability and functionality of the deployed devices.

Collaboration with DPS:

DHE Computer Systems has been a longstanding partner in DPS's technology initiatives, including the successful implementation of the MyTech program. Our collaborative efforts have resulted in the seamless deployment of a vast number of devices to support the educational needs of the district. We continue to work closely with DPS to meet their evolving technology requirements and enhance the learning experience for students and staff.



DHE Computer Systems has fostered a thriving and enduring partnership with Goal Academy, Colorado's largest charter school, spanning over eight years. As a trusted ally, we have assumed responsibility for their device contract and consistently delivered outstanding services. This collaboration has yielded the successful sale and continual maintenance of an impressive inventory exceeding 75,000 Lenovo devices, encompassing desktops, laptops, monitors, and accessories. Goal has been a DHE Customer for 10 years.

Scope of Services for Goal Academy:

1. **Device Procurement and Support:**
 - DHE oversees Goal Academy's device procurement, ensuring their technology needs are met.
 - Our services include the sale and support of an extensive range of Lenovo devices, enhancing the school's technological infrastructure.
2. **White Glove Services:**
 - Goal Academy benefits from DHE's premium White Glove Services, a comprehensive suite that encompasses:

- Imaging: DHE expertly configures devices to meet Goal Academy's specific requirements.
 - Diagnostics: We provide thorough diagnostics to maintain device health and performance.
 - Asset Tagging: DHE manages asset tagging for efficient device tracking and management.
 - Streamlined Delivery: Our services include efficient and timely device delivery to ensure minimal disruption.
3. **Infrastructure Management:**
- DHE takes charge of addressing all of Goal Academy's infrastructure needs, including the provisioning of servers.
 - Our expertise ensures a robust and reliable technology environment.
4. **Software Licensing Expertise:**
- DHE manages all software licensing needs for Goal Academy, ensuring seamless integration and operational excellence across the organization.
 - We guarantee compliance with licensing agreements to prevent any operational disruptions.

Collaboration with Goal Academy:

DHE Computer Systems has established a lasting and productive partnership with Goal Academy, resulting in the acquisition and management of a substantial fleet of Lenovo devices and the provision of top-tier services. We are committed to excellence and dedicated to addressing Goal Academy's technology needs comprehensively. Our ongoing collaboration continues to drive efficiency and innovation within the organization.



Jefferson County Public Schools (Jeffco), currently the second largest school district in Colorado, has established a significant partnership with DHE Computer Systems. DHE is actively engaged in various contracts, including Windows Devices, to fulfill Jeffco's diverse technology needs. Jeffco has been a DHE customer since 2015.

Scope of Services for Jeffco Public Schools:

1. **Device Procurement:**
- DHE provides Jeffco with a wide range of technology devices, including Lenovo Laptops, Tablets, Desktops, and peripheral items.
 - Our partnership extends to customized solutions tailored to meet Jeffco's specific requirements.
2. **Punchout Catalogue Implementation:**

- DHE has developed and customized a Punchout catalog for Jeffco, streamlining the district's purchasing process.
- Jeffco's purchasing staff benefits from the ability to create quotes and requisitions within the system, promoting efficiency in procurement.
- The Punchout catalog seamlessly integrates with Jeffco's financial software, simplifying the administration of purchase orders.
- Digital ASN (Advanced Shipping Notice) transmissions to the financial software eliminate the need for manual data entry.

3. **Accounting and Billing Support:**

- DHE's accounting team collaborates closely with Jeffco to address any specific requirements or needs before billing.
- This proactive approach ensures a smooth and transparent financial process.

4. **Self-Maintainer Program:**

- DHE has established a self-maintainer program for Jeffco, delivering significant benefits to the district.
- Our service team works in tandem with Jeffco Technicians, providing guidance and support for any queries.
- Live training sessions are conducted to demonstrate correct repair processes.
- Supplementary videos are provided to the district, offering guidance on common repair processes and part replacements.
- DHE, as a Lenovo Authorized Service Center, stands ready to assist with repairs as needed, given the substantial number of devices within Jeffco's fleet.

Collaboration with Jeffco Public Schools:

DHE Computer Systems has forged a strong and mutually beneficial partnership with Jefferson County Public Schools. As Jeffco's technology needs evolve, DHE continues to provide tailored solutions, procurement support, and streamlined processes. Our commitment to excellence ensures that Jeffco can focus on delivering a superior education to its students with dependable and efficient technology solutions.



DHE Computer Systems has established a thriving and enduring business partnership with the Regional Transportation District (RTD). RTD, the regional agency responsible for public transit services across eight counties in the Denver-Aurora-Boulder Combined Statistical Area in Colorado, relies on DHE as a trusted technology partner. Our collaboration encompasses a wide range of services and has

facilitated the successful procurement and maintenance of thousands of Lenovo devices, including desktops, laptops, monitors, and accessories.

Scope of Services for the Regional Transportation District (RTD):

1. Device Procurement and Support:

- DHE provides comprehensive device procurement services to RTD, ensuring their technology needs are met efficiently.
- Our services encompass the sale and support of a substantial inventory of Lenovo devices, enhancing RTD's technology infrastructure.

2. Premium White Glove Services:

- RTD benefits from DHE's premium White Glove Services, including:
 - Imaging Verification: DHE ensures accurate and reliable device configurations through thorough imaging verification.
 - Hardware Testing and Diagnostic: We conduct rigorous hardware testing and diagnostics to maintain device performance.
 - Asset Tagging: DHE manages asset tagging for efficient device tracking and management.
 - Advanced Shipping Notices (ASNs): Digital ASN transmissions streamline logistics and eliminate manual data entry.
 - Streamlined Delivery: Timely and efficient device delivery minimizes disruptions for RTD.

Collaboration with the Regional Transportation District (RTD):

DHE Computer Systems has forged a strong and enduring partnership with RTD, enabling the agency to navigate the complex realm of technology procurement and management. Our commitment to excellence empowers RTD to deliver reliable and efficient public transit services across its expansive region. As RTD's technology needs evolve, DHE remains dedicated to providing tailored solutions and unparalleled support.

TECHNICAL PROPOSAL

SCOPE OF WORK

Our team at DHE Computer Systems has meticulously evaluated the City of Arvada's Scope of Work requirements and is poised to deliver comprehensive solutions that align with the city's objectives. In our technical proposal, we'll detail the products and services we offer, explaining how they'll benefit Arvada. We're set to provide the following as per the contract:

- 1. Preferred Hardware and Specifications:** We'll supply hardware that meets Arvada's preferred specifications, with a thorough breakdown of brands, models, and specs, ensuring full compliance with the city's needs.
- 2. Lead Time for Hardware Deliveries:** DHE commits to timely

hardware delivery post-order execution, aiding the city's planning and deployment schedule.

3. **Optional Deployment Services:** If Arvada chooses, we can facilitate seamless integration with services including unpacking, hardware management, BIOS/firmware updates, BIOS configuration, asset tagging, OS imaging, and user coordination.
4. **Lead Time for Deployment and Decommissioning Services:** We ensure prompt services post-order, typically within 2-3 weeks from factory to warehouse.
5. **Maintaining Established Pricing:** DHE guarantees stable pricing throughout the contract duration, offering budgeting consistency and financial peace of mind.
6. **Transparent and Comprehensive Project Plans:** Our sample project plans will outline our lifecycle process execution, aligning with Arvada's requirements to ensure a successful partnership.

VENDOR REQUIREMENTS

Warranty:

- VR1: DHE ensures that the City of Arvada's standard desktop hardware will be covered by a 5-year next business day on-site warranty without any requirement for shipping, backed by comprehensive support for a worry-free user experience.
- VR2: DHE matches the need for extended care with a 5-year on-site warranty for standard laptop hardware, excluding batteries, for prolonged operational reliability.
- VR3: We include a default 3-year or better on-site support for standard laptop batteries to maximize uptime for the City's mobile workforce.

Support:

- VR4: DHE, an Authorized HP and Lenovo Warranty repair center, offers extensive OEM warranty support with local assistance, available during business hours for the City of Arvada.
- VR5: Should OEM support not meet expected service levels, DHE's local escalation process ensures issues are addressed swiftly, with Sterling Leve available for immediate assistance.
- VR6: DHE commits to proactive communication regarding EOL notifications and replacement options, allowing the City to plan ahead for technology transitions.

Deployment:

- VR11: We enable seamless integration and updating with remote

BIOS updates using standard OEM tools for both HP and Lenovo.

- VR12: DHE offers the flexibility of factory preloaded images or local image deployment services, supplemented by Intune/Autopilot configuration assistance.

Operations:

- VR13: Reflecting our commitment to sustainability, all devices are dispatched in eco-friendly, low-waste packaging from our secure Centennial warehouses.
- VR14: Our supply chain is secured with stringent policies, ensuring all received equipment is brand new, factory sealed, and meeting the City's standards.

Compliance:

- VR15: DHE's internal security protocols meet the rigors of ISO/IEC 27001:2013. While not currently certified, we are prepared to achieve certification if required by the City of Arvada.
- VR16: Ensuring accessibility, our procurement user portal adheres to WCAG 2.2 guidelines, prioritizing inclusivity in our digital interactions.
- VR17: DHE supports various industry standards, offering a secure punch-out portal that integrates with existing ERP systems for protected and streamlined procurement processes.

Credit Card Processing: DHE Computer Systems provides a streamlined and flexible payment process for the City of Arvada. While we readily accept purchase orders at no additional cost to the city, we also accommodate credit card payments for added convenience. Please note, transactions made using a credit card will incur a nominal fee of 3% per transaction. This fee is to cover the additional costs associated with credit card processing. Our goal is to offer various payment options to meet the city's purchasing preferences while maintaining transparent and efficient financial operations.

DHE is committed to exceeding the City of Arvada's expectations with high-quality service and responsive support, delivering a robust and compliant technological partnership.

Our solution leverages the strength of leading technology providers, Lenovo and HP, ensuring a blend of reliability, performance, and innovation. By bidding both HP and Lenovo, we aim to provide the city with flexibility and options, recognizing that these two OEMs are market leaders renowned for their innovation and reliability in the technology sector.

LENOVO OVERVIEW

In response to Lenovo's bidding approach, we appreciate the company's method of offering configured-to-order devices that align with the City of Arvada's specifications, including optional upgrades. This strategy ensures consistency across the provided devices, allowing for a streamlined integration and management process. For instance, the Lenovo L15 AMD R5 model # 21H8S3E90, which comes LTE WWAN Ready, is a prime example of how Lenovo incorporates requested upgrades directly into the device configuration, providing a complete solution with a clear price for each upgraded device. This approach not only simplifies the selection process but also ensures that the city receives devices that are tailored to its specific needs, with transparent pricing for each configuration.

Lenovo offers both Intel and AMD versions of each device category, including desktops and laptops. This dual-option approach ensures the city has the flexibility to choose based on their specific preferences or technical requirements. Whether it's the Intel-based M70s Gen 4 desktops and L15 Gen 4 laptops or their AMD counterparts, the M75s desktops, and L15 Gen 4 AMD variants, the city can select the best fit for their operational needs.

- **M70s Gen 4 Desktops (i5 & i7):** Do more with less with the space-saving Lenovo ThinkCentre M70s Gen 4 (Intel) desktop PC. Its small chassis contains everything your enterprise needs, including up to 13th Gen Intel® Core™ processors. You'll also get best-in-class connectivity, integrated AI accelerators, and extremely high memory capacity. Multitask with ease and efficiency as you seamlessly handle complex data operations and graphics projects.

These standard desktops are equipped with Intel Core i5 and i7 processors, offering robust performance for business applications. The i5 models are ordered in bulk, emphasizing their reliability and suitability for widespread deployment.

Lenovo ThinkShield security offers a combination of hardware and software solutions to protect your ThinkCentre M70s PC. A discrete Trusted Platform Module (dTPM) 2.0 chip encrypts passwords and data. BIOS-based Smart USB protection and individual USB port disablement prevent unauthorized access. The Kensington™ Lock slots, chassis e-locks, and other options discourage physical theft.

The M70s provides additional hardware-based security capabilities for next-level protection.

This PC meets the highest environmental standards, including TCO 9.0 and EPEAT™ Gold. Lenovo is committed to creating eco-friendly products using recyclable, toxic-free components in every device. Plus, by 2025/26, 90% of PC products' packaging will be made from recycled materials.

- **M75s Desktops (AMD R5 & R7):** The ThinkCentre M75s Gen 2 desktop will breeze through your toughest tasks with up to an AMD Ryzen™ 7 PRO processor and up to 128GB DDR4 memory. Multitask, create content, and crunch data easily, improving productivity and the bottom line.

The Thinkcentre M75s Gen 2 small form factor desktop's discrete Trusted Platform Module (dTPM) chip encrypts critical information and enables hardware authentication. BIOS-based Smart USB Protection prevents unauthorized access via peripheral. And AMD GuardMI technology enables power-on-to-power-off data protection with a co-processor inside the AMD Ryzen™ PRO CPU.

Featuring AMD Ryzen 5 and Ryzen 7 processors, these desktops deliver high efficiency and power, tailored for demanding business environments.

The ThinkCentre M75s Gen 2 SFF offers plenty of convenient features to help users be more comfortable and productive. A rapid-charging USB port enables fast data transmission and device charging, even when the PC is in sleep mode. Turn on the desktop with a simple key stroke. Connect multiple peripherals to a variety of ports, for seamless multitasking. Easily manage updates, diagnostics, and security from a remote location.

- **L15 Gen 4 Laptops (Intel i5 & i7, AMD R5 & R7):** The Lenovo ThinkPad L15 Gen 4 laptop inspires productivity. When it comes to security, the ThinkPad L15 Gen 4 laptop delivers. ThinkShield hardware and software components with integrated discrete Trusted Platform Module (dTPM), the added security of Windows 11, Microsoft 11 Secured-core PC enablement, and up to the Intel vPro® platform deliver protection from every angle. What's more, the power button boasts an optional fingerprint reader for an additional

layer of protection.

We use the US Department of Defense's MIL-STD 810H standards to create a balance of reliability and durability for our ThinkPad laptops. We test against 12 standards and more than 200 quality checks to ensure they run in extreme conditions. These tests cover harsh variables like Arctic wilderness and desert dust storms, including temperature, pressure, humidity, vibration, and more. These standard laptops come with a choice of Intel or AMD processors, ensuring versatile performance for mobile computing. LTE options indicate enhanced connectivity features.

- **L13 Yoga Gen 4 Laptops (Intel i5 & i7, AMD R5 & R7):** The ThinkPad L13 Yoga Gen 4 convertible laptop inspires productivity. It's thin, light, and quick in all that it does — including an instantaneous boot up and log in, with a power button activated by an optional fingerprint reader. Plus, it boasts plenty of storage and fast memory. With optional Intel vPro®, IT admins appreciate the convenience of remote deployment and manageability. Conversion laptops with flexible design for various use cases, equipped with high-performance processors, and available in LTE versions for on-the-go connectivity.

ThinkShield, our comprehensive suite of security solutions, is integral to our laptops. Optional biometrics provide extra protection — from the fingerprint reader to the facial recognition software that works with the infrared (IR) camera. Discrete Trusted Platform Module (dTPM) encrypts your critical data, while optional Intel vPro® helps prevent attacks to the OS, login credentials, and more.

Thanks to its 360-degree hinge, the ThinkPad L13 Yoga Gen 4 convertible quickly switches between laptop, tablet, tent, and stand modes. No matter where your work takes you, we've got a way to accommodate your style and help get things done, faster. Seamlessly go from typing on the keyboard to sketching, signing documents, or taking notes on screen with the garaged pen. Or just swipe when you're using the device as a tablet. And if you want to share your screen for collaboration, it literally bends over backwards for you.

- **P3 Tower:** Designed by engineers for engineers, the Lenovo ThinkStation P3 Tower offers all the workhorse capabilities of a

workstation for the price of a desktop. Built for tasks that require superior power and performance, it's equipped with the latest 13th Gen Intel® Core™ processors, now up to 24 cores, and supports professional NVIDIA® discrete graphics.

A high-performance tower, likely designed for intensive tasks, with specifications indicating a need for a DVD driver, suggesting a blend of modern performance with legacy media support.

With three onboard DisplayPorts, plus the ability to configure up to eight more, the ThinkStation P3 Tower can support up to 12 independent displays. And with heaps of speedy memory and SSD storage, plus five open PCIe slots for a variety of network and special purpose add-in-cards, this workstation can be configured to tackle your most exacting workflows.

At the heart of every Lenovo ThinkStation is reliability. Proven to run in extreme conditions, the ThinkStation P3 Tower also boasts an array of independent software vendor (ISV) certifications. It's the perfect workstation for designers, engineers, and students looking for versatility, flexibility, and breakthrough performance to breeze through heavy workloads.

The ThinkStation P3 Tower is protected with ThinkShield, a suite of hardware and software that work together to safeguard your workstation and data. This includes the discrete Trusted Platform Module (TPM) 2.0 to encrypt sensitive data, as well as various programs to prevent unauthorized access to the BIOS, plus self-healing software if the BIOS is corrupted or maliciously attacked. For extra peace of mind, it also supports Windows firmware updates.

HP OVERVIEW

- **HP Elite SFF 600 G9 i5 #7E9G9AV:** This is a small form factor (SFF) desktop PC equipped with an Intel Core i5 processor, likely the 12th Gen i5-12500. It has expandable memory (up to 128GB DDR5) and storage (up to 4TB HDD or SSD). This model is suitable for everyday business tasks and moderate multitasking.
- **HP Elite SFF 600 G9 i7 #7E1Z0AV:** Similar to the i5 model, this SFF PC comes with a more powerful 12th Gen Intel Core i7 processor, potentially the i7-12700. This offers better performance for demanding applications like video editing or heavy multitasking.
- **HP EliteBook 650 G10 i5 #736W6AV:** This is a traditional clamshell

laptop with an Intel Core i5 processor, likely the 11th Gen i5-1135G7. It is suitable for everyday productivity tasks and moderate workloads.

- **HP EliteBook 650 G10 i7 #736Y4AV:** This model upgrades to a more powerful 11th Gen Intel Core i7 processor, likely the i7-1185G7, offering better performance for demanding tasks.
- **HP EliteBook x360 830 G10 i5 #6V439AV:** This is a 2-in-1 convertible laptop with an Intel Core i5 processor, likely the 11th Gen i5-1135G7. It can be used in both laptop and tablet modes, making it versatile for different user needs.
- **HP EliteBook x360 830 G10 i7 #6V447AV:** Similar to the i5 version, this 2-in-1 laptop boasts a more powerful 11th Gen Intel Core i7 processor, likely the i7-1185G7, for better performance.
- **HP Z2 G9 Tower Workstation:** While details are absent, the name suggests it's a powerful desktop workstation, likely built for demanding tasks like engineering simulations, video editing, and 3D rendering.

CUSTOMER SUPPORT

DHE Computer Systems is committed to providing high-quality and timely support for Arvada's Device Initiative. We understand that it is essential for the City to have a reliable and responsive support system to ensure the smooth operation of the devices. To this end, we propose the following initial SLA:

1. **Hours of available support from DHE:** Our customer support representatives are available via phone and email, Monday through Friday from 8 am to 5 pm Mountain Standard Time, excluding Federal holidays. Toll-free support is preferred for your convenience. DHE Computer Systems has a dedicated support team available to assist Arvada with their hardware and software needs. Our customer support representatives are available to be contacted via phone, chat, or email, Monday through Friday (excluding Federal holidays) from 8 am to 5 pm Mountain Standard Time. Our support tickets are accessible by multiple support reps and management to ensure that any issue is promptly escalated if necessary.

For support outside of regular business hours, we have a dedicated team ready to assist City needs 24/7 via a call-forwarding service that accommodates both verbal and written communication via text message. The support team is led by Dan Hammack, DHE's designated point of contact for Arvada, and is supplemented by our escalation

contacts for more complex issues. We are committed to providing timely and effective support to ensure that the City's hardware and software needs are met with excellence.

2. **Methods of contact:** You may reach us through our toll-free support line, or by sending an email to our dedicated support email address. We will provide you with a work order number upon receipt of your request.
3. **Proposer response times after initial problem report and options for faster response:** DHE Computer Systems understands the importance of timely support when it comes to the functionality of your devices. Typically, we respond within 1-2 hours of receiving an initial request for support. However, in the rare instance that we cannot respond within this time frame, we assure a response within 24-48 hours during normal business days.
4. **Online support and resources:** At DHE, we believe in providing comprehensive online support and resources to our clients. We offer access to our website, knowledge base, and user groups to help you troubleshoot any issues you may encounter. In addition, we provide online hardware support information for HP and Lenovo devices, as well as online support for Microsoft products. We also have a service ticket portal where our technicians are available to assist you with technical issues you may encounter. You can access our ticket support portal once our team makes your designated portal. With our online resources and dedicated support team, we aim to provide you with the tools and assistance you need to ensure that your systems are running smoothly. Additional online support can be found below:
 - <https://support.microsoft.com/en-us>
 - <https://support.hp.com/us-en>
 - <https://support.lenovo.com/us/en>
5. **Procedures and timeframes for escalating support problems in DHE's management structure:** At DHE, we take support issues seriously and have a clear escalation process in place to ensure timely resolution of any support problems. If a support issue cannot be resolved by the initial technician, it will be escalated to a higher level of technical support. If the issue remains unresolved, it will be escalated to a manager for review and additional resources will be brought in as necessary.

We understand the urgency of support issues and strive to resolve them as quickly as possible. Our escalation process is designed to ensure that support problems are addressed promptly and efficiently, with clear communication to the customer throughout the process.

DHE ESCALATION STRUCTURE		
ESCALATION LEVEL	CONTACT	CONTACT INFORMATION
1	Sonia Ramos <i>Arvada Account Specialist</i>	sonia.ramos@dhecs.com (303) 290-6050
2	Merry Hammack <i>Senior Account Manager</i>	merry@dhecs.com 720.240.4563
3	Dan Hammack <i>Chief Technology Officer</i>	Dan.hammack@dhecs.com 720.240.4560

Technical Support Escalation Procedures: We understand that sometimes technical issues can be frustrating, and we are committed to ensuring that your concerns are addressed promptly and effectively. If you feel that your support needs are not being met, please don't hesitate to reach out to us.

For technical escalations, your first point of contact is Dan Hammack. Merry and Dan are dedicated to providing exceptional customer service and are available 24/7 to assist you with any technical issues that may arise. We value your business and are here to help in any way we can.

- 6. The number of City personnel that may contact the proposer to receive System Support Services:** There is no limit to the number of City personnel who may contact us to receive system support services.
- 7. Direct POC on large scope issues that might arise:** We have dedicated Dan Hammack & Merry Hammack, as your primary point of contact for any large scope issues that might arise. These individual will

8. **DOA replacement policy from Proposer:** At DHE Computer Systems, we understand the importance of reliable technology solutions for educational institutions. We are proud to offer City of Arvada comprehensive Windows device support proposal that prioritizes the satisfaction and success of your staff. Our commitment to providing unparalleled service and support is reflected in the following key features of our proposal:
 - a. **DOA Replacement Policy:** Beyond the standard manufacturer's warranty, DHE guarantees to replace any Windows device deemed Dead on Arrival (DOA) within the first 30 days of use. This ensures minimal disruption to your operations and demonstrates our dedication to delivering high-quality products.
9. **Durability of repair:** DHE understands the importance of providing durable and reliable hardware to ensure uninterrupted learning in the classroom. Our bid includes enterprise-grade hardware that is MIL-SPEC tested and proven to withstand common damages. As a result, DHE's typical hardware repair rate averages around 3%, which is well below the industry standard. However, in the unlikely event that any device requires repair, our team of experienced technicians will work diligently to diagnose and fix any issues as quickly as possible to minimize disruptions to the learning process

We believe that this SLA provides a solid foundation for our partnership with Arvada City and demonstrates our commitment to providing high-quality and reliable support for your workstation devices. We look forward to working with you to ensure the success of your technology initiatives.

WARRANTY DETAILS

Lenovo: Lenovo's comprehensive warranty and service offerings reflect a deep commitment to customer satisfaction and product reliability throughout the lifecycle of their devices. Here's a narrative elaborating on the Lenovo warranties and the updates we are bidding for:

Base Warranty: All Lenovo devices proposed for the City of Arvada come with a standard 3-year on-site warranty, ensuring minimal downtime and prompt repairs. When an issue arises that cannot be resolved remotely, Lenovo dispatches a certified technician, typically by the next day, to perform on-site repairs.

Why Lenovo?

- **Expertise:** Lenovo-certified technicians have an intimate knowledge of their products, guaranteeing the highest quality of repairs with Lenovo-Qualified parts.

- **Global Support:** Lenovo provides a consistent level of service across regions, with local-language support ensuring seamless assistance to multinational organizations.
- **Cost Savings:** The aim is to reduce unforeseen operating and maintenance costs through proactive warranty services.
- **Customizable Solutions:** Warranty options are tailored to fit diverse organizational needs, matching service coverage with the PCs' lifecycle.

Service Upgrades:

- **3Y and 5Y Keep Your Drive Add On:** This service ensures that the City can retain the hard drives of their Lenovo devices, enhancing data security and providing peace of mind.
- **5Y Onsite Upgrade from 3Y Onsite:** Extend the base warranty's onsite repair service for an additional two years, reaffirming the long-term reliability.
- **3Y and 5Y Sealed Battery Replacement:** Lenovo offers a warranty extension for integrated batteries, a crucial service since the replacement requires technical expertise due to the non-Customer Replaceable Unit (CRU) nature of sealed batteries.

Sealed Battery Warranty Extension:

- Designed for integrated battery technology, this service mitigates the inconvenience of sending devices for battery replacement.
- It provides cost savings compared to out-of-warranty replacements, with a one-time replacement if the battery falls below performance standards.

Battery Diagnostic Tool: Lenovo's diagnostic tool assesses battery health, considering factors like temperature, usage, and age, to provide a clear indication of the battery's condition, and determine eligibility for warranty replacement within the warranty period.

International Warranty Service: Should the City need battery service abroad, Lenovo's International Warranty Service facilitates replacements through local support channels.

Lenovo's service portfolio is part of a full-circle approach to the PC lifecycle, from the initial deployment to end-of-life asset recovery. Lenovo Services offer a strategic advantage to organizations by providing:

- **Flexibility and Security:** Lenovo's offerings allow the City to stay flexible in its IT management while ensuring security and privacy.
- **Productivity:** Through convenient options like On-site and Expedited Depot services, Lenovo minimizes disruptions to productivity.
- **Customization:** The services are designed to cater to various needs within the organization, ensuring each device is optimized for its user.

Service Details:

1. **On-site + Technical Install CRU:** With this service, Lenovo's on-site support includes the installation of all needed CRUs. The City of Arvada will benefit from this service as Lenovo technicians will manage all aspects of hardware servicing.

2. **Extended Services:** These are designed to align with the City's expectations for performance and durability. Lenovo's warranties and extensions are a testament to the confidence in their product longevity and user satisfaction.
3. **Warranty Updates:** By opting for additional warranty services like the 5Y Onsite upgrade and Sealed Battery replacements, the City ensures that its devices will be covered for a significant portion of their usable life, reducing total cost of ownership and enhancing asset management.

In conclusion, Lenovo's warranties and services are structured to ensure peace of mind for the City of Arvada, guaranteeing that the investment in technology is protected, supported, and leveraged to its full potential.

HP's onsite service offerings begin with a solid foundation of a 3/3/3-year warranty, which assures the City of Arvada three years of parts, labor, and onsite repair service, ensuring that if any hardware issues arise, HP's expert technicians will be dispatched to provide timely, direct support at your workplace.

Understanding that different organizations have varying needs, HP also offers the option to extend this warranty to a 5-year onsite service plan. This extended warranty provides the City of Arvada with additional years of assurance, reducing potential downtime and ensuring that end-users have the support they need to maintain productivity without significant disruptions.

Key Points of HP Onsite Services:

- **Standard 3-Year Warranty:** HP's base warranty covers repairs and service for three years, providing comprehensive onsite support that includes parts and labor by certified HP technicians.
- **5-Year Onsite Warranty Upgrade:** For increased protection and longer service assurance, HP gives the option to upgrade to a 5-year onsite warranty, allowing the City of Arvada to extend the life of their investment and align with the lifecycle of their technology assets.
- **Expert Support:** HP's onsite services are carried out by trained professionals who can address a broad range of hardware-related issues, ensuring that each piece of equipment is maintained to HP's high standards.
- **Seamless Service Experience:** When onsite repairs are needed, HP's streamlined process minimizes the interruption to daily operations, ensuring a seamless service experience.
- **Enhanced Productivity:** By providing extended onsite support, HP helps to ensure that technology failures do not impede the City's ongoing work, contributing to higher overall productivity.
- **Protecting Investment:** The upgrade to a 5-year warranty is a strategic decision to safeguard the City's technology investment over a more extended period, ensuring that the devices are not just functional but also performing optimally.

By choosing HP's onsite services, the City of Arvada can trust in reliable, prompt support that is tailored to their specific requirements, ensuring that their workforce remains equipped with functioning technology and can continue delivering services to the community effectively.

VALUE ADD CONCEPTS

DHE Value Add Statement has been specifically designed to provide Arvada with the best service possible.

1) **Local:** DHE is a local sales and service provider in the Denver Metro Area. Our headquarters and warehouses are centrally located in Centennial, Colorado.

- a) Large warehouses that are centrally located near Arvada sites. Our facilities will always maintain the proper stock levels of devices.
- b) Ability to quickly swap any damaged or DOA devices.
- c) Local ability to expedite “rush order requests” or custom requirements.

2) **Local:** DHE is an established Colorado company and has helped serve our local customers for more than 34 years. Our warehouse AND sales office are conveniently located and ready to work with Arvada.

3) **Reliable:** Our company is privately held and self-funded, with no external investors or debt. This allows us to maintain complete control over our operations and make strategic decisions without external pressures. We have a stable financial position and are not subject to any circumstances that could compromise our long-term viability.

4) **Platinum Community Partner:** As a Lenovo, Dell, & HP Community Partner, DHE can maintain direct relationships with the OEM team, allowing us to discuss innovations, product enhancements, and initiatives that will better serve our customers. This prestigious partnership is limited to a select few, and we are proud to be part of this program. Additionally, DHE will have access to a monthly meeting with senior leadership and their design engineers, giving us the opportunity to stay ahead of the curve in terms of product offerings and support

5) **Demos:** DHE is pleased to offer Device Demo units for testing prior to award on all OEM's if required.

6) **Project Management:** DHE provides hands-on project management for workstation device deployment that ensures proper execution of rollouts of any size. Our team has the expertise to plan and coordinate projects from start to finish, ensuring that all aspects of the deployment are effectively managed and executed, minimizing disruptions, and maximizing efficiency..

7) **Free Ecommerce Purchasing Platform:** DHE Computer Systems is pleased to offer an online e-commerce portal that enables the City of Arvada to easily and efficiently make purchases. This user-friendly portal is available at no additional cost and is designed to streamline the procurement process. With this tool, city staff can securely place orders, manage purchase history, and access exclusive online pricing and products, ensuring a smooth transaction from selection to checkout.

8) **Local Service Provider:** DHE is proud to be a Dell, HP & Lenovo Authorized Service Provider, delivering unparalleled device repair services to our Denver Metro Area customers. Our team of experts are highly trained and specialize in a range of device repairs, ensuring that our clients receive the best service possible. The OEM's recognizes our commitment to excellence and often calls on us as a trusted service partner. As part of our dedication to providing exceptional service, DHE is offering our premier repair service and value to the City at no additional cost. Our focus on quality, efficiency, and customer satisfaction means that we will get your devices back up and running quickly, minimizing disruptions to your daily operations. Trust in DHE as your Premier Authorized Service Provider for all your device repair needs.

- a) We also offer a convenient ticketing website that keeps the City informed of the status of ongoing repairs, providing transparency and peace of mind.

9) **Product Roadmap:** We understand the importance of planning and budgeting for device replacements. That's why we're committed to working closely with our OEM partners to provide product roadmaps that give our clients at least 2 months' notice for all device models reaching the end of production or supply. This proactive approach allows for better planning and decision-making when it comes to device upgrades and replacements. Our goal is to provide our clients with the information they need to make informed decisions and ensure a seamless transition to new devices. At DHE,

we prioritize transparency and communication, and we're dedicated to providing exceptional service and support to our clients.

10) **OEM Warranties:** DHE will always choose to sell the **Manufacturer's warranties**. By choosing Lenovo and HP warranties from DHE, Arvada can be confident that they are receiving the best possible service and support for their products. Arvada can trust that the OEM warranties come directly from the original equipment manufacturer (OEM), ensuring that all repairs are made with genuine OEM parts. Third-party warranties may use random or off-brand parts, which can result in subpar performance and potentially even further damage to the device.

OEM warranties also provide a higher level of technical support and expertise, as they have the most comprehensive knowledge and experience with their own products. They have direct access to their engineering teams and can quickly troubleshoot and diagnose any issues that arise.

In addition to the quality of OEM parts, another advantage of OEM warranties over third-party options is the certification and training of technical support staff. With manufacture warranties, you can be confident that the technicians who service your devices have received extensive training directly from Lenovo or HP and are certified to work on their products. On the other hand, third-party technical support providers may not have the same level of training or certification, leaving you unsure of the expertise of the person handling your repairs. It's important to consider the source of technical support when making decisions about device warranties and repairs, as opting for third-party options may not provide the same level of quality and expertise as working directly with the manufacturer.

Overall, OEM warranties offer the highest quality and most comprehensive level of service and support, backed by the expertise and resources of the original equipment manufacturer.

11) **Autopilot Compatibility:** We are pleased to confirm that all devices included in our bid are fully compatible with Windows Autopilot. This means that Arvada can easily and efficiently set up and configure these devices using Autopilot, streamlining the device deployment process, and reducing the time and resources spent on device management. Our team has worked closely with the manufacturers to ensure that all devices meet the necessary

compatibility requirements, providing Arvada with the peace of mind that their technology investment is fully optimized for their needs.

12) Second Layer of Support: DHE is committed to providing the highest level of service and support to the City of Arvada, which is why we are proud to offer a second layer of service support for repairs. Our team of authorized and certified service technicians are not only experts in their field, but they also possess a high level of professionalism and courtesy, ensuring that all service requests are properly followed, tracked, and completed to the City's satisfaction.

With DHE as your local authorized service provider, you can be confident that all repairs will be completed to the highest industry standards using only genuine OEM parts. Our team has the knowledge and experience necessary to troubleshoot and diagnose any issues that arise, and we are always ready to assist the City in any way possible.

At DHE, we understand that every minute of downtime can be costly and disruptive for Arvada, which is why we prioritize fast and efficient service. We are dedicated to minimizing any disruption to the City's operations and ensuring that all repairs are completed in a timely manner.

Choose DHE as your local authorized service provider and experience the peace of mind that comes with knowing that you have a team of certified and experienced professionals standing ready to assist you with any service requests that arise.

13) Community Catalog Purchasing – DHE created a program that allows employees and community members access to purchasing products not typically available in the consumer marketplace. The program aims to provide significant discounts to individuals which will help the save your employees money and support the local Colorado economy. The program will be designed to offer a range of products that we have contracted to Arvada, including notebooks, desktops, workstations, monitors, tablets, and accessories.

DHE's Community Catalog Purchasing creates an opportunity for employees, staff, and Arvada members to access goods at the same discounts the City has.

Optional Value Add Services:

1) **Imaging:** Custom Hard Drive Imaging service that can be used to apply a custom image to all Windows devices. Our Standard Imaging Service transfers your operating system (OS) and/or software settings to your purchased desktops, notebooks, tablets, and other devices. This service deploys a static image that can be combined with pre- and post-imaging tasks to meet your custom requirements for each imaging project.

Our team of experts will work with you to inventory separate computer images based on your requirements and ship all orders with the requested image. As device models change, we will update the image and provide new models for imaging, ensuring that your devices are always up to date.

DHE has worked with many cities throughout the State of Colorado to provide these services. Our experience in the field, combined with our commitment to providing high-quality services, ensures that your City can benefit from the latest technology without any hassle.

Our Custom Hard Drive Imaging service will provide your City with a streamlined imaging process, reducing the time and resources spent on device deployment. We are committed to providing a positive and rewarding work environment that encourages loyalty and low turnover, making our team the greatest asset.

2) **Windows Autopilot:** DHE will offer free Windows Autopilot Consultation and onboarding services for the City. Consultation will provide in-depth information on what autopilot is, how it can be deployed at the factory level and how it can streamline Arvada IT resources.

Autopilot deployment helps entities overcome the challenges of provisioning devices for hybrid learning. Windows Autopilot is a collection of technologies that can be used to set up and pre-configure new devices, making them ready for productive use. Our service will offer consultation and deployment support to organizations, whether they need to upload one device or thousands.

The deployment of new devices can be time-consuming and challenging for IT departments, but Windows Autopilot simplifies the Windows device lifecycle from initial deployment to end of life. It can be used to reduce the

time IT spends on deploying, managing, and retiring devices, reduce infrastructure, and maximize ease of use for all types of end-users.

Our team of experts will work your IT managers to understand their specific needs and requirements and develop a customized solution using Windows Autopilot. We will use the OEM-optimized version of Windows client, which is pre-installed on the device, to avoid the need to maintain custom images and drivers for every device model.

Once the devices are deployed, IT can manage them using various tools such as Microsoft Intune, Windows Update for Business, Microsoft Configuration Manager, and other similar tools.

Our service will ensure that Arvada can maximize the benefits of Windows Autopilot, reduce the time and resources spent on device management, and streamline the device lifecycle process. We are committed to providing a positive and rewarding work environment that encourages loyalty and low turnover, making our team the greatest asset.

DHE can offer Custom Services to ease the City's deployment of technology.

APPENDIX A

VARIATIONS

In response to the solicitation, we acknowledge the requirement to identify any variations from the specifications provided. We have made minor adjustments to the excel spreadsheet by adding additional devices that are essential for our offerings. These variations are clearly documented on a separate sheet to ensure transparency and ease of review.

Additionally, we have created a straightforward and easily digestible pricing sheet that delineates the costs for both HP and Lenovo devices. This is intended to provide a clear and comprehensive understanding of the pricing structure for the products we are offering.

We understand the importance of adhering to the guidelines set forth in the solicitation document. Therefore, all variations and exceptions have been explicitly identified, referencing the applicable sections, page numbers, and details of the variance as required. This approach is to ensure that our submission remains in compliance with the terms of the solicitation and to facilitate a straightforward evaluation process.

Our intent is to provide a proposal that not only meets but exceeds the City's requirements, offering a range of options that cater to the specific needs identified. We believe that our submission, with the noted variations, continues to align with the objectives of the solicitation and offers valuable solutions for the City of Arvada.

REQUIRED VENDOR SUBMITTAL FORM

SUBMITTED BY:

Company Name: DHE Computer Systems, LLC.

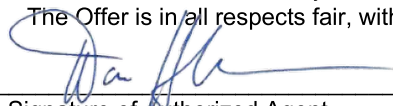
Contact Names: Sales/Customer Service Dan Hammack

Address: 7076 Alton Way, Building C, Centennial, CO. 80112

Phone: (720) 240-4560 Email(s): dan.hammack@dhecs.com

The undersigned hereby affirms that:

- They are a duly authorized agent of the vendor;
- They have read all Terms and Conditions and technical specifications made available in conjunction with this solicitation and fully accepts and acknowledges this offer is consistent with the specifications and terms and conditions, unless specific variations have been clearly and expressly listed in the offer.
- The Offer is in all respects fair, without outside collusion or otherwise illegal action.

By: 	3/5/2024	84-1430017
Signature of Authorized Agent	Date	FEIN
Dan Hammack	CTO	dan.hammack@dhecs.com
Typed/Printed Name of Agent	Title of Agent	Agent email

Type of Business: Corporation State of Incorporation Colorado Partnership (general)
Partnership (limited) Sole Proprietorship Limited Liability Company Other _____

Address of main business office, principal factory, or warehouse if different from above:

7076 Alton Way, Building C, Centennial, CO. 80112

Principal line of business: Technology provider that provides personalized services

Number of years in present business: 35

REFERENCES:

☒ Check here if Firm's standard reference sheet is attached, otherwise, use the space below.

Name: Denver Public Schools Contact Person: Casie Grant

Address: 780 Grant St., Denver, CO. 80203

Telephone No: 720-423-1315 Email: CASANDRA_GENTRY@dpsk12.org

Describe type of work/service performed or items supplied: Complete IT services

Name: Jeffco Public Schools Contact Person: Shawn Rhoades

Address: 809 Quail Street, Lakewood, CO. 80215

Telephone No: 303-982-2404 Email: Shawn.Rhoades@jeffco.k12.com.us

Describe type of work/service performed or items supplied: Complete IT services

Name: City of Lakewood Contact Person: Steve Tuten

Address: 480 S. Allison Parkway, Lakewood, CO. 80226

Telephone No: 303-987-7544 Email: SteTut@lakewood.org

Describe type of work/service performed or items supplied: Complete IT services

PAYMENT TERMS: If the vendor does not accept a percentage discount, the City standard is net thirty (30) days after the date that the City receives an accurate invoice and has accepted the product or service. Payment is the date of the check mailing or date of the credit card transaction.

Discount: % Days, Net: 30 Days, Accept Visa without additional fee? See Attached Doc.

SUBMITTAL CHECKLIST:

Proposals shall be submitted in the order listed below, unless otherwise directed in Administrative Information, with each section clearly identified. **Missing information or required documents may result in submission being deemed non-responsive.**

- ☒ Submit **one** PDF document on-line at BidnetDirect.com (PDF File Name: Company name – Solicitation number) Include the following:
 - ☒ Cover & Executive Summary
 - ☒ Detail Firm's and assigned staff capabilities, experience, qualifications, and compliance status
 - ☒ Details of proposal – proposed services, implementation timeline and project / project management approach
 - ☒ Previous projects of similar size and scope, with references
 - ☒ Customer Support details
 - ☒ Warranty details
 - ☒ This completed and signed Required Vendor Submittal Form
 - ☒ Completed Requirements and Pricing sheets from Attachment A - 2024-25 Workstation Replacement Requirements
- ☒ Proposers must also upload a second file - Attachment A - 2024-25 Workstation Replacement Requirements 1-24 in **Excel** format.

CONFIRM:

- ☒ CONFIDENTIAL information, if any, MUST be stamped as such on each page and submitted separately.
- ☒ VARIATIONS: Checking this box indicates that the vendor has variations to this solicitation. Identify all variations and exceptions to this solicitation on a separate sheet/s of paper. If variations are not stated in the vendor's Offer, it shall be agreed that the vendor's Offer fully complies with all conditions identified in this Solicitation. For each variation listed, reference the applicable section of the solicitation document, the page number, and the variance. Submittal of a Vendor Contract is considered excessive in Variations and may be cause for determining that the Bid/Offer is non-responsive and ineligible for award.
- ☒ Insurance – Checking this box accepts that the insurance requirements listed by the City are acceptable unless listed as a variation.
- ☒ Initial to acknowledge receipt of Addenda, if any: #1 DH #2 DH #3 DH

Price Sheet (ALL)

Lenovo Products									
Part Number	Product Name	Processor	DIMM Memory	Storage	Base Warranty	Device Price	Warranty Uplift		Add On's
12DM541E00	Standard Desktop - M70s Gen 4 i5	13th Generation Intel® Core™ i5-13400 Processor	16 GB DDR4-3200MHz (UDIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 698.50	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00		External Optical Drive - \$35.00
		13th Generation Intel® Core™ i7-13700 vPro® Processor	3200MHz (UDIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00		
		AMD Ryzen™ 5 PRO 5650G Processor	3200MHz (UDIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00		
12DM541F00	Standard Desktop - M70s Gen 4 i7	13th Generation Intel® Core™ i7-13700 vPro® Processor	3200MHz (UDIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 924.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00		External Optical Drive - \$35.00
		AMD Ryzen™ 5 PRO 5650G Processor	3200MHz (UDIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00		
		AMD Ryzen™ 7 PRO 5750G Processor	3200MHz (UDIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00		
11R7548M00	Standard Desktops - M75s AMD R7	AMD Ryzen™ 5 PRO 5650G Processor	3200MHz (UDIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 742.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00		External Optical Drive - \$35.00 External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00
		AMD Ryzen™ 7 PRO 5750G Processor	3200MHz (UDIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00		
		AMD Ryzen™ 7 PRO 5750G Processor	3200MHz (UDIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00		
21H45B4S00	Standard Laptop - L15 Gen 4 i5	13th Generation Intel® Core™ i5-1335U Processor	3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 830.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00		IR Camera - Windows Hello Ready - \$16.50
		AMD Ryzen™ 5 PRO 7530U Processor	3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00		
		AMD Ryzen™ 7 PRO 7530U Processor	3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00		
21H45B4Q00	Standard Laptop - L15 Gen 4 i5 with LTE	13th Generation Intel® Core™ i5-1335U Processor	3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 930.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00 IR Camera - Windows Hello Ready - \$16.50
		AMD Ryzen™ 5 PRO 7530U Processor	3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
		AMD Ryzen™ 7 PRO 7530U Processor	3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
21H45B4R00	Standard Laptop - L15 Gen 4 i7 Intel	13th Generation Intel® Core™ i7-1355U Processor	3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 1,005.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00 IR Camera - Windows Hello Ready - \$16.50
		AMD Ryzen™ 5 PRO 7530U Processor	3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
		AMD Ryzen™ 7 PRO 7530U Processor	3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
21H45B4CT0	Standard Laptop - L15 Gen 4 i7 Intel with LTE	13th Generation Intel® Core™ i7-1355U Processor	3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 1,105.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00 IR Camera - Windows Hello Ready - \$16.50
		AMD Ryzen™ 5 PRO 7530U Processor	3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
		AMD Ryzen™ 7 PRO 7530U Processor	3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
21H853EB00	Standard Laptop - L15 Gen 4 R5 AMD	AMD Ryzen™ 5 PRO 7530U Processor	3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 765.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00 IR Camera - Windows Hello Ready - \$16.50
		AMD Ryzen™ 5 PRO 7530U Processor	3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
		AMD Ryzen™ 5 PRO 7530U Processor	3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
21H853E900	Standard Laptop - L15 Gen 4 R5 AMD with LTE	AMD Ryzen™ 5 PRO 7530U Processor	3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 865.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00 IR Camera - Windows Hello Ready - \$16.50
		AMD Ryzen™ 5 PRO 7530U Processor	3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
		AMD Ryzen™ 5 PRO 7530U Processor	3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
21H853EA00	Standard Laptop - L15 Gen 4 R7 AMD	AMD Ryzen™ 7 PRO 7730U Processor	3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 870.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00 IR Camera - Windows Hello Ready - \$16.50
		AMD Ryzen™ 7 PRO 7730U Processor	3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
		AMD Ryzen™ 7 PRO 7730U Processor	3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
21H853ECT0	Standard Laptop - L15 Gen 4 R7 AMD with LTE	AMD Ryzen™ 7 PRO 7730U Processor	3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 970.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00 IR Camera - Windows Hello Ready - \$16.50
		AMD Ryzen™ 7 PRO 7730U Processor	3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
		AMD Ryzen™ 7 PRO 7730U Processor	3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
21FKS4RW00	Conversion Laptop - L13 Gen 4 Yoga i5 Intel	13th Generation Intel® Core™ i5-1335U Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 1,035.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00 IR Camera - Windows Hello Ready - \$16.50
		13th Generation Intel® Core™ i5-1335U Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
		13th Generation Intel® Core™ i5-1335U Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
21FKS4RX00	Conversion Laptop - L13 Gen 4 Yoga i5 Intel (with LTE)	13th Generation Intel® Core™ i5-1335U Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 1,160.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00 IR Camera - Windows Hello Ready - \$16.50
		13th Generation Intel® Core™ i5-1335U Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
		13th Generation Intel® Core™ i5-1335U Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
21FKS4RV00	Conversion Laptop - L13 Gen 4 Yoga i7 Intel L13	13th Generation Intel® Core™ i7-1365U vPro® Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 1,310.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00 IR Camera - Windows Hello Ready - \$16.50
		13th Generation Intel® Core™ i7-1365U vPro® Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
		13th Generation Intel® Core™ i7-1365U vPro® Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
21FKS4RCT0	Conversion Laptop - L13 Gen 4 Yoga i7 Intel L13 (with LTE)	13th Generation Intel® Core™ i7-1365U vPro® Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 1,435.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00 Integrated fingerprint scanner, IR Camera - Windows Hello Ready - \$16.50
		13th Generation Intel® Core™ i7-1365U vPro® Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
		13th Generation Intel® Core™ i7-1365U vPro® Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
21FSS1WM00	Conversion Laptop - L13 Gen 4 Yoga R5 AMD	AMD Ryzen™ 5 PRO 7530U Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 945.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00 Integrated fingerprint scanner, IR Camera - Windows Hello Ready - \$16.50
		AMD Ryzen™ 5 PRO 7530U Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
		AMD Ryzen™ 5 PRO 7530U Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
21FSS1WN00	Conversion Laptop - L13 Gen 4 Yoga R5 AMD (with LTE)	AMD Ryzen™ 5 PRO 7530U Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 1,070.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00 Integrated fingerprint scanner, IR Camera - Windows Hello Ready - \$16.50
		AMD Ryzen™ 5 PRO 7530U Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		
		AMD Ryzen™ 5 PRO 7530U Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal			3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00		

21FSS1WL00	Conversion Laptop - L13 Gen 4 Yoga R7 AMD	AMD Ryzen™ 7 PRO 7730U Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 1,040.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00	External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00 Integrated fingerprint scanner, IR Camera - Windows Hello Ready - \$16.50
21FSS1WCT0	Conversion Laptop - L13 Gen 4 Yoga R7 AMD	AMD Ryzen™ 7 PRO 7730U Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 1,165.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00	External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00 Integrated fingerprint scanner, IR Camera - Windows Hello Ready - \$16.50
30GUSA1Y00	High Performance Desktop - P3 Tower (NVIDIA RTX A2000 12GB GDDR6 4mDP GFX)	13th Generation Intel® Core™ i7-13700 vPro® Processor	16 GB DDR4-3200MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	3 Year On-site	\$ 1,705.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00	External Optical Drive - \$35.00 Upgrade to Bluetooth / AX 6 Intel combo Module - \$15.00

HP Products								
Part Number	Product Name	Processor	DIMM Memory	Storage	Base Warranty	Device Price	Warranty Uplift	Add On's
7E9G9AV	Standard Desktop - HP Elite SFF 600 G9	Intel Core i5-13500 2.50G 14C 65W CPU	16GB (1x16GB) DDR5 4800 UDIMM Mem	512GB PCIe NVMe TLC SSD	HP 3 Year Next Business Day Onsite DT HW Supp	\$ 799.00	5Y Onsite upgrade from 3Y Onsite - \$81	Option 3: Additional price for built-in privacy screen - 3M Privacy screenprotector add on - \$41.00 Option 4: Additional price for Verizon-compatible LTE modem - \$105.00 Option 5: Additional price for external optical drive - \$35.00
7E120AV	Standard Desktop - HP Elite SFF 600 G9	Intel Core i7-13700 2.10G 16C 65W CPU	16GB (1x16GB) DDR5 4800 UDIMM Mem	512GB PCIe NVMe TLC SSD	HP 3 Year Next Business Day Onsite DT HW Supp	\$ 946.00	5Y Onsite upgrade from 3Y Onsite - \$81	Option 3: Additional price for built-in privacy screen - 3M Privacy screenprotector add on - \$41.00 Option 4: Additional price for Verizon-compatible LTE modem - \$105.00 Option 5: Additional price for external optical drive - \$35.00
4Y0H8AV	High-Performance Desktop - Z2 Tower G9 (NVIDIA RTX A2000 12GB GDDR6 4mDP GFX)	Intel Core i7-13700K 3.40G 16C 125W CPU	32GB (2x16GB) DDR5 4800 UDIMM ECC Mem	512GB PCIe NVMe TLC SSD	HP 3 Year Next Business Day Onsite DT HW Supp	\$ 1,879.00	5Y Onsite upgrade from 3Y Onsite - \$95	Option 3: Additional price for built-in privacy screen - 3M Privacy screenprotector add on - \$41.00 Option 4: Additional price for Verizon-compatible LTE modem - \$105.00 Option 5: Additional price for external optical drive - \$35.00
736W6AV	Standard Laptop - HP EliteBook 650 G10	Intel Core i5-13500	16GB (1x16GB) DDR4 3200	512GB PCIe NVMe Value SSD	HP 3 Year Next Business Day Onsite DT HW Supp	\$ 957.00	5Y Onsite upgrade from 3Y Onsite - \$233.28	Option 3: Additional price for built-in privacy screen - 3M Privacy screenprotector add on - \$41.00 Option 4: Additional price for Verizon-compatible LTE modem - \$105.00 Option 5: Additional price for external optical drive - \$35.00
736Y4AV	Standard Laptop - HP EliteBook 650 G10	Intel Core i7-1365U	16GB (1x16GB) DDR4 3200	512GB PCIe NVMe Value SSD	HP 3 Year Next Business Day Onsite DT HW Supp	\$ 1,169.00	5Y Onsite upgrade from 3Y Onsite - \$233.28	Option 3: Additional price for built-in privacy screen - 3M Privacy screenprotector add on - \$41.00 Option 4: Additional price for Verizon-compatible LTE modem - \$105.00 Option 5: Additional price for external optical drive - \$35.00
6V439AV	Conversion Laptop - HP EliteBook x360 830 G10	Intel Core i5-13500	16GB (1x16GB) DDR4 3200	512GB PCIe NVMe Value SSD	HP 3 Year Next Business Day Onsite DT HW Supp	\$ 1,219.00	5Y Onsite upgrade from 3Y Onsite - \$262.00	Option 3: Additional price for built-in privacy screen - 3M Privacy screenprotector add on - \$41.00 Option 4: Additional price for Verizon-compatible LTE modem - \$105.00 Option 5: Additional price for external optical drive - \$35.00
6V440AV	Conversion Laptop - HP EliteBook x360 830 G10	Intel Core i5-13500	32 GB DDR4 3200	512GB PCIe NVMe Value SSD	HP 3 Year Next Business Day Onsite DT HW Supp	\$ 1,320.00	5Y Onsite upgrade from 3Y Onsite - \$262.00	Option 3: Additional price for built-in privacy screen - 3M Privacy screenprotector add on - \$41.00 Option 4: Additional price for Verizon-compatible LTE modem - \$105.00 Option 5: Additional price for external optical drive - \$35.00
6V447AV	Conversion Laptop - HP EliteBook x360 830 G10	Intel Core i7-1365U	16GB (1x16GB) DDR4 3200	512GB PCIe NVMe Value SSD	HP 3 Year Next Business Day Onsite DT HW Supp	\$ 1,346.00	5Y Onsite upgrade from 3Y Onsite - \$262.00	Option 3: Additional price for built-in privacy screen - 3M Privacy screenprotector add on - \$41.00 Option 4: Additional price for Verizon-compatible LTE modem - \$105.00 Option 5: Additional price for external optical drive - \$35.00
6V447AV	Conversion Laptop - HP EliteBook x360 830 G10	Intel Core i7-1365U	32 GB DDR4 3200	512GB PCIe NVMe Value SSD	HP 3 Year Next Business Day Onsite DT HW Supp	\$ 1,446.00	5Y Onsite upgrade from 3Y Onsite - \$262.00	Option 3: Additional price for built-in privacy screen - 3M Privacy screenprotector add on - \$41.00 Option 4: Additional price for Verizon-compatible LTE modem - \$105.00 Option 5: Additional price for external optical drive - \$35.00

ID	Priority	Component	Description	Conformance	Vendor Comments	Score
Standard Desktop Requirements						
SDR1	Must have	Processor	Alternative 1: i5 Intel 13th-Gen 10-core Processor @2.5GHz + for P-Cores -20 mb cache-Integrated graphics Alternative 2: i7 Intel 13th-Gen 16-core Processor @2.1GHz + for P-Cores -30 mb cache-Integrated graphics	Yes		24
SDR2	Must have	Processor	Cores -30 mb cache-Integrated graphics	Yes		24
SDR3	Must have	Memory	16GB DDR4 with room for expansion	Yes		24
SDR4	Must have	Hard Drive	512GB or greater Solid State Drive	Yes		24
SDR5	Must have	Display Port	DPI or HDMI	Yes	HDMI	24
SDR6	Should have	Monitors	Capable of supporting 3 monitors	Yes		12
SDR7	Must have	Ports	4 USB Ports or greater	Yes		24
SDR8	Must have	Ports	RJ45	Yes		24
SDR9	Should have	Ports	USB-C	Yes		12
SDR10	Must have	Ports	Headphone output / Microphone input	Yes		24
SDR11	Must have	Operating System	Windows 11 Pro 64-bit	Yes		24
SDR12	Should have	Form Factor	Small Form Factor	Yes		12
SDR13	Could have	WiFi	Option 1: 802.11ax Connectivity (price separately)	Yes	Priced on the pricing tab	4
SDR14	Could have	Drive option	Option 2: External Optical Drive (price separately)	Yes	Priced on the pricing tab	4
SDR15	Should have	Network	Bluetooth 5.3 or higher	Yes		12
SDR16	Could have	Optional vendor recommendation	Optional vendor recommendation	Yes	On-Site desktop deployment and old asset removal and data destruction is available from DHE as a value add option, inquire if interested	4
SDR17	Could have	Optional	Optional- capability to use a VR headset as a monitor	Yes	Nvidia GPU required to be added to the desktop - Additional information on VR standards is required	4
Standard Laptop Requirements						
SLR1	Must have	Processor	Alternative 1: i5 Intel 13th-Gen 12-core Processor @ 2.0 GHz + - 18 mb cache Intel Iris Xe Graphics eligible Alternative 2: i7 Intel 13th-Gen 14 core Processor @ 2.1 GHz + - 24 mb cache Intel Iris Xe Graphics eligible	Yes		24
SLR2	Must have	Processor	cache Intel Iris Xe Graphics eligible	Yes		
SLR3	Must have	Memory	16GB DDR4, room for expansion	Yes		24
SLR4	Must have	Memory option	Option 1: 32GB DDR4 (price separately from 16GB)	Yes		24
SLR5	Must have	Hard Drive	Solid State Drive, 512GB or greater	Yes		24
SLR6	Must have	Display	15" Class LED Anti-glare	Yes		24
SLR7	Must have	Network	Wake-on-LAN and PXE capable	Yes		24
SLR8	Must have	Network	Intel 802.11 ac/ax	Yes		24
SLR9	Must have	Network	Bluetooth 5.3 or higher	Yes		24
SLR10	Must have	Network	RJ45 port or adapter	Yes		24
SLR11	Must have	Speakers	Integrated, stereo	Yes		24
SLR12	Must have	Keyboard	Integrated	Yes		24
SLR13	Must have	Mouse / Trackpad	Integrated	Yes		24
SLR14	Must have	Ports	1-2 USB Ports	Yes		24
SLR15	Must have	Ports	1 USB-C	Yes		24
SLR16	Must have	Ports	DPI or HDMI	Yes	HDMI	24
SLR17	Must have	Ports	Headphone output / Microphone input	Yes		24
SLR18	Must have	Operating System	Windows 11 Pro 64-bit	Yes		24
SLR19	Must have	Docking Station Option	MAC Address Pass-Through	Yes		24
SLR20	Must have	Webcam	Built-in webcam with mic	Yes		
SLR21	Could have	Keypad, larger screen	Option 2: 10-key numeric keypad, larger screen (price separately)	Yes	All proposed L15 Laptops Include a 10 Key Numeric Keypad	4
SLR22	Could have	Privacy screen	Option 3: Built-in privacy screen (price separately)	Yes	Can be ordered at anytime and added to devices	4
SLR23	Must have	Cellular add-on option	Option 4: Verizon LTE cellular modem (price separately)	Yes	Options included on cost tab	24
SLR24	Should have	Optical Drive option	Option 5: DVD Writer (price separately)	Yes	Can be ordered at anytime and added to devices	12
SLR25	Must have	Biometric	Option 6: Integrated fingerprint reader, Windows Hello compatible	Yes	FHD IR Camera and Fingerprint Option provided	12
SLR26	Could have	Optional vendor recommendation	Optional vendor recommendation	Yes	On-Site desktop deployment and old asset removal and data destruction is available from DHE as a value add option, inquire if interested	4
Conversion Laptop Requirements						
CLR1	Must have	Processor	Alternative 1: i5 Intel 13th-Gen 12-core Processor @ 2.0 GHz - 18 mb cache Intel Iris Xe Graphics eligible	Yes		24

Lenovo P	Must have	Processor	Alternative 2: i7 Intel 13th-Gen 14 core Processor @ 2.1 GHz + - 24 mb cache Intel Iris Xe Graphics eligible	Yes		
CLR3	Must have	Memory	16GB DDR4, room for expansion	Yes		24
CLR4	Must have	Memory option	Option 1: 32GB DDR4 (price separately from 16GB)	Yes		24
CLR5	Must have	Hard Drive	Solid State Drive, 512GB or greater	Yes		24
CLR6	Must have	Display	11" - 15" LED Anti-glare / Touch Model	Yes		24
CLR7	Must have	Network	Wake-on-LAN and PXE capable	Yes		24
CLR8	Must have	Network	Intel 802.11 ac/ax	Yes		24
CLR9	Must have	Network	Bluetooth 5.3 or higher	Yes		24
CLR10	Must have	Network	RJ45 port or adapter	Yes		24
CLR11	Must have	Speakers	Integrated, stereo	Yes		24
CLR12	Must have	Keyboard	Integrated	Yes		24
CLR13	Must have	Mouse / Trackpad	Integrated	Yes		24
CLR14	Must have	Ports	DPI or HDMI	Yes		24
CLR15	Must have	Ports	Headphone output / Microphone input	Yes		24
CLR16	Must have	Battery	6-Cell Long Life Battery	No		0
CLR17	Must have	Operating System	Windows 11 Pro 64-bit	Yes		24
CLR18	Must have	Docking Station Option	MAC Address Pass-Through	Yes		24
CLR19	Should have	Ports	3 or more USB ports	Yes		12
CLR20	Must have	Webcam	Built-in webcam with mic	Yes		
CLR21	Must have	Cellular add-on option	Option 2: Verizon LTE cellular modem (price separately)	Yes	Options included on cost tab	24
CLR22	Should have	Optical Drive option	Option 3: DVD Writer (price separately)	Yes	Can be ordered at anytime and added to devices	12
CLR23	Must have	Biometric	Option 4: Integrated fingerprint reader, Windows Hello compatible	Yes	FHD IR Camera and Fingerprint Option provided	24
CLR24	Could have	Optional vendor recommendation	Optional vendor recommendation	Yes	On-Site desktop deployment and old asset removal and data destruction is available from DHE as a value add option, inquire if interested	4

High-Performance Desktop Requirements

HDR1	Must have	Processor	Intel Core Processor i7 or i9, 3+ GHz (base), 4+ GHz (turbo), 10+ cores	Yes	i7 Configuration Proposed	24
HDR2	Must have	Memory	32GB with room for expansion	Yes		24
HDR3	Must have	Hard Drive	1st Drive - 256GB or greater			24
HDR4	Must have	Video Card	2nd Drive - 500GB or greater, Solid State Drives	Yes	PCIe Gen4 SSD for both drives	24
HDR5	Should have	Display Port	3840 x 2160 (4K) or greater; 12 GB VRAM or greater; Pixel Shader 3.0 or greater; DirectX 12-capable	Yes	NVIDIA RTX A2000 12GB GDDR6 4mDP GFX	12
HDR6	Must have	Monitors	DPI or HDMI	Yes		24
HDR7	Must have	Network	Capable of supporting 4 monitors	Yes		24
HDR8	Must have	Ports	Wake-on-LAN and PXE capable	Yes		24
HDR9	Must have	Ports	4 USB Ports or greater	Yes		24
HDR10	Must have	Ports	RJ45	Yes		24
HDR11	Must have	Operating System	Headphone output / Microphone input	Yes		24
HDR12	Could have	Optical Drive	Windows 11 Pro 64-bit, version 1809 or above	Yes	Can be ordered at anytime and added to devices	4
HDR13	Could have	Network	Option 1: DVD writer (price separately)	Yes	Can be added to device with Bluetooth / AX 6 Wireless Combo Module at time of purchase	
HDR14	Could have	Optional vendor recommendation	Bluetooth 5.3 or higher	Qualified Yes		
					On-Site desktop deployment and old asset removal and data destruction is available from DHE as a value add option, inquire if interested	4

Hardware Requirements

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ID	Priority	Component	Description	Conformance	Vendor Comments	Score
Standard Desktop Requirements						
SDR1	Must have	Processor	Alternative 1: i5 Intel 13th-Gen 10-core Processor @2.5GHz + for P-Cores -20 mb cache-Integrated graphics Alternative 2: i7 Intel 13th-Gen 16-core Processor @2.1GHz + for P-Cores -30 mb cache-Integrated graphics	Yes	HDMI & Display Ports are included	24
SDR2	Must have	Processor		Yes		24
SDR3	Must have	Memory	16GB DDR4 with room for expansion	Yes		24
SDR4	Must have	Hard Drive	512GB or greater Solid State Drive	Yes		24
SDR5	Must have	Display Port	DPI or HDMI	Yes		24
SDR6	Should have	Monitors	Capable of supporting 3 monitors	Yes		12
SDR7	Must have	Ports	4 USB Ports or greater	Yes		24
SDR8	Must have	Ports	RJ45	Yes		24
SDR9	Should have	Ports	USB-C	Yes		12
SDR10	Must have	Ports	Headphone output / Microphone input	Yes		24
SDR11	Must have	Operating System	Windows 11 Pro 64-bit	Yes		24
SDR12	Should have	Form Factor	Small Form Factor	Yes		12
SDR13	Could have	WiFi	Option 1: 802.11ax Connectivity (price separately)	Yes	HP automatically included 802.11ax connectivity with each desktop configuration	4
SDR14	Could have	Drive option	Option 2: External Optical Drive (price separately)	Yes	By adding the option LG USB 3.0 DVD optical Drive	4
SDR15	Should have	Network	Bluetooth 5.3 or higher	Yes		12
SDR16	Could have	Optional vendor recommendation	Optional vendor recommendation	Yes	On-Site desktop deployment and old asset removal and data destruction is available from DHE as a value add option, inquire if interested	4
SDR17	Could have	Optional	Optional- capability to use a VR headset as a monitor	Yes	Yes, but requires AMD or Nvidia GPU to be added to the desktop - Additional information on VR standards is required	4
Standard Laptop Requirements						
SLR1	Must have	Processor	Alternative 1: i5 Intel 13th-Gen 12-core Processor @ 2.0 GHz + - 18 mb cache Intel Iris Xe Graphics eligible Alternative 2: i7 Intel 13th-Gen 14 core Processor @ 2.1 GHz + - 24 mb cache Intel Iris Xe Graphics eligible	Yes	Can be ordered at anytime and added to devices Must be ordered at time of purchase as the device includes the proper WWAN hardware with antenna kit. Can be ordered at anytime and added to devices All Laptop configurations include this option	24
SLR2	Must have	Processor		Yes		
SLR3	Must have	Memory	16GB DDR4, room for expansion	Yes		24
SLR4	Must have	Memory option	Option 1: 32GB DDR4 (price separately from 16GB)			
SLR5	Must have	Hard Drive	Solid State Drive, 512GB or greater	Yes		24
SLR6	Must have	Display	15" Class LED Anti-glare	Yes		24
SLR7	Must have	Network	Wake-on-LAN and PXE capable	Yes		24
SLR8	Must have	Network	Intel 802.11 ac/ax	Yes		24
SLR9	Must have	Network	Bluetooth 5.3 or higher	Yes		24
SLR10	Must have	Network	RJ45 port or adapter	Yes		24
SLR11	Must have	Speakers	Integrated, stereo	Yes		24
SLR12	Must have	Keyboard	Integrated	Yes		24
SLR13	Must have	Mouse / Trackpad	Integrated	Yes		24
SLR14	Must have	Ports	1-2 USB Ports	Yes		24
SLR15	Must have	Ports	1 USB-C	Yes		24
SLR16	Must have	Ports	DPI or HDMI	Yes		24
SLR17	Must have	Ports	Headphone output / Microphone input	Yes		24
SLR18	Must have	Operating System	Windows 11 Pro 64-bit	Yes		24
SLR19	Must have	Docking Station Option	MAC Address Pass-Through	Yes		24
SLR20	Must have	Webcam	Built-in webcam with mic	Yes		
SLR21	Could have	Keypad, larger screen	Option 2: 10-key numeric keypad, larger screen (price separately)	Yes		4
SLR22	Could have	Privacy screen	Option 3: Built-in privacy screen (price separately)	Yes		4
SLR23	Must have	Cellular add-on option	Option 4: Verizon LTE cellular modem (price separately)	Yes		24
SLR24	Should have	Optical Drive option	Option 5: DVD Writer (price separately)	Yes		12
SLR25	Must have	Biometric	Option 6: Integrated fingerprint reader, Windows Hello compatible	Yes		2
SLR26	Could have	Optional vendor recommendation	Optional vendor recommendation	Yes	On-Site desktop deployment and old asset removal and data destruction is available from DHE as a value add option, inquire if interested	4
Conversion Laptop Requirements						

CLR1	Must have	Processor	Alternative 1: i5 Intel 13th-Gen 12-core Processor @ 2.0 GHz - 18 mb cache Intel Iris Xe Graphics eligible	Yes		24
Lenovo P	Must have	Processor	Alternative 2: i7 Intel 13th-Gen 14 core Processor @ 2.1 GHz + - 24 mb cache Intel Iris Xe Graphics eligible	Yes		
CLR3	Must have	Memory	16GB DDR4, room for expansion	Yes		24
CLR4	Must have	Memory option	Option 1: 32GB DDR4 (price separately from 16GB)			
CLR5	Must have	Hard Drive	Solid State Drive, 512GB or greater	Yes		24
CLR6	Must have	Display	11" - 15" LED Anti-glare / Touch Model	Yes		24
CLR7	Must have	Network	Wake-on-LAN and PXE capable	Yes		24
CLR8	Must have	Network	Intel 802.11 ac/ax	Yes		24
CLR9	Must have	Network	Bluetooth 5.3 or higher	Yes		24
CLR10	Must have	Network	RJ45 port or adapter	Yes		24
CLR11	Must have	Speakers	Integrated, stereo	Yes		24
CLR12	Must have	Keyboard	Integrated	Yes		24
CLR13	Must have	Mouse / Trackpad	Integrated	Yes		24
CLR14	Must have	Ports	DPI or HDMI	Yes		24
CLR15	Must have	Ports	Headphone output / Microphone input	Yes		24
CLR16	Must have	Battery	6-Cell Long Life Battery	No		0
CLR17	Must have	Operating System	Windows 11 Pro 64-bit	Yes		24
CLR18	Must have	Docking Station Option	MAC Address Pass-Through	Yes		24
CLR19	Should have	Ports	3 or more USB ports	Yes		12
CLR20	Must have	Webcam	Built-in webcam with mic	Yes		
CLR21	Must have	Cellular add-on option	Option 2: Verizon LTE cellular modem (price separately)	Yes	Must be ordered at time of purchase as the device includes the proper WWAN hardware with antenna kit.	24
CLR22	Should have	Optical Drive option	Option 3: DVD Writer (price separately)	Yes	Can be ordered at anytime and added to devices	12
CLR23	Must have	Biometric	Option 4: Integrated fingerprint reader, Windows Hello compatible	Yes	All Laptop configurations include this option	24
CLR24	Could have	Optional vendor recommendation	Optional vendor recommendation	Yes	On-Site desktop deployment and old asset removal and data destruction is available from DHE as a value add option, inquire if interested	4

High-Performance Desktop Requirements

HDR1	Must have	Processor	Intel Core Processor i7 or i9, 3+ GHz (base), 4+ GHz (turbo), 10+ cores	Yes	i7 Configuration Proposed	24
HDR2	Must have	Memory	32GB with room for expansion 1st Drive - 256GB or greater			
HDR3	Must have	Hard Drive	2nd Drive - 500GB or greater, Solid State Drives 3840 x 2160 (4K) or greater; 12 GB VRAM or greater; Pixel Shader 3.0 or greater; DirectX 12-capable	Yes	PCIe Gen4 SSD for both drives	24
HDR4	Must have	Video Card	DP or HDMI	Yes	NVIDIA RTX A2000 12GB GDDR6 4mDP GFX	24
HDR5	Should have	Display Port	Capable of supporting 4 monitors	Yes	DP	12
HDR6	Must have	Monitors	Wake-on-LAN and PXE capable	Yes		24
HDR7	Must have	Network	4 USB Ports or greater	Yes		24
HDR8	Must have	Ports	RJ45	Yes		24
HDR9	Must have	Ports	Headphone output / Microphone input	Yes		24
HDR10	Must have	Ports	Windows 11 Pro 64-bit, version 1809 or above	Yes		24
HDR11	Must have	Operating System	Option 1: DVD writer (price separately)	Yes	Can be ordered at anytime and added to devices Can be added to device with Bluetooth / AX 6 Wireless Combo Module at time of purchase	4
HDR12	Could have	Optical Drive				
HDR13	Could have	Network	Bluetooth 5.3 or higher	Yes		
HDR14	Could have	Optional vendor recommendation	Optional vendor recommendation	Yes	On-Site desktop deployment and old asset removal and data destruction is available from DHE as a value add option, inquire if interested	4

Hardware Requirements

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Vendor Name:	DHE Computer Systems, LLC.
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Standard Desktop Pricing

Description/Brand/SKU or Part Number	Unit Price
HP Elite SFF 600 G9 i5 # 7E9G9AV	\$ 799.00
HP Elite SFF 600 G9 i7 # 7E1Z0AV	\$ 946.00
Option 1: Additional price for External Optical Drive - LG USB 3.0	\$ 35.00
Option 2: Additional price for 802.11ax connectivity	Included with Device

Standard Laptop Pricing

Description/Brand/SKU or Part Number	Unit Price
HP EliteBook 650 G10 i5 #736W6AV	\$ 957.00
HP EliteBook 650 G10 i7 #736Y4AV	\$ 1,169.00
Option 1: Additional price for 32GB RAM total	\$ 79.00
Option 2: Additional price for integrated 10-key numeric keypad, larger screen	Included with Device
Option 3: Additional price for built-in privacy screen - 3M Privacy screenprotector add on	\$ 41.00
Option 4: Additional price for Verizon-compatible LTE modem	\$ 105.00
Option 5: Additional price for external optical drive	\$ 35.00
Option 6: Additional price for integrated fingerprint scanner (Windows Hello Ready)	Included with Device

Conversion Laptop Pricing

Description/Brand/SKU or Part Number	Unit Price
HP EliteBook x360 830 G10 i5 #6V439AV	\$ 1,219.00
HP EliteBook x360 830 G10 i7 # 6V447AV	\$ 1,391.00
EliteBook x360 830 G10 #6V440AV	\$ 1,326.00
EliteBook x360 830 G10 #6V448AV	\$ 1,446.00
Option 2: Additional price for Verizon-compatible LTE modem	\$ 105.00
Option 3: Additional price for external optical drive	\$ 35.00
Option 4: Additional price for integrated fingerprint scanner (Windows Hello Ready)	Included with Device

High-Performance Desktop Pricing

Description/Brand/SKU or Part Number	Unit Price
Z2 Tower G9 # 4Y0H8AV	\$ 1,879.00
Option 1: Additional price for DVD Writer	\$ 35.00

Vendor Name:	DHE Computer Systems, LLC.
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Standard Desktop Pricing

Description/Brand/SKU or Part Number	Unit Price
Lenovo M70s Desktop i5 #12DMS41E00	\$ 698.50
Lenovo M75s Desktop AMD R5 #11R7S4BM00	\$ 644.00
Lenovo M75s Desktop AMD R7 #11R7S4BN00	\$ 742.00
Lenovo M70s Desktop i7 # 12DMS41F00	\$ 924.00
Option 1: Additional price for External Optical Drive	\$ 35.00
Option 2: Additional price for 802.11ax connectivity (Includes Bluetooth)	\$ 15.00
Option 3: Upgrade from 3YR On-site to 5YR On-site warranty	\$ 59.00
Option 4: Upgrade to 3YR Keep your drive warranty	\$ 13.50
Option 5: Upgrade to 5YR Keep your drive warranty	\$ 18.00

Standard Laptop Pricing

Description/Brand/SKU or Part Number	Unit Price
Lenovo L15 Gen 4 Intel i5 #21H4SB4S00	\$ 830.00
Lenovo Thinkpad L15 AMD R5 # 21H8S3EB00	\$ 765.00
Lenovo Thinkpad L15 Gen 4 Intel i7 # 21H4SB4R00	\$ 1,005.00
Lenovo Thinkpad L15 AMD R7 # 21H8S3EA00	\$ 870.00
Option 1: Additional price for 32GB RAM total	\$ 79.00
Option 2: Additional price for integrated 10-key numeric keypad, larger screen	Included
Option 3: Additional price for built-in privacy screen	\$ 39.00
L15 i5 #21H4SB4Q00 (LTE WWAN Ready Models)	\$ 930.00
L15 AMD R5 # 21H8S3E90 (LTE WWAN Ready Models)	\$ 865.00
Option 4: Additional price for external optical drive	\$ 35.00
Option 5: Additional price for integrated fingerprint scanner, IR Camera - Windows Hello Ready	\$ 16.50
Option 6: Upgrade to 3YR Keep your drive warranty	\$ 13.50
Option 7: Upgrade to 5YR Keep your drive warranty	\$ 18.00
Option 8: Upgrade to LTE Verizon WWAN on Intel i7 and Ryzen 7 Models	\$ 100.00
Option 9: 3 Year Sealed battery replacement	\$ 25.00
Option 10: 4 Year Sealed battery replacement (5 YR not available)	\$ 66.00

Conversion Laptop Pricing

Description/Brand/SKU or Part Number	Unit Price
L13 Yoga G4 i5 # 21FKS4RW00	\$ 1,035.00
Lenovo L13 Yoga AMD R5 # 21FSS1WM00	\$ 945.00
L13 Yoga G4 i7 # 21FKS4RV00	\$ 1,310.00
L13 Yoga AMD R7 # 21FSS1WL00	\$ 1,040.00
Option 1: Additional price for 32GB RAM total	\$ 99.00
L13 Yoga G4 i5 # 21FKS4RX00 (LTE WWAN Ready Models)	\$ 1,160.00
L13 Yoga AMD R5 # 21FSS1WN00 (LTE WWAN Ready Models)	\$ 1,070.00
Option 2: Additional price for external optical drive	\$ 35.00
Option 3: Additional price for integrated fingerprint scanner, IR Camera - Windows Hello Ready	\$ 16.50
Option 4: Upgrade to 3YR Keep your drive warranty	\$ 13.50
Option 5: Upgrade to 5YR Keep your drive warranty	\$ 18.00
Option 6: Upgrade to LTE Verizon WWAN on Intel i7 and Ryzen 7 Models	\$ 125.00
Option 7: 3 Year Sealed battery replacement	\$ 25.00
Option 8: 4 Year Sealed battery replacement (5 YR not available)	\$ 66.00

High-Performance Desktop Pricing

Description/Brand/SKU or Part Number	Unit Price
Lenovo P3 Tower # 30GUSA1Y00	\$ 1,705.00
Option 1: Additional price for DVD Writer	\$ 35.00
Option 2: Upgrade from 3YR On-site to 5YR On-site warranty	\$ 59.00
Option 3: Upgrade to 3YR Keep your drive warranty	\$ 13.50
Option 4: Upgrade to 5YR Keep your drive warranty	\$ 18.00
Option 5: Upgrade to Bluetooth / AX 6 Intel combo Module	\$ 15.00

ID	Priority	Component	Description	Conformance	Vendor Comments	Score
Vendor Requirements						
Warranty						
VR1	Must have	Standard Desktop Hardware	5 year next business day on-site (City does not ship)	Yes	Uplift SKU and Price provided	24
VR2	Must have	Standard Laptop Hardware (excluding battery)	5 year next business day on-site (City does not ship)	Yes	Uplift SKU and Price provided	24
VR3	Must have	Standard Laptop Battery	3 year or better next business day on-site (City does not ship)	Yes	Included by Default on all proposed devices (HP & Lenovo)	24
Support						
VR4	Must have	Technical support availability and location	Telephone and web-based support in North America, available weekdays 8:00 AM - 5:00 PM Mountain Time	Yes	DHE is an Authorized HP and Lenovo Warranty repair center, all devices include an OEM warranty, but you have a local support resource with DHE that you can utilize at any point during our contract.	24
VR5	Must have	Escalation options	Defined escalation process for issues with technical support	Yes	Initially request service from OEM using standard support options. If support provided by the OEM does not meet SLA of a next business day resolution, contact DHE by emailing service@dhecs.com or by calling 303-290-6050 and ask for Sterling Leve - Technical Service manager for DHE	24
VR6	Must have	End-of-Life and Replacement	Defined process for notification of EOL and replacement models	Yes	DHE typically has quarterly in person or virtual meetings to discuss device transitions. The City of Arvada will have 30 days advance notice of any products that are going EOL and require a replacement	24
VR7	Must have	Software updates	Defined process for obtaining driver and other software updates	Yes	All drivers packages and updates are available on the OEM's website. This includes Bios, Firmware and driver updates	24
VR8	Should have	Repair technicians	Repair technicians are your employees rather than third-party contractors	Yes	DHE has 15 dedicated, certified HP and Lenovo technicians who reside in Colorado available to support the City of Arvada. Providing on-site next business services whenever needed.	12
VR9	Should have	Repair certification	Ability to become self-certified for repairs if needed	Yes	DHE offers an onboarding and training program to enable the City of Arvada to become a self-certified maintainer at no additional cost to the City of Arvada. We have a proven track record of providing this value add offering to our many customers.	12
VR10	Must have	Hard drive retention policy	City retains all hard drives	Yes	Keep your drive is included with all proposed devices	24
Deployment						
VR11	Should have	Remote BIOS updates	Options for remote BIOS changes and updates	Yes	Included by Default using the OEM tools available from both HP and Lenovo	12
VR12	Should have	Image deployment	Option of preloaded image	Yes	A preloaded image can be loaded at the factory by the OEM. In addition, DHE has the capabilities to provide this service locally as well. We also offer Intune/Autopilot assistance and configuration as part of our value add offering	12
Operations						
VR13	Should have	Shipping	Low-waste shipping options	Yes	All devices are shipped in sustainable low waste packaging from the factory and from our warehouses	12
VR14	Must have	Supply Chain	Provide your supply chain security policies	Yes	DHE maintains (2) large warehouses in Centennial Colorado with physical security monitoring, secure and locked storage. All devices are carefully inspected upon deliver to ensure equipment is in NEW and factory sealed. Any item that doesn't meet our standards is rejected and returned to the OEM.	24
Compliance						

			ISO/IEC 27001:2013 is a security management standard that specifies security management best practices and comprehensive security controls following the ISO/IEC 27002 best practice guidance. The basis of this certification is the development and implementation of a rigorous security program, which includes the development and implementation of an Information Security Management System (ISMS) which defines how an organization perpetually manages security in a holistic, comprehensive manner.		DHE can clearly demonstrate that we meet these requirements from our own internal security methods and processes. While we are not currently ISO/IEC 27001:2013 certified, we can take the steps to do so if this standard is a requirement. DHE agrees to adhere to all City of Arvada security management requirements and will provide details and progress as needed.	6
VR15	Should have	ISO 27001 - Security Management Controls	Demonstration of Compliance: Certification by a third party auditor	Qualified Yes		
VR16	Should have	ADA compliance	Is your user portal WCAG 2.2 compliant?	Qualified Yes	Yes, our procurement user portal is WCAG 2.2 Compliant DHE offers a secure punch out portal that can connect to most existing ERP solutions and enables user and admin level permissions to securley build quotes, initiate purchase orders in a secure manner	4
VR17	Could have	Standards	Describe any other industry standards with which this solution or your operations are compliant	Yes		
Vendor Requirements						286

APPENDIX B

SPECIFICATION SHEETS

Thank you for considering DHE Computer Systems for your Workstation Computers. Enclosed in the subsequent pages, you will find additional information that we believe will enhance the City's understanding of our proposal and further support our response. This supplemental material aims to provide a comprehensive overview of our offerings, ensuring that the City has all the necessary details to make an informed decision.

We hope that these materials will provide you with the information you need to make an informed decision about your computer needs. If you have any questions or would like to discuss further, please do not hesitate to reach out to us



HP Hardware Support Onsite Service

HP Care Pack services

Service feature highlights

- **Coverage begins on original hardware purchase date (even if prior to the date of purchase of the HP Care Pack Services)**
- Remote problem diagnosis and support
- Onsite hardware support
- Replacement parts and materials included
- Service-level options with different coverage windows
- Service-level options with different onsite response time for hardware support
- Escalation management
- Access to electronic support information and services
- HP electronic remote support solution (for eligible products only)
- **Accidental damage protection (AUD\$55 (plus GST) service fee per claim) (optional: for eligible products only)**
- Accidental damage protection (nil service fee) (optional: for eligible products only)
- Defective media retention (optional; for eligible products only)
- Call-to-repair time commitment in lieu of onsite response time for hardware support (optional; for eligible products only)
- Enhanced parts inventory management (included with select, optional call-to-repair time commitments)
- **Desktop/workstation/thin client/notebook-only coverage (optional; for eligible products only)**

This HP Care Pack, together with the 'HP Support Service Agreement Terms & Conditions' ("Terms & Conditions") and the service specifications stated in the HP Care Pack Product Name or Description form the basis of your agreement with HP for Hardware Support Onsite Service ("Agreement") and the Accidental Damage cover provided by AIG Australia Limited ("AIG"). The Terms & Conditions can be located at hp.com/go/cpc

Service overview

HP Hardware Support Onsite Service provides high-quality remote assistance and onsite support for your covered hardware, helping you to improve product uptime.

You have the flexibility to choose between multiple predefined service-level options featuring several onsite response or call-to-repair time and coverage window combinations in various durations to address your specific service needs.

Service-level options with call-to-repair times provide IT managers with support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within a specified timeframe. In addition, you may choose to purchase Accidental damage protection for your covered hardware. This cover has been arranged by HP with AIG Australia Limited ("AIG") Details of the Accidental damage protection and the terms and conditions governing this coverage are set out in the Product Disclosure statement (Appendix A) and this HP Care Pack. Accidental damage protection is available as either **Accidental damage protection (AUD\$55 (plus GST)) service fee per claim)** or Accidental damage protection (nil service fee). Full details of both options including coverage and exclusions are set out in Table 2 below.

Accidental damage protection optional service feature, you must report accidental damage to HP within thirty days of the incident date so that HP can expedite system repair. The report must have a detailed explanation of the accident, including when, where, and how it occurred, and a description of damage to the unit. HP may deny the claim if this information is not provided, or if the incident is reported more than thirty days after the incident date.

Specifications

Table 1. Service features

Feature	Delivery specifications
Remote problem diagnosis and support	Once the Customer has placed and HP has acknowledged the receipt of a call as described in 'General provisions', HP will work during the coverage window to isolate the hardware incident and to remotely troubleshoot, remedy, and resolve the incident with the Customer. Prior to any onsite assistance, HP may initiate and perform remote diagnostics using electronic remote support solutions to access covered products, or HP may use other means available to facilitate remote incident resolution. HP will provide telephone assistance for the installation of customer-installable firmware and Customer Self Repair parts during the service coverage window. Regardless of the Customer's coverage window, incidents with covered hardware can be reported to HP via telephone or Web portal, as locally available, or as an automated equipment reporting event via the HP electronic remote support solutions 24 hours a day, 7 days a week. HP will acknowledge the receipt by logging the call, assigning a case ID, and communicating that case ID to the Customer. Save for any condition, warranty, guarantee, right or remedy the Customer may have at law which cannot be excluded, limited or modified (including a consumer guarantee under the Australian Consumer Law), HP will determine the resolution of all reported incidents.

Onsite hardware support	For hardware incidents that cannot, in HP's judgment, be resolved remotely, an HP authorized representative will provide onsite technical support on covered hardware products to return them to operating condition. Save for any condition, warranty, guarantee, right or remedy the Customer may have at law which cannot be excluded, limited or modified (including a consumer guarantee under the Australian Consumer Law), for certain products, HP may elect to replace such products in lieu of repairing them. Replacement products are new or functionally equivalent to new in performance. Goods presented for repair may be replaced by refurbished goods of the same type rather than being repaired. Refurbished parts may be used to repair the goods. Replaced products become the property of HP. Once an HP authorized representative arrives at the Customer's site, the representative will continue to deliver the service, either onsite or remotely, at the discretion of HP, until the products are repaired. Work may be temporarily suspended if parts or additional resources are required, but work will resume when they become available. Save for any condition, warranty, guarantee, right or remedy the Customer may have at law which cannot be excluded, limited or modified (including a consumer guarantee under the Australian Consumer Law), repair is considered complete upon HP verification that the hardware malfunction has been corrected or that the hardware has been replaced. 'Fix-on-Failure': In addition at time of onsite technical support delivery, HP may: • Install available engineering improvements to help the Customer ensure proper operation of the hardware products and maintain compatibility with HP-supplied hardware replacement parts. • Install available firmware updates defined by HP as non-customer- installable that, in the opinion of HP, are required to return the covered product to operating condition or to maintain supportability by HP and for which the Customer has the required license to use, if applicable. 'Fix-on-Request': In addition, at customer request HP will install during coverage hours critical firmware updates defined by HP as non-customer- installable and for which the Customer has the required license to use, if applicable. Critical firmware updates are firmware updates recommended by the HP product division for immediate installation.
Replacement parts and materials	HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Replacement parts provided by HP shall be new or functionally equivalent to new in performance. Goods presented for repair may be replaced by refurbished goods of the same type rather than being repaired. Refurbished parts may be used to repair the goods. Replaced parts become the property of HP. Customers who wish to retain, degauss, or otherwise physically destroy replaced parts will be billed and required to pay the list price less any applicable discounts for the replacement part. Supplies and consumable parts are not supported and will not be provided as part of this service; standard warranty terms and conditions and your rights (if any) under the Australian Consumer Law apply to supplies and consumable parts. Maximum supported lifetime/maximum usage: Parts and components that have exceeded an acceptable maximum usage rate or duty cycle (including as specified in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet) will not be provided, repaired, or replaced as part of this service.

Coverage window	The coverage window specifies the time during which the described services are delivered onsite or remotely. Calls received outside this coverage window will be logged at the time the call is placed to HP, but will not be acknowledged as described in 'General provisions' until the next day for which the Customer has a coverage window. Coverage window options available for eligible products are specified in the Service-level options table. All coverage windows are subject to local availability. Contact a local HP sales office for detailed information on service availability.
Onsite response time for hardware support	For incidents with covered hardware that cannot be resolved remotely, HP will use commercially reasonable efforts to respond onsite within the specified onsite response time. Onsite response time specifies the period of time that begins when the initial call has been received and acknowledged by HP, as described in 'General provisions'. The onsite response time ends when the HP authorized representative arrives at the Customer's site, or when the reported event is closed with explanation that HP has determined it does not currently require an onsite intervention. Response times are measured during the coverage window only and may be carried over to the next day for which there exists a coverage window. Response time options available for eligible products are specified in the Service-level options table. All response times are subject to local availability. Contact a local HP sales office for detailed information on service availability.
Escalation management	HP has established formal escalation procedures to facilitate the resolution of complex incidents. Local HP management coordinates incident escalation, enlisting the skills of appropriate HP resources and/or selected third parties to assist with problem-solving.
Access to electronic support information and services	As part of this service, HP provides access to certain commercially available electronic and Web-based tools. The Customer has access to: • Certain capabilities that are made available to registered users, such as downloading selected HP firmware or patches which may require additional entitlement through HP Software Support agreements, subscribing to hardware-related proactive service notifications, and participating in support forums for solving problems and sharing best practices with other registered users. • Expanded Web-based searches of entitled technical support documents, to facilitate faster problem-solving. • Certain HP proprietary service diagnostic tools with password access. • A Web-based tool for submitting questions directly to HP. The tool helps to resolve problems quickly with a pre-qualification process that routes the support or service request to the resource qualified to answer the question. The tool also allows the status of each support or service request submitted to be viewed, including cases submitted by telephone. • Search of HP and third-party hosted knowledge databases for certain third-party products in order to retrieve product information, get answers to support questions, and participate in support forums. This service may be limited by third-party access restrictions.
HP electronic remote support solution	For eligible products, the HP electronic remote support solution provides robust troubleshooting and repair capabilities. It can include remote system access solutions and may offer a convenient central point of administration and an enterprise view of open incidents and history. An HP support specialist will only use the remote system

access with the Customer's authorization. The remote system access may enable the HP support specialist to provide more efficient troubleshooting and faster problem resolution.

Specifications (optional)

Table 2. Optional service features

Feature	Delivery specifications
Accidental damage protection: (nil service fee)	This Accidental damage protection coverage is provided to you pursuant to a group insurance policy that HP has purchased from AIG. HP on behalf of AIG has previously provided you with a Product Disclosure Statement ("PDS") a copy of the PDS can be accessed at hp.com.au/carepack/pds and form part of this Accidental damage protection cover. Coverage is therefore subject to the terms found in this section and in the PDS. HP operates as a Group Purchasing Body under ASIC Class Order CO/081. As a group purchasing entity, HP is obliged to provide you with a Product disclosure statement (PDS) which can be accessed at hp.com.au/carepack/pds. HP is not authorised to provide any financial advice in respect of this Accidental damage protection. The covered hardware is specified in hp.com.au/carepack/ Please also note that this section is subject to cooling off rights under the Corporations Act (2001) Cth. The details of such cooling off rights are set out in the PDS. You are also entitled to cancel this Accidental damage protection cover at any time. However such cancellation (or cancellation under your cooling off rights) will automatically result in cancellation of the entire HP Care Pack Services found in this document. You are a beneficiary under the group policy purchased by HP. This means that, your claim for Accidental Damage will be covered and paid by AIG. AIG has appointed HP to handle any AD Claims. Accidental damage is defined as physical damage to a product caused by or resulting from a sudden and unforeseen incident, provided such damage occurs in the course of regular use. Covered perils include non-intentional liquid spills in or on the unit, drops, falls, and electrical surge, as well as damaged or broken liquid crystal displays (LCDs) and broken parts. Additional details and exclusions pertaining to the accidental damage protection are detailed in the 'Service limitations' section (including "Coverage and Exclusions applicable to accidental damage protection service feature options").
Accidental damage Protection (AUD\$55 (plus GST) service fee per claim)	All of the Delivery Specifications listed in Accidental damage protection (nil service fee per claim) above apply. Additional details and exclusions pertaining to this accidental damage protection (AUD\$55 (plus GST) service fee) are detailed in the "Service limitations" section (including "Coverage and Exclusions applicable to accidental damage protection service feature options"). This Accidental Damage protection is provided on the basis of a AUD\$55 (plus GST) service fee per claim
Defective media retention	For eligible products, this service feature option allows the Customer to retain defective hard disk or eligible SSD/Flash drive components that the Customer does not want to relinquish due to sensitive data contained within the disk ('Disk or SSD/Flash Drive') covered under this service. All Disk or eligible SSD/Flash Drives on a covered system must participate in the defective media retention.
One-time Battery Replacement	The One Time Battery Replacement Service offers onsite replacement of out-of-warranty batteries. One replacement battery will be provided if the originally purchased battery drops below 50% charge capacity during normal use or if a cell failure has occurred before the 50% limit is reached.

	This service terminates after you receive a battery replacement or when the service period expires on the supported product, whichever event occurs first.
Call-to-repair time commitment for hardware support	A call-to-repair time commitment may be selected for eligible products in lieu of an onsite response time. For critical incidents (severity 1 or 2) with covered hardware that cannot be resolved remotely, HP will use commercially reasonable efforts to return the covered hardware to operating condition within the specified call-to-repair time commitment. For non-critical incidents (severity 3 or 4), or at the Customer's request, HP will work with the Customer to schedule an agreed-upon time for the remedial action to commence, and the call-to-repair time commitment will then start at that time. Incident severity levels are defined in 'General provisions'. Call-to-repair time refers to the period of time that begins when the initial call has been received and acknowledged by HP, as specified in 'General provisions'. Call-to-repair time ends with HP's determination that the hardware is repaired or when the reported event is closed with the explanation that HP has determined it does not currently require onsite intervention. Call-to-repair times are measured during the coverage window only and may be carried over to the next day for which there exists a coverage window. Call-to-repair time options available for eligible products are specified in the Service-level options table. Contact a local HP sales office for more information. Save for any condition, warranty, guarantee, right or remedy the Customer may have at law which cannot be excluded, limited or modified (including a consumer guarantee under the Australian Consumer Law), repair is considered complete upon HP verification that the hardware malfunction has been corrected or that the hardware has been replaced. Repair of hardware may result in loss of data. HP is not liable for any lost data and the Customer is responsible for implementing appropriate backup procedures. Verification by HP may be accomplished by the completion of a power-on self-test, standalone diagnostic or visual verification of proper operation. HP will determine the level of testing necessary to verify that the hardware is repaired. HP may temporarily or permanently replace the product in order to meet the repair time commitment. Replacement products are new or functionally equivalent to new in performance. Goods presented for repair may be replaced by refurbished goods of the same type rather than being repaired. Refurbished parts may be used to repair the goods. Replaced products become the property of HP. It will take 30 days from the time this service is purchased to set up and perform necessary audits and processes before the hardware call-to-repair time commitment is in effect. During this initial 30-day period and for up to 5 additional business days after the audit is completed, HP will provide a 4-hour onsite response time. Nothing in this section is intended to exclude or limit any condition, warranty, guarantee, right or remedy the Customer may have at law which cannot be excluded, limited or modified (including a consumer guarantee under the Australian Consumer Law).
Enhanced parts inventory management (included with select, optional call-to-repair time commitments)	To support HP call-to-repair time commitments, an inventory of critical replacement parts is maintained for call-to-repair Customers. This inventory is stored at an HP designated facility. These parts are managed to allow for increased inventory availability and are accessible to HP authorized representatives responding to eligible support requests. Nothing in this section is intended to exclude or limit any condition, warranty, guarantee, right or remedy the Customer may have at law which cannot be excluded, limited or modified (including a consumer guarantee under the Australian Consumer Law).

Desktop/workstation/ thin client/ notebook only coverage	For eligible PC products, the Customer may choose desktop/ workstation/ thin client/notebook-only coverage. Notwithstanding anything to the contrary in this Agreement, HP Care Pack services with this coverage limitation do not cover the following options and accessories: • External monitor • Any external accessory that is not purchased and included in the original packaging of the main desktop, workstation, thin client, or notebook product The docking station or port replicator is covered within the country where the HP Care Pack service was purchased, but is not covered outside the country of purchase.
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Specifications

Table 3. Service-level options

Not all service-level options are available on all products. The service-level options are chosen by the Customer at the time of purchase

Feature	Delivery specifications
Standard response time, standard business hours (9x5)	Service is available 9 hours per day between 8:00 a.m. and 5:00 p.m. local time, Monday through Friday excluding public holidays in the relevant Australian state or territory. An HP authorized representative will arrive at the Customer's site during the coverage window to begin hardware maintenance services within a locally defined onsite response time after the service request has been received and acknowledged by HP. Locally defined onsite response times can vary and are dependent on local capabilities. Calls received outside the coverage window will be acknowledged the next coverage day and then serviced within the locally defined onsite response time. For information on the standard onsite response time that applies to a specific country or geographic region, please contact a local HP sales office.
Third-day response, standard business hours (9x5)	Service is available 9 hours per day between 8:00 a.m. and 5:00 p.m. local time, Monday through Friday excluding public holidays in the relevant Australian state or territory. An HP authorized representative will arrive at the Customer's site during the coverage window to begin hardware maintenance service the third coverage day after the call has been received and acknowledged by HP. Calls received outside the coverage window will be acknowledged the next coverage day and serviced within the following 3 coverage days.
Next-day response, standard business hours (9x5)	Service is available 9 hours per day between 8:00 a.m. and 5:00 p.m. local time, Monday through Friday excluding public holidays in the relevant Australian state or territory. An HP authorized representative will arrive at the Customer's site during the coverage window to begin hardware maintenance service the next coverage day after the call has been received and acknowledged by HP. Calls received outside the coverage window will be acknowledged the next coverage day and serviced within the following coverage day.
4-hour response, standard business hours (9x5)	Service is available 9 hours per day between 8:00 a.m. and 5:00 p.m. local time, Monday through Friday excluding public holidays in the relevant Australian state or territory. An HP authorized representative will arrive at the Customer's site during the coverage window to begin hardware maintenance service within 4 hours after the call has been received and acknowledged by HP. The 4-hour onsite response time is measured during the coverage window only. For calls received after 1:00 p.m. local time, the response time may be carried over to the next coverage window.

4-hour response, extended business hours (13x5)	Service is available 13 hours per day between 8:00 a.m. and 9:00 p.m. local time, Monday through Friday excluding public holidays in the relevant Australian state or territory. An HP authorized representative will arrive at the Customer's site during the coverage window to begin hardware maintenance service within 4 hours after the call has been received and acknowledged by HP. The 4-hour onsite response time is measured during the coverage window only. For calls received after 5:00 p.m. local time, the response time may be carried over to the next coverage window.
4-hour response, extended business hours (13x7)	Service is available 13 hours per day between 8:00 a.m. and 9:00 p.m. local time, Monday through Sunday including public holidays in the relevant Australian state or territory. An HP authorized representative will arrive at the Customer's site during the coverage window to begin hardware maintenance service within 4 hours after the call has been received and acknowledged by HP. The 4-hour response time is measured during the coverage window only. For calls received after 5:00 p.m. local time, the response time may be carried over to the next coverage window.
4-hour response, 24x7	Service is available 24 hours per day, Monday through Sunday including public holidays in the relevant Australian state or territory. An HP authorized representative will arrive at the Customer's site any time and day of the year to begin hardware maintenance service within 4 hours after the call has been received and acknowledged by HP.
6-hour call-to-repair	For critical incidents with covered hardware, HP will use commercially reasonable efforts to return the covered hardware to operating condition within 6 hours of the initial call to HP, if this time falls within the coverage window.
24-hour call-to-repair, 24x7	Service is available 24 hours per day, Monday through Sunday including public holidays in the relevant Australian state or territory. For critical incidents with covered hardware, HP will use commercially reasonable efforts to return the covered hardware to operating condition within 24 hours after the call has been received and acknowledged by HP.

Coverage

This service provides coverage for eligible HP- or Compaq-branded hardware products and HP-supported and -supplied internal components such as memory and DVD-ROM drives, as well as attached HP- or Compaq-branded accessories purchased together with the main product, such as mouse, keyboard, docking station and AC power adapter.

For HP point-of-sale (POS) systems and bundled product solutions such as retail solutions, kiosks, or carts, this service covers the base unit as well as attached HP-branded peripherals such as cash drawers, printers, pole displays for monitors, and bar-code readers or handheld scanners that have been sold as part of the POS or bundled product solution.

Coverage for eligible multivendor systems includes all standard vendor-supplied internal components and the external monitor, keyboard, and mouse.

Subject to any warranty, guarantee, right or remedy that cannot be excluded, limited or modified (including a consumer guarantee under the Australian Consumer Law), consumable items including, but not limited to, removable media, customer-replaceable batteries and tablet PC pens, maintenance kits, and other supplies, as well as user maintenance and non-HP devices, are not covered by this service.

For replacement parts and components that are discontinued, an upgrade path may be required. HP will work with the Customer to recommend a replacement. Subject to any warranty, guarantee, right or remedy that cannot be excluded, limited or modified (including a consumer guarantee under the Australian Consumer Law), not all components will have available replacements in all countries due to local support capabilities.

Prerequisites

For hardware onsite response time options, HP strongly recommends that the Customer install and operate the appropriate HP remote support solution, with a secure connection to HP, in order to enable the delivery of the service. For hardware call-to-repair time commitments, HP requires that the Customer install and operate the appropriate HP remote support solution, with a secure connection to HP, in order to enable the delivery of the service. Please contact a local HP representative for further details on requirements, specifications, and exclusions. If the Customer does not deploy the appropriate HP remote support solution, HP may not deliver the services described in this Agreement. However, non-compliance with the obligations does not affect any right or remedy the Customer may have at law (including a consumer guarantee under the Australian Consumer Law). Installation of customer-installable firmware is the responsibility of the Customer and is not included in the service.

For Customers with licenses to firmware-based software products (features implemented in firmware activated by the purchase of a separate software license product) or licensed firmware, the Customer must also have, if available, an active HP Software Support agreement to receive, download, install, and use related firmware updates. HP will provide, install, or assist the Customer with the installation of firmware updates as previously described in this Agreement only if the Customer has the license to use the related software updates for each system, socket, processor, processor core, or end-user software license as allowed by the original HP or original manufacturer software license terms.

Customer responsibilities

If the Customer does not act upon the specified Customer responsibilities, HP or the HP authorized service provider may not deliver the services as described in this Agreement. However, non-compliance with the obligations does not affect any right or remedy the Customer may have at law (including a consumer guarantee under the Australian Consumer Law).

If required by HP, the Customer or HP authorized representative must activate the hardware product to be supported within 10 days of purchase of this service, using the registration instructions within the Care Pack or the email document provided by HP, or as otherwise directed by HP. In the event that a covered product changes location (subject to HP consent), activation and registration (or a proper adjustment to existing HP registration) is to occur within 10 days of the change.

The call-to-repair time commitment is subject to the Customer providing immediate and unrestricted access to the system (including physical, remote troubleshooting and hardware diagnostic assessments), as requested by HP. If the Customer does not provide such access, HP may not comply with the call-to-repair time commitment. If the Customer requests scheduled service, the call-to-repair time period begins at the agreed-upon scheduled time.

For hardware onsite response time options HP strongly recommends and for hardware call-to-repair time commitments the Customer must install the appropriate HP remote support solution, with a secure connection to HP, and provide all necessary resources according to the HP remote support solution release notes, in order to enable the delivery of the service and options. When an HP remote support solution is installed, the Customer must also maintain the contact details configured in the remote support solution that HP will use in responding to a device failure. Please contact a local HP representative for further details on requirements, specifications, and exclusions.

Upon HP request, the Customer will be required to support HP's remote problem resolution efforts. The Customer will:

- Provide all information necessary for HP to deliver timely and professional remote support and to enable HP to determine the level of support eligibility
- Start self-tests and install and run other diagnostic tools and programs
- Install customer-installable firmware updates and patches
- Perform other reasonable activities to help HP identify or resolve problems, as requested by HP

The Customer is responsible for installing, in a timely manner, critical customer-installable firmware updates, as well as Customer Self Repair parts and replacement products delivered to the Customer.

The Customer agrees to pay additional charges if the Customer requests that HP install customer-installable firmware updates or patches. Any additional charges to the Customer will be on a time-and-materials basis, unless otherwise previously agreed in writing by HP and the Customer.

In cases where Customer Self Repair parts or replacement products are shipped to resolve a problem, the Customer is responsible for returning the defective part or product within a time period designated by HP. In the event HP does not receive the defective part or product within the designated time period or if the part or product is degaussed or otherwise physically damaged upon receipt, the Customer will be required to pay the HP list price less any applicable discounts for the defective part or product, as determined by HP. The Customer may have additional rights at law which cannot be excluded, limited or modified (including a consumer guarantee under the Australian Consumer Law).

The Customer is responsible for the security of the Customer's proprietary and confidential information. The Customer is responsible for properly sanitizing or removing data from products that may be replaced and returned to HP as part of the repair process to ensure the safeguarding of the Customer's data. The repair of goods may result in loss of data. For more information on Customer responsibilities, including those outlined in HP's Media Sanitization Policy and Media Handling Policy for Healthcare Customers, go to hp.com/go/mediahandling.

If the Customer chooses to retain repair parts covered under the defective media retention and/or comprehensive defective material retention service feature options, it is the Customer's responsibility to:

- Retain physical control of the covered data retentive components at all times during support delivery by HP; HP is not responsible for data contained on the covered data retentive component
- Ensure that any Customer sensitive data on the retained the covered data retentive component is destroyed or remains secure
- Have an authorized representative present to retain the defective data retentive component, accept the replacement component, provide HP with identification information for each data retentive component retained hereunder, and, upon HP request, execute a document provided by HP acknowledging the retention of the data retentive component
- Destroy the retained data retentive component and/or ensure that it is not put into use again
- Dispose of all retained data retentive components in compliance with applicable environmental laws and regulations

For data retentive components supplied by HP to the Customer as loaner, rental, or lease products, the Customer will promptly return the replacement components at the expiration or termination of support with HP. The Customer will be solely responsible for removing all sensitive data before returning any such loaned, rented, or leased components or products to HP, and HP shall not be responsible for maintaining the confidentiality or privacy of any sensitive data that remains on such components.

Accidental damage protection (optional feature)

For HP Care Pack offerings that include the accidental damage protection optional service feature, you must report accidental damage to HP within thirty days of the incident date so that HP can expedite system repair. The report must have a detailed explanation of the accident, including when, where, and how it occurred, and a description of damage to the unit. HP may deny the claim if this information is not provided, or if the incident is reported more than thirty days after the incident date.

Defective media retention (optional feature)

With the defective media retention service feature option, it is your responsibility to:

- Retain physical control of disks or SSD/flash drives at all times; HP is not responsible for data contained on disks or SSD/flash drives.
- Ensure that any sensitive data on the retained disks or SSD/flash drives is destroyed or remains secure.
- Provide HP with identification information for each disk or SSD/flash drive retained hereunder, and execute a document provided by HP acknowledging your retention of the disks or SSD/flash drives.

- Destroy the retained disk or SSD/flash drives and/or ensure that the disk or SSD/flash drive is not put into use again.
- Dispose of all retained disks or SSD/flash drives in compliance with applicable environmental laws and regulations.

For disks or SSD/flash drives supplied to you by HP as loaner, rental, or lease products, you will promptly return the replacement disks or SSD/flash drives at the expiration or termination of support with HP. **You will be solely responsible for removing all sensitive data before returning any such loaned, rented, or leased disks or SSD/flash drives to HP, and HP shall not be responsible for maintaining the confidentiality or privacy of any sensitive data that remains on such disk or SSD/flash drive.**

One time Battery Replacement service feature (optional feature)

Customers who did not previously register their One Time Battery Service Replacement should note that it is necessary to register the purchase before the battery replacement order can be completed. You will be required to provide "proof of purchase" at the time of the claim. You should be prepared to provide data from the purchase documentation to the Call Centre representative and to fax or mail a copy of the proof of purchase to HP. If you want HP to take care of the battery disposal and destruction of the hazardous battery in compliance to environmental standards and local regulations, please reach out to your HP representative. Additional charges may apply.

Service limitations

Nothing in this Agreement excludes, restricts or modifies any condition, warranty, guarantee, right or remedy you may have at law (including a consumer guarantee under the Australian Consumer Law) which cannot be lawfully excluded or limited.

Service will be provided using a combination of remote diagnosis and support, services delivered onsite, and other service delivery methods. Other service delivery methods may include the delivery, via a courier, of customer-replaceable parts such as a keyboard, a mouse, or if agreed by the Customer, other parts classified by HP as Customer Self Repair parts, or an entire replacement product. The Customer may have additional rights at law which cannot be excluded, limited or modified (including a consumer guarantee under the Australian Consumer Law).

If the Customer agrees to the recommended Customer Self Repair (CSR) and a CSR part is provided to return the system to operating condition, the onsite service level shall not apply. In those cases, HP practice is to express ship Customer Self Repair parts that are critical to the product operation to the Customer location. For more details on the Customer Self Repair process and parts, please refer to hp.com/go/selfrepair

An onsite response time will not apply if the service can be delivered using remote diagnosis, remote support, or other service delivery methods described above.

For HP point-of-sale (POS) systems and bundled product solutions such as retail solutions, kiosks, or carts, service may be provided onsite for the base unit only. Service for attached peripherals will be provided by shipping replacement parts or entire replacement products for Customer Self Repair or installation by the technical courier delivering the part or product. The Customer may have additional rights at law which cannot be excluded, limited or modified (including a consumer guarantee under the Australian Consumer Law).

The following activities or situations will suspend the call-to-repair time calculation (if applicable) until they are completed or resolved:

- Any Customer or third party actions or inaction impacting the repair process
- Any automated or manual recovery processes triggered by the hardware malfunction, such as disk mechanism rebuild, sparing procedures, or data integrity protection measures
- Any other activities not specific to the hardware repair but required to verify that the hardware malfunction has been corrected, such as rebooting the operating system

Call-to-repair time commitments and onsite response times do not apply to the repair or replacement of defective or depleted batteries for selected enterprise storage arrays and enterprise tape products.

A call-to-repair time commitment does not apply when the Customer chooses to have HP prolong diagnosis rather than execute recommended recovery procedures.

If the Customer requests scheduled service, the call-to-repair time period begins at the agreed-upon scheduled time.

The following activities are excluded from this Agreement:

- Backup, recovery, and support of the operating system, other software, and data
- Operational testing of applications, or additional tests requested or required by the Customer
- Troubleshooting for interconnectivity or compatibility problems
- Support for network-related problems
- Services required due to failure of the Customer to incorporate any system fix, repair, patch, or modification provided to the Customer by HP
- Services required due to failure of the Customer to take avoidance action previously advised by HP
- Services that, in the opinion of HP, are required due to improper treatment or use of the product
- Services that, in the opinion of HP, are required due to unauthorized attempts by non-HP personnel to install, repair, maintain, or modify hardware, firmware, or software
- Services that, in the opinion of HP, are required due to damage to products as a result of the use of non-HP consumables.

The Customer may have additional rights at law which cannot be excluded, limited or modified (including a consumer guarantee under the Australian Consumer Law).

Limitations to the One time Battery Replacement service feature option:

This Care Pack must be purchased within 90 days of the hardware purchase. Customers who do not purchase the One-time Battery Replacement Service at time of hardware purchase have an option to purchase an after-market battery option kit from HP.

This service is for one (1) battery replacement per product under contract within the terms of service of the Care Pack. Coverage is limited to the primary battery that was originally configured and purchased with the product.

Coverage and Exclusions applicable to the accidental damage protection service feature options

Coverage and exclusions applicable to all accidental damage protection options:

Coverage for Accidental Damage protection is also subject to the applicable terms and conditions found in the rest of this document.

If Your covered hardware suffers Accidental Damage, subject to the terms of the PDS, the Master Policy and this HP Care Pack Services Document, AIG will, at its discretion (through HP):

- (i) repair the defect using new or refurbished parts that are equivalent to new in performance and reliability, or
- (ii) exchange the Product with a replacement product that is new or equivalent to new in performance and reliability.

Provided You register your covered hardware and pay the premium (as detailed in the PDS and this document), Accidental damage protection is for a 3, 4 or 5 year period commencing from the date of purchase of your covered hardware (which may be earlier than the date of purchase of this HP Care Pack Services). The recommended retail price of a replacement product will not exceed the original purchase price of the replaced Product.

The 3 year period of cover consists of 3 consecutive one year period(s) of cover. The 4 year period of cover consists of 4 consecutive one year period(s) of cover. The 5 year period of cover consists of 5 consecutive one year period(s) of cover. The initial one year period of Cover shall commence from the date of purchase of your covered hardware and with each subsequent year(s) of cover commencing on the anniversary dates of the purchase of the covered hardware.

Maximum benefit- this varies subject to which Accidental damage protection option You have purchased. Please see below for details.

In the event of the entire replacement of the covered hardware, this Accidental damage protection cover ends and this HP Care Pack Services terminates. In such a case no further claims for accidental damage will be permitted irrespective of the year(s) of cover still available and irrespective of the number of claims made or not made. On termination no further HP Care Pack Services may be purchased or registered in respect of the replacement of the covered hardware.

Your Accidental damage protection cover will terminate when any of the following occurs:

- (i) the Accidental damage protection coverage is cancelled (see section 'Cancellation' in the PDS);
- (ii) the 3, 4 or 5 year period of cover expires;
- (iii) You sell the covered hardware;
- (iv) the "Maximum benefit" – (as set out below) has been reached;
- (v) AIG provides a refund as settlement of a claim; or
- (vi) This HP Care Pack Service is terminated

The maximum amount payable by AIG will be the original purchase price (inclusive of GST) of Your covered hardware.

No Accidental damage protection cover shall be provided in connection with the following events and damage:

- Normal wear and tear; change in color, texture, or finish; gradual deterioration; rust; dust; or corrosion
- Fire, a vehicular or homeowner's accident (in cases in which said accident is covered by an insurance policy or other product warranty), act of nature (including, without limitation, floods), or any other peril originating from outside the product
- Exposure to weather conditions or environmental conditions that are outside of HP specifications, exposure to hazardous (including bio-hazardous) materials, operator negligence, misuse, mishandling, improper electrical power supply, unauthorized repairs or attempts to repair, improper and unauthorized equipment modifications, attachments or installation, vandalism, animal or insect damage or infestation, defective batteries, battery leakage, lack of manufacturer-specified maintenance (including the use of inappropriate cleansers)
- Maintenance, repair, or replacement necessitated by loss or damage resulting from any cause other than normal use, storage, and operation of the product in accordance with the manufacturer's specifications and owner's manual
- Theft, loss, mysterious disappearance, or misplacement
- Data loss or corruption; business interruptions
- Fraud (including, but not limited to, incorrect, misleading, erroneous or incomplete disclosure of how the equipment was damaged to the Customer's adjudicator, the servicer, or HP)
- Accidental or other damage to the product that is cosmetic in nature, meaning damage that does not impact operation and functioning of the computer
- Computer monitor screen imperfections including, but not limited to, 'burn-in' and missing pixels, caused by normal use and operation of the product
- Damage to product(s) whose serial numbers are removed or altered
- Damage or equipment failure that is covered by manufacturer's warranty, recall, or factory bulletins
- Damage caused during the Customer's shipment of the covered product to or from another location
- Damage to hardware, software, media, data, etc., stemming from causes including, but not limited to, viruses; application programs; network programs; upgrades; formatting of any kind; databases; files; drivers; source code; object code or proprietary data; any support, configuration, installation or reinstallation of any software or data; or use of damaged or defective media
- Any and all pre-existing conditions that occurred (i.e., took place) prior to the purchase date of the HP Care Pack service
- Any equipment relocated outside the country of purchase
- Damaged or defective LCD screens when the failure is caused by abuse or is otherwise excluded herein
- Intentional damage that results in a cracked or damaged computer display screen or damaged monitor
- Damage due to police action, undeclared or declared war, nuclear incident, or terrorism
- Alteration or modification of the covered product in any way
- Unexplained or mysterious disappearance and any wilful act to cause damage to the covered product

- Losses or damage due to, or related to, a biological or chemical event(s)
- Losses or damage caused by Your or Your Customer's illegal acts
- Any losses or damages due to the order of any government, public authority, or customs official
- Reckless, negligent, or abusive conduct while handling or using the product. If protective items such as covers, carrying cases or pouches, etc., were provided or made available for use with the covered product, the Customer must continually use these product accessories to be eligible for protection under this Accidental Damage Cover. Reckless, negligent, or abusive conduct includes, but is not limited to, the treatment and use of the covered product(s) in a harmful, injurious, or offensive manner that may result in its damage and any wilful or intentional damage to the product. Any damage resulting from such acts are NOT covered
- Any loss, damage or injury, or other contingency which is in any way due to:
 - a. War, invasion, act of foreign enemy, hostilities or warlike operations (whether war be declared or not), civil war; and
 - b. Civil commotion assuming the proportions of or amounting to a popular uprising, military rising, mutiny, insurrection, rebellion, revolution, military or usurped power, martial law or state of siege or any of the events or causes which determine the proclamation or maintenance of martial law or state of siege or any act of any person acting on behalf of or in connection with any organisation with activities directed towards the overthrow by force of the government de jure or de facto or to the influencing of it by terrorism or violence.
- Any legal liability of whatsoever nature directly or indirectly caused by or contributed to by or arising from ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel. Solely for the purpose of this exclusion, combustion shall include any self-sustaining process of nuclear fission and
- Any accident, loss, destruction, damage or legal liability directly or indirectly caused by or contributed to by or arising from nuclear weapons material.
- Any loss (whether temporary or permanent) of Your property or any part thereof by reason of confiscation, requisition, detention or legal or illegal occupation of such property or any premises, vehicle or thing containing the same by any government authorities.
- Any loss, damage or other contingency happening during the existence of a state of emergency as declared by the local authorities (whether physical or otherwise) which is occasioned by or through or in consequence directly or indirectly of any of the said occurrences except to the extent that You shall prove that such loss, damage or other contingency happened independently of the existence of the state of emergency as declared by the local authorities.
- Any loss, damage, cost or expense or consequential to the loss however caused by, contributed by, resulting from or in connection with:
 - any Act of Terrorism, notwithstanding any provision to the contrary within this Policy or any endorsement thereto; and
 - any action taken in controlling, preventing, suppressing or in any way relating to any Act of Terrorism.

Where We decline any claim on this ground, You have the burden to show to the contrary that the exclusion(s) do not apply.

If, by virtue of any law or regulation which is applicable to the Insurer, its parent company or its ultimate controlling entity, at the inception of this Policy or at any time thereafter, providing coverage to the Insured is or would be unlawful because it breaches an applicable embargo or sanction, that Insurer shall provide no coverage and have no liability whatsoever nor provide any defense to the Insured or make any payment of defense costs or provide any form of security on behalf of the Insured, to the extent that it would be in breach of such embargo or sanction. For the purposes of this clause, the Insurer is AIG Australia limited and the Insured is the Customer.

For those Customers with a history of significantly high claims, HP also reserves the right to work with the customer to limit any subsequent claims.

The Customer has the responsibility to report any accidental damage to HP within 30 days of the incident date so that HP can expedite repair. HP reserves the right to deny repair under this coverage program for damages which have been reported more than 30 days after the incident date. If protective items such as covers, carrying cases or pouches, etc., were provided or made available for use with the covered product, it is the Customer's responsibility to continually use these product accessories for protection against damage to the covered product.

Accidental damage protection (A\$55 (plus GST) service fee per claim)

Additional details and exclusions for this Accidental damage protection cover:

Maximum benefit - The maximum number of component parts that we will cover for the Product is 3 parts per individual year of cover.

Accidental damage protection (nil service fee)

Additional details and exclusions pertaining to applicable 3, 4 or 5 year accidental damage protection (excluding care pack part numbers listed above):

Service Fee- no service fee is payable for accidental damage protection.

Maximum benefit – There is a maximum number of 3 claims throughout the total coverage period (either 3 or 4 or 5 year coverage period).

Limitations to the defective media retention and comprehensive defective material retention service feature options

The defective media retention and comprehensive defective material retention service feature options apply only to eligible data retentive components replaced by HP due to malfunction. It does not apply to any exchange of data retentive components that have not failed.

Data Retentive components that are specified by HP as consumable parts and/or that have exceeded an acceptable maximum usage rate or duty cycle (including as specified in the manufacturer's operating manual, the product QuickSpecs, or the technical data sheet) are not eligible for the defective media retention or the comprehensive defective material retention service feature option.

Defective media retention service and comprehensive defective material retention service coverage for options designated by HP as requiring separate coverage, if available, must be configured and purchased separately.

SUBJECT TO ANY RIGHTS CUSTOMER MAY HAVE AT LAW WHICH CANNOT BE EXCLUDED, LIMITED OR MODIFIED, HP SHALL HAVE NO OBLIGATION WHATSOEVER WITH RESPECT TO THE CONTENTS OF OR THE DESTRUCTION OF ANY DATA RETENTIVE COMPONENT RETAINED BY THE CUSTOMER. NOTWITHSTANDING ANYTHING IN THIS AGREEMENT TO THE CONTRARY, IN NO EVENT WILL HP OR ITS AFFILIATES, SUBCONTRACTORS, OR SUPPLIERS BE LIABLE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR DAMAGES FOR LOSS OF OR MISUSE OF DATA UNDER THIS DEFECTIVE MEDIA RETENTION OR COMPREHENSIVE DEFECTIVE MATERIAL RETENTION SERVICE. NEITHER PARTY LIMITS THEIR LIABILITY FOR LIABILITY WHICH MAY NOT BE EXCLUDED, MODIFIED OR LIMITED BY APPLICABLE LAW.

General provisions/Other exclusions

HP will acknowledge a call by logging a case, communicating the case ID to the Customer, and confirming the Customer's incident severity and time requirements for commencement of remedial action. Note: For events received via the HP electronic remote support solutions, HP is required to contact the Customer, determine the incident severity with the Customer, and arrange access to the system before the hardware call-to-repair time or hardware onsite response time period can start.

Incident severity is defined as:

- Severity 1—Critical Down: for example, production environment down: production system or production application down/at severe risk; data corruption/loss or risk; business severely affected; safety issues
- Severity 2—Critically Degraded: for example, production environment severely impaired; production system or production application interrupted/compromised; risk of reoccurrence; significant impact on business
- Severity 3—Normal: for example, non-production system (e.g., test system) down or degraded; production system or production application degraded with workaround in place; non-critical functionality lost; limited impact on the business
- Severity 4—Low: for example, no business or user impact

Travel zones

All hardware onsite response times apply only to sites located within 80km of an HP designated support hub.

Response times to sites located more than 80km from an HP designated support hub will have

modified response times for extended travel, as shown in the table below.

A call-to-repair time commitment is available for sites located within 50 miles (80 km) of an HP designated support hub.

For sites that are located within 51 to 100 miles (81 to 160 km) of an HP designated support hub, an adjusted hardware call-to-repair time commitment applies, as shown in the table below.

The hardware call-to-repair time commitment is not available for sites located more than 100 miles (160 km) from an HP designated support hub.

Distance from HP designated support hub	4-hour onsite response time	Next-/third-day onsite response time
0–80 km	4 hours	Next/third coverage day
81–160 km	8 hours	1 additional coverage day
161–240 km	Established at time of order and subject to resource availability	2 additional coverage days
Beyond 240 km	Established at time of order and subject to resource availability	Established at time of order and subject to resource availability

Distance from HP designated support hub	6-hour hardware call-to-repair time commitment	Next-/third-day onsite response time
0–80 km	6 hours	24 hours
Beyond 80 km	Established at time of order and subject to resource availability	Established at time of order and subject to resource availability

Ordering information

All units and options with individually sold HP Care Pack services must be ordered with the same service level as the product they are contained in if that service level is available for those units and options.

Save for any condition, warranty, guarantee, right or remedy the Customer may have at law which cannot be excluded, limited or modified (including a consumer guarantee under the Australian Consumer Law), availability of service features and service levels may vary according to local resources and may be restricted to eligible products and geographic locations. To obtain further information or to order HP Hardware Support Onsite Service, contact a local HP sales representative and reference the following product numbers ('x' denotes the service length in years):

- HA101Ax for next-day response, standard business hours (9x5)
- HA103Ax for 4-hour response, extended business hours (13x5)
- HA104Ax for 4-hour response, 24x7
- HA105Ax for 6-hour call-to-repair, 24x7

Depending on the point of purchase and the requested service-level option, other product numbers may apply. Please consult a local HP representative or HP reseller regarding which product number will best meet your specific needs.

For more information

For more information on HP Services, contact any of our worldwide sales offices or resellers or visit one of the following websites:

HP Care Pack Services: hp.com.au/carepack

Get connected hp.com/go/getconnected

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The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services (subject to a customer's additional rights under the Australian Consumer Law). Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

4AA6-2845EEAU, June 2020



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Highly secure and easy to manage remotely with AMD PRO manageability, the HP EliteBook 865 has the performance you for complex workloads and a sophisticated design.

Collaborate with confidence

Bring authenticity to your online meetings in a hybrid work world with optional 5G connectivity.⁴ Make virtual meetings more human and interactive with HP Presence^{17,5} technology like a 5MP IR auto tracking camera with an 88-degree wide-viewing angle, and Audio by Bang & Olufsen.

Protected by HP Wolf Security

HP Wolf Security for Business creates a hardware-enforced, always-on, resilient defense. From the BIOS to the browser, above, in, and below the OS, these constantly evolving solutions help protect your PC from modern threats.⁶



*Product image may differ from actual product

Sustainability in action

Outer box packaging 100% sustainably sourced⁸

This PC contains at least 30-percent post-consumer recycled plastic in the bezel, at least 50-percent post-consumer recycled plastic in the keycaps⁷, and the outer box packaging is 100-percent sustainably sourced.⁸



HP EliteBook 865 16 inch G10 Notebook PC

Featuring

Easy battery management

Manage battery performance and customize charging options with the easy-to-use HP Power Manager dashboard.⁹

Dual video stream

Stream one video of you and another of an object with support for dual video streams and camera switching.¹⁰

HP Presence

Move freely, and look your best, even in low light conditions during video calls enhanced by HP Presence.^{5,11}

Be right back

When you need a break during calls change your video feed to a still picture with Be Right Back.¹¹

HP Keystone Correction

HP Keystone Correction automatically crops and flattens the image feed of whiteboards and documents.¹¹

myHP

Enable hardware and software innovations from HP with the myHP application.¹²

HP Auto Frame

Move around a little without losing viewers' attention during video calls with optional HP Auto Frame.¹¹

Background Adjustment

Keep a consistent look across all your videoconferencing apps with Background Adjustment.¹¹

Aware of its surroundings

HP Context Aware provides AI-based optimization to maximize performance, comfort, and responsiveness.¹³

See colors as they should be

Make the color of your screen look consistent in any light with the Adaptive Color.¹²

Comfortable viewing

Optional TÜV certified HP Eye Ease low blue light panels help remove blue light waves.¹⁴

Fast and efficient wireless LAN

Get a fast and reliable connection in dense wireless environments with gigabit data rate Wi-Fi 6E.^{15,16}



HP EliteBook 865 16 inch G10 Notebook PC

Technical specifications

Available Operating Systems	Windows 11 Pro ¹ Windows 11 Pro Education ¹ Windows 11 Home ¹ Windows 11 Home Single Language – HP recommends Windows 11 Pro for business ¹ Windows 11 Pro (Windows 11 Enterprise or Windows 10 Enterprise available with a Volume Licensing Agreement) ¹ Windows 11 Pro (preinstalled with Windows 10 Pro Downgrade) ^{1,2} FreeDOS ¹
Processor family³	AMD Ryzen™ 5 processor AMD Ryzen™ 7 processor
Available Processors^{3,4,5,6}	AMD Ryzen™ 7 7840U with AMD Radeon™ Graphics (3.5 GHz base clock, up to 4.9 GHz max boost clock, 16 MB L3 cache, 8 cores, 16 threads) AMD Ryzen™ 5 7540U with AMD Radeon™ Graphics (3.5 GHz base clock, up to 4.9 GHz max boost clock, 16 MB L3 cache, 6 cores, 12 threads) AMD Ryzen™ 7 7840HS with Radeon™ Graphics (3.8 GHz base clock, up to 5.1 GHz max boost clock, 16 MB L3 cache, 8 cores, 16 threads) AMD Ryzen™ 9 7940HS with Radeon™ Graphics (4.0 GHz base clock, up to 5.2 GHz max boost clock, 16 MB L3 cache, 8 cores, 16 threads) AMD Ryzen™ 3 7440U with AMD Radeon™ Graphics (3.0 GHz base clock, up to 4.7 GHz max boost clock, 8 MB L3 cache, 4 cores, 8 threads)
Maximum memory	64 GB DDR5-5600 MHz RAM; ²⁸ Dual channel support.
Memory slots	2 SODIMM
Internal storage	512 GB up to 2 TB PCIe® Gen4x4 NVMe™ M.2 SSD TLC ⁷ 256 GB up to 1 TB PCIe® Gen4x4 NVMe™ M.2 SED SSD TLC ⁷ 256 GB up to 512 GB PCIe® NVMe™ Value M.2 SSD ⁷
Display size (diagonal, metric)	40.6 cm (16")
Display	16" diagonal, WUXGA (1920 x 1200), touch, IPS, anti-glare, 250 nits, 45% NTSC; 16" diagonal, WUXGA (1920 x 1200), IPS, anti-glare, 250 nits, 45% NTSC; 16" diagonal, WUXGA (1920 x 1200), IPS, anti-glare, 400 nits, low power, 100% sRGB with HP Eye Ease; 16" diagonal, WUXGA (1920 x 1200), IPS, anti-glare, 1000 nits, 100% sRGB, HP Sure View Reflect integrated privacy screen with HP Eye Ease ^{12,13,14} 40.6 cm (16") diagonal, WUXGA (1920 x 1200), touch, IPS, anti-glare, 250 nits, 45% NTSC; 40.6 cm (16") diagonal, WUXGA (1920 x 1200), IPS, anti-glare, 250 nits, 45% NTSC; 40.6 cm (16") diagonal, WUXGA (1920 x 1200), IPS, anti-glare, 400 nits, low power, 100% sRGB with HP Eye Ease; 40.6 cm (16") diagonal, WUXGA (1920 x 1200), IPS, anti-glare, 1000 nits, 100% sRGB, HP Sure View Reflect integrated privacy screen with HP Eye Ease ^{12,13,14}
Available Graphics	Integrated: AMD Radeon™ Graphics ¹² (Support HD decode, DX12, HDMI 2.0, HDCP 2.3.)
Audio	Bang & Olufsen, dual stereo speakers, dual array microphones
Wireless technologies	Realtek Wi-Fi 6E RTL8852CE 802.11a/b/g/n/ax (2x2) and Bluetooth® 5.3 wireless card; MediaTek Wi-Fi 6E RZ616 (2x2) and Bluetooth® 5.3 wireless card (Compatible with Miracast-certified devices.) NFC Mirage WNC XRAV-1
Ports and connectors	2 Thunderbolt™ 4 with USB Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4); 2 USB Type-A 5Gbps signaling rate (1 charging); 1 HDMI 2.1; 1 stereo headphone/microphone combo jack ⁸ ; (HDMI cable sold separately.)
Input devices	HP Premium Keyboard – spill-resistant with optional backlit keyboard; Clickpad with multi-touch gesture support, taps enabled as default
Communications	Intel® XMM™ 7560 LTE Advanced Pro
Camera	HP True Vision 5 MP camera with integrated dual array digital microphones
Software	HP Connection Optimizer; HP Hotkey Support; HP Support Assistant; HP Easy Clean; HP Power Manager; myHP; HP Privacy Settings; HP Notifications; HP PC Hardware Diagnostics Windows; HP Services Scan; HP Smart Support (download) Buy Office (Sold separately) ^{15,16,17,18,19}
Security management	Absolute persistence module; HP Secure Erase; HP Sure Click; HP Sure Recover; HP Sure Run; HP Sure Sense; BIOS Update via Network; HP Sure Admin; HP BIOSphere Gen6; TPM 2.0 embedded security chip (Common Criteria EAL4+ and FIPS 140-2 Level 2 Certified); HP Sure Start Gen7; HP Wake on WLAN; HP Tamper Lock; Secured-Core PC Enable
Security Software Licenses	HP Wolf Pro Security Edition ⁵⁶
Fingerprint reader	Fingerprint sensor (select models)



HP EliteBook 865 16 inch G10 Notebook PC

Technical specifications

Management features	HP Client Management Script Library (download); HP Driver Packs (download); HP Client Catalog (download); HP Manageability Integration Kit Gen4 (download); HP Image Assistant Gen5 (download); HP Patch Assistant (download); HP Cloud Recovery; HP Connect for Microsoft Endpoint Manager ^{20,21,22,23}
Power	HP Smart 65 W USB Type-C® adapter ²⁵
Battery type	HP Long Life 3-cell, 51 Wh polymer; HP Long Life 6-cell, 76 Wh polymer ²⁴ ; Battery is internal and not replaceable by customer. Serviceable by warranty.
Battery life	Up to 23 hours and 30 minutes
Dimensions	14.12 x 9.88 x 0.76 in; 35.87 x 25.1 x 1.92 cm; 2.71 x 20.47 x 12 in 6.9 x 52 x 30.5 cm (Package)
Weight	Starting at 3.83 lb; Starting at 1.73 kg; (Weight will vary by configuration. Does not include power adapter.)
Ecolabels	EPEAT® Gold registered; SEPA; TCO Certified ²⁷
Energy star certified	ENERGY STAR® certified
Certification and compliance	CCC; CECP; GS Mark
Warranty	1-year and 3-year limited warranties and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty. Refer to http://www.hp.com/support/batterywarranty/ for additional battery information. On-site service and extended coverage is also available. HP Care Pack Services are optional extended service contracts that go beyond the standard limited warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: http://www.hp.com/go/cpc .



HP EliteBook 865 16 inch G10 Notebook PC

Footnotes

Key Selling Points Footnotes

² Multi-core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. AMD's numbering is not a measurement of clock speed.

³ Sold separately or as an optional feature.

⁴ Intel® 5G module is optional and must be configured at the factory. Module designed for 5G SA (standalone), and 5G NR NSA (non-standalone) networks as carriers deploy Evolved-Universal Terrestrial Radio Access New Radio Dual Connectivity (ENDC) with both 100Mhz of 5G NR and LTE channel bandwidth, using 256QAM 4x4 as defined by 3GPP. Module requires activation and separately purchased service contract. Check with service provider for coverage and availability in your area. Data connection, upload and download speeds will vary due to network, location, environment, network conditions, and other factors. Backwards compatible to 4G LTE and 3G HSPA technologies. 5G module planned to be available in select platforms and select countries, where carrier supported.

⁵ Select HP Products are enhanced with HP Presence. Features vary by platform.

⁶ HP Wolf Security for Business requires Windows 10 Pro and higher, includes various HP security features and is available on HP Pro, Elite, Workstation, and RPOS products. See product details for included security features.

⁷ Recycled plastic content percentage is based on the definition set in the IEEE 1680:1-2018 standard.

⁸ 100% outer box packaging made from sustainably sourced certified and recycled fibers. Fiber cushions made from 100% recycled wood fiber and organic material. Any plastic cushions are made from >90% recycled plastic.

⁹ HP Power Manager requires Windows 10 and higher and can be downloaded from the Microsoft Store.

¹⁰ Dual video streams and camera switching with Multi-Camera requires second camera that is sold separately or as an optional feature and requires myHP application.

¹¹ Requires myHP application and Windows OS.

¹² Requires Windows OS.

Feature Messaging Footnotes

¹³ Available on select HP PCs with Windows 10.

¹⁴ Low blue light panel is only available with 400nit, non-touch, models without HP Sure View Reflect.

¹⁵ Wi-Fi 6E requires a Wi-Fi 6E router, sold separately to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.

¹⁶ Wi-Fi® supporting gigabit data rate is achievable with Wi-Fi 6E (802.11ax) when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 160MHz channels.

¹⁷ HP conferencing features require Windows and the latest myHP app, available over the air or for download via sofpaq on the HP Support website. Planned availability in spring 2023.

Technical Specifications Footnotes

¹ Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com>.

² This system is preinstalled with Windows 10 Pro software and also comes with a license for Windows 11 Pro software and provision for recovery software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.

³ In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on <http://www.support.hp.com>.

⁴ Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. AMD's numbering is not a measurement of clock speed.

⁵ Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.

⁶ Max Boost clock frequency performance varies depending on hardware, software and overall system configuration.

⁷ For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10 and 11) is reserved for system recovery software.

⁸ SuperSpeed USB 20Gbps is not available with Thunderbolt™ 4.

¹² HD content required to view HD images.

¹³ Actual brightness will be lower with touchscreen or Sure View.

¹⁴ HP Sure View Reflect integrated privacy screen is an optional feature that must be configured at purchase and is designed to function in landscape orientation.

¹⁵ HP Smart Support requires HP TechPulse to be installed. For more information about how to enable or to download HP Smart Support, please visit <http://www.hp.com/smart-support>.

¹⁶ HP Services Scan is provided with Windows Update on select products and will check entitlement on each hardware device to determine if an HP TechPulse-enabled service has been purchased, and will download applicable software automatically. HP TechPulse is a telemetry and analytics platform that provides critical data around devices and applications and is not sold as a standalone service. HP TechPulse follows stringent GDPR privacy regulations and is ISO27001, ISO27701, ISO27017 and SOC2 Type2 certified for Information Security. Internet access with connection to TechPulse portal is required. For full system requirements or to disable this feature, please visit <http://www.hpdaas.com/requirements>. Not applicable in China.

¹⁷ HP Support Assistance requires Windows and Internet Access

¹⁸ HP Power Manager requires Windows 10 and higher and can be downloaded from the Microsoft Store.

¹⁹ Microsoft Office sold separately and requires Internet access for activation.

²⁰ HP Connect for Microsoft Endpoint Manager is available from the Azure Market Place for HP Pro, Elite, Z and Point-of-Sale PCs managed with Microsoft Endpoint Manager. Subscription to Microsoft Endpoint Manager required and sold separately. Network connection required.

²¹ HP Manageability Integration Kit can be downloaded from <http://www8.hp.com/us/en/ads/clientmanagement/overview.html>.

²² HP Patch Assistant available on select HP PCs with the HP Manageability Kit that are managed through Microsoft System Center Configuration Manager. HP Manageability Integration Kit can be downloaded from <http://www8.hp.com/us/en/ads/clientmanagement/overview.html>.

²³ HP Cloud Recovery is available for Z by HP, HP Elite and Pro desktops and laptops PCs with Intel® or AMD processors and requires an open, wired network connection. Note: You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Details please refer to: <https://support.hp.com/us-en/document/c05115630>.

²⁴ Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors.

²⁵ Availability may vary by country.

²⁶ HP Fingerprint sensor is an optional feature that must be configured at purchase.

²⁷ Based on US EPEAT® registration according to IEEE 1680:1-2018 EPEAT®. Status varies by country. Visit www.epeat.net for more information.

²⁸ Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.

²⁹ HP Sure Click requires Windows 10 Pro or higher or Enterprise. See https://bit.ly/2PrLT6A_SureClick for complete details.

³⁰ HP Sure Sense is available on select HP PCs with Windows 10 Pro, Windows 10 Enterprise, Windows 11 Pro, or Windows 11 Enterprise OS25. HP Sure Run Gen5 is available on select HP PCs and requires Windows 10 and higher.

³¹ HP Sure Run Gen5 is available on select HP PCs and requires Windows 10 and higher.

³² HP Sure Recover Gen5 with Embedded Reimaging is an optional feature which requires Windows 10 and higher must be configured at purchase. You must back up important files, data, photos, videos, etc. before use to avoid loss of data.

Network based recovery using Wi-Fi is only available on PCs with Intel Wi-Fi Module

³³ HP Sure Start Gen7 is available on select HP PCs and requires Windows 10 and higher.

³⁴ HP Sure Admin requires Windows 10 or higher, HP BIOS, HP Manageability Integration Kit from <http://www.hp.com/go/clientmanagement> and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store.

³⁵ HP Client Security Manager Gen7 requires Windows and is available on the select HP Elite and Pro PCs.

³⁶ HP BIOSphere Gen6 features may vary depending on the platform and configuration.

³⁷ HP Secure Erase for the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.

³⁸ Absolute firmware module is shipped turned off and can only be activated with the purchase a license subscription and full activation of the software agent. License subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. Certain conditions apply. For full details visit: <https://www.absolute.com/about/legal/agreements/absolute/>.

³⁹ Secured-Core PC Enable requires an Intel® vPro®, AMD Ryzen™ Pro processor or Qualcomm® processor with SD850 or higher and requires 8 GB or more system memory. Secured-core PC is enabled from the factory.

⁵⁶ HP Wolf Pro Security Edition (including HP Sure Click Pro and HP Sure Sense Pro) is available preloaded on select SKUs and, depending on the HP product purchased, includes a paid 1-year or 3-year license. The HP Wolf Pro Security Edition software is licensed under the license terms of the HP Wolf Security Software - End-User license Agreement (EULA) that can be found at: https://support.hp.com/us-en/document/ish_3875769-3873014-16 as that EULA is modified by the following: "7. Term. Unless otherwise terminated earlier pursuant to the terms contained in this EULA, the license for the HP Wolf Pro Security Edition (HP Sure Sense Pro and HP Sure Click Pro) is effective upon activation and will continue for either a twelve (12) month or thirty-six (36) month license term ("Initial Term"). At the end of the Initial Term you may either (a) purchase a renewal license for the HP Wolf Pro Security Edition from HP.com, HP Sales or an HP Channel Partner, or (b) continue using the standard versions of HP Sure Click and HP Sure Sense at no additional cost with no future software updates or HP Support."



HP Elite SFF 600 G9 Desktop PC

Optimized for expandability

The HP Elite 600 SFF Desktop PC delivers uncompromising performance, expandability, and reliability in a space-saving design. Equipped with the latest Intel® processor², speedy storage, and memory, this is the right PC for big jobs performed in smaller workspaces.

Expansion for the future

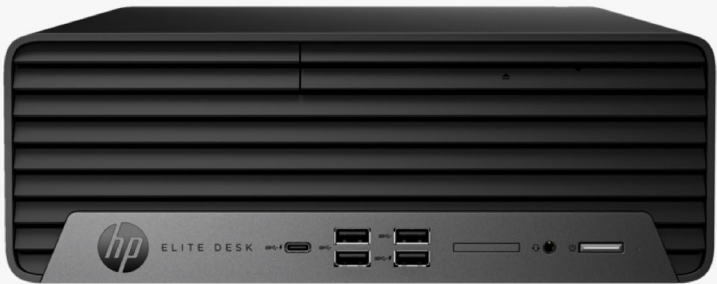
Future proof your fleet with up to two PCIe Gen4 SSDs, two HDDs, and four native PCIe Slots that provide enormous expansion. Help ensure broad compatibility with evolving technology with serial ports, a configurable rear I/O port³, and 11 USB ports.

Breakthrough performance

Power users with heavy workloads will enjoy 13th gen Intel® processors², fast dual PCIe Gen 4 storage³, and optional AMD Radeon™ RX6300 graphics.³ Get ready for an immersive experience with the ability to connect up to seven monitors.⁴

Protected by HP Wolf Security

HP Wolf Security for Business creates a hardware-enforced, always-on, resilient defense. From the BIOS to the browser, above, in, and below the OS, these constantly evolving solutions help protect your PC from modern threats.⁵



*Product image may differ from actual product

Sustainability in action

Help protect our shared future

At least 60 percent of all plastic used in this PC is post-consumer recycled plastic.⁶ The outer box packaging is 100 percent sustainably sourced.⁷ This PC is ENERGY STAR® certified and EPEAT® registered in 23 countries.⁸



HP Elite SFF 600 G9 Desktop PC

Featuring

Expansion for the future

Future proof your fleet with up to two PCIe Gen4 SSDs, two HDDs, and four native PCIe Slots that provide enormous expansion. Help ensure broad compatibility with evolving technology with serial ports, a configurable rear I/O port³, and 11 USB ports.

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Protected by HP Wolf Security

HP Wolf Security for Business creates a hardware-enforced, always-on, resilient defense. From the BIOS to the browser, above, in, and below the OS, these constantly evolving solutions help protect your PC from modern threats.⁵

Help protect our shared future

At least 60 percent of all plastic used in this PC is post-consumer recycled plastic.⁶ The outer box packaging is 100 percent sustainably sourced.⁷ This PC is ENERGY STAR® certified and EPEAT® registered in 23 countries.⁸

Handle data with agility

Quickly access and transfer data to keep up with today's changing business requirements with PCIe Gen4 SSDs.

Work hard without sounding like it

Focus on work while enjoying whisper quiet operation. The HP Elite 600 SFF utilizes HP Run Quiet Design that finely tunes the fans to keep systems running quiet and cool.

Promote cleanliness

Tested for 1000 cleanings, high-touched exterior surfaces can be cleaned using commonly available household disinfecting and cleaning wipes.

Built-in durability

Rest easy with a PC that undergoes 120,000 hours of HP's Total Test Process and MIL-STD 810 testing. Help extend protection with an optional removable dust filter.

Automatic recovery from firmware attacks

Firmware attacks can completely devastate your PC. Stay protected with HP Sure Start Gen7, the self-healing BIOS that automatically recovers itself from attacks or corruption.

Keep your PC's security protections in place

Stop unwanted changes to security settings and help limit the spread of malware with HP Sure Run Gen5 which identifies, quarantines, and provides reporting on attackers trying to kill processes.



HP Elite SFF 600 G9 Desktop PC

Technical specifications

Available Operating Systems	Windows 11 Pro ¹ Windows 11 Pro Education ¹ Windows 11 Home – HP recommends Windows 11 Pro for business ¹ Windows 11 Home Single Language – HP recommends Windows 11 Pro for business ¹ Windows 11 Pro (preinstalled with Windows 10 Pro Downgrade) ^{1,2} FreeDOS
Processor family	Intel® Pentium® processor Intel® Celeron® processor 13th Generation Intel® Core™ i7 processor 13th Generation Intel® Core™ i5 processor 13th Generation Intel® Core™ i3 processor 12th Generation Intel® Core™ i7 processor 12th Generation Intel® Core™ i5 processor 12th Generation Intel® Core™ i3 processor
Available Processors ^{4,5,6}	Intel® Pentium® Gold G7400 with Intel® UHD Graphics (3.7 GHz P-core base frequency, 6 MB L3 cache, 2 P-cores, 4 threads) Intel® Celeron® G6900 with Intel® UHD Graphics (3.4 GHz P-core base frequency, 4 MB L3 cache, 2 P-cores, 2 threads) Intel® Core™ i5-12600 with Intel® UHD Graphics (3.3 GHz P-core base frequency, up to 4.8 GHz P-core Max Turbo frequency, 18 MB L3 cache, 6 P-cores, 12 threads), supports Intel® vPro® Technology Intel® Core™ i5-12500 with Intel® UHD Graphics (3.0 GHz P-core base frequency, up to 4.6 GHz P-core Max Turbo frequency, 18 MB L3 cache, 6 P-cores, 12 threads), supports Intel® vPro® Technology Intel® Core™ i5-12400 with Intel® UHD Graphics (2.5 GHz P-core base frequency, up to 4.4 GHz P-core Max Turbo frequency, 18 MB L3 cache, 6 P-cores, 12 threads) Intel® Core™ i3-12300 with Intel® UHD Graphics (3.5 GHz P-core base frequency, up to 4.4 GHz P-core Max Turbo frequency, 12 MB L3 cache, 4 P-cores, 8 threads) Intel® Core™ i3-12100 with Intel® UHD Graphics (3.3 GHz P-core base frequency, up to 4.3 GHz P-core Max Turbo frequency, 12 MB L3 cache, 4 P-cores, 8 threads) Intel® Core™ i7-12700 with Intel® UHD Graphics (1.6 GHz E-core base frequency, 21 GHz P-core base frequency, up to 3.6 GHz E-core Max Turbo frequency, up to 4.8 GHz P-core Max Turbo frequency, up to 4.9 GHz with Intel® Turbo Boost Technology, 25 MB L3 cache, 8 P-cores and 4 E-cores, 20 threads), supports Intel® vPro® Technology Intel® Core™ i3-13100 (4.5 GHz P-core base frequency, up to 3.4 GHz P-core Max Turbo frequency, 12 MB L3 cache, 8 P-cores and 0 E-cores, 8 threads) Intel® Core™ i7-13700 (1.5 GHz E-core base frequency, 21 GHz P-core base frequency, up to 4.1 GHz E-core Max Turbo frequency, up to 5.1 GHz P-core Max Turbo frequency, 30 MB L3 cache, 8 P-cores and 8 E-cores, 24 threads), supports Intel® vPro® Technology Intel® Core™ i5-13500 (1.8 GHz E-core base frequency, 2.5 GHz P-core base frequency, up to 3.5 GHz E-core Max Turbo frequency, up to 4.8 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads), supports Intel® vPro® Technology
Chipset ⁴	Intel® Q670 (vPro®)
Form factor	Small form factor
Maximum memory	128 GB DDR5-4800 SDRAM ^{7,8,9,41,42,46} Transfer rates up to 4400 MT/s.
Memory slots	4 DIMM
Internal storage	500 GB up to 2 TB SATA HDD ^{10,15} up to 500 GB SATA SED Opal 2 HDD ^{10,15} 256 GB up to 1 TB PCIe® NVMe™ M.2 SSD ^{10,15} 256 GB up to 2 TB PCIe® NVMe™ TLC M.2 SSD ^{10,15,44} 256 GB up to 512 GB PCIe® NVMe™ SED Opal 2 TLC M.2 SSD ^{10,15}
Optical drive	HP 9.5 mm Slim DVD-Writer; HP 9.5 mm Slim DVD-ROM ³
Available Graphics	Integrated: Intel® UHD Graphics 730; Intel® UHD Graphics 770; Intel® UHD Graphics 710 NVIDIA® T400 (4 GB GDDR6 dedicated); NVIDIA® T400 (2 GB GDDR6 dedicated); AMD Radeon™ RX 6300 Graphics (2 GB GDDR6 dedicated) ^{12,45}
Audio	Realtek ALC3252 codec, universal audio jack with CTIA and OMTP headset support
Expansion slots	1 M.2 2230; 2 PCIe 3 x1; 1 PCIe 3 x16 (wired as x4); 2 M.2 2280; 1 PCIe 4 x16 (1 M.2 2230 slot for WLAN and 2 M.2 2280 slots for storage)
Ports and connectors	Front: 1 headphone/microphone combo; 4 SuperSpeed USB Type-A 10Gbps signaling rate; 1 SuperSpeed USB Type-C™ 20Gbps signaling rate ; Rear: 1 audio-in/out; 1 RJ-45; 1 HDMI 1.4; 3 SuperSpeed USB Type-A 5Gbps signaling rate; 2 DisplayPort™ 1.4; 3 USB Type-A 480 Mbps signaling rate ; Optional Ports: Add-on card: 1 serial and PS/2 ports combination; Add-on port: 1 serial; Flex IO port – choose one of the following options: 1 DisplayPort™ 1.4, 1 HDMI 2.0b, 1 VGA, 1 serial, 1 Dual SuperSpeed USB Type-A 5Gbps signaling rate, 1 SuperSpeed USB Type-C™ 10Gbps signaling rate (15W output, DisplayPort™ 1.4), 1 Thunderbolt™ 3 (40Gbps signaling rate) with SuperSpeed USB Type-C™ 10Gbps signaling rate PCIe® card ^{12,13}
Input devices	HP PS/2 Business Slim Keyboard; HP USB Business Slim SmartCard CCID Keyboard; HP 125 Wired Keyboard; HP 125 Antimicrobial Wired Keyboard; HP 655 Wireless Keyboard and mouse combo; HP USB 320K Keyboard ¹⁶ ; HP PS/2 mouse; HP Wired Desktop 320M mouse; HP 125 Wired Mouse; HP 128 Laser Wired Mouse; HP 125 Antimicrobial Wired Mouse ¹⁶
Communications	LAN: Intel® Ethernet Network Adapter I225-T1; Intel® I219-LM GbE LOM, vPro® ¹⁴ ; Intel® Wi-Fi 6E AX211 (2x2) and Bluetooth® 5.3 wireless card, vPro®; Intel® Wi-Fi 6E AX211 (2x2) and Bluetooth® 5.3 wireless card, non-vPro®; Realtek Wi-Fi 6 RTL8852BE 802.11a/b/g/n/ax (2x2) and Bluetooth® 5.3 wireless card ^{40,43}
Drive Bays	Two 3.5"; 1 slim ODD or 1 M.2 SSD bay ¹¹
Environmental	Operating temperature: 10 to 35°C; Operating humidity: 10 to 90% RH
Software	HP Notifications; HP PC Hardware Diagnostics UEFI; HP Support Assistant; HP Connection Optimizer; HP Privacy Settings; HP PC Hardware Diagnostics Windows; HP Desktop Support Utilities; HP Easy Clean; Touchpoint Customizer for Commercial; HP Easy Clean Keyboard Driver; HSA Fusion for Commercial; HSA Telemetry for Commercial; HPX for CMIT ^{18,19,39}
Available software	HP Smart Support ²⁰
Security management	Trusted Platform Module TPM 2.0 Embedded Security Chip shipped with Windows 10 (Common Criteria EAL4+ Certified)(FIPS 140-2 Level 2 Certified); HP Secure Erase; HP Sure Click; Absolute Persistence module; HP Sure Admin; HP Client Security Manager Gen7; HP Tamper Lock; HP Sure Start Gen7; HP Sure Sense2; HP Sure Run Gen5; HP Sure Recover Gen5 ^{21,22,23,24,25,26,27,28,29,30}
Security Software Licenses	HP Wolf Pro Security Edition ⁵⁶



HP Elite SFF 600 G9 Desktop PC

Technical specifications

Management features	HP Client Catalog (download); HP Driver Packs (download); HP Image Assistant; HP Client Management Script Library (download); HP Connect for Microsoft Endpoint Manager; HP Manageability Integration Kit (download); HP Patch Assistant (download) ^{17,37,38}
Power	260 W internal power adapter, up to 92% efficiency, active PFC
Dimensions	13.3 x 12.13 x 3.94 in 33.8 x 30.8 x 10 cm 15.71 x 19.65 x 8.98 in 39.9 x 49.9 x 22.8 cm (Package)
Weight	11.11 lb 5.04 kg (Exact weight depends on configuration.)
Ecolabels	EPEAT® Gold registered
Energy star certified (series fixed)	ENERGY STAR® certified
Sustainable impact specifications	Low Halogen; Bulk packaging available; Molded paper pulp cushion inside box is 100% sustainably sourced and recyclable; Outside box and corrugated cushions are 100% sustainably sourced and recyclable; Ocean-bound plastic in speaker enclosure and I/O strip; 60% post-consumer recycled plastic; 10% ITE-derived closed loop plastic; 80 Plus® Platinum power supplies available ^{31,32,33,34,35,36}



HP Elite SFF 600 G9 Desktop PC

Footnotes

Key Selling Points Footnotes

- ¹ HP Wolf Security for Business requires Windows 10 and higher, includes various HP security features and is available on HP Pro, Elite, Workstation, and RPOS products. See product details for included security features and OS requirements.
- ² Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
- ³ Optional feature that must be configured at the time of purchase.
- ⁴ Seven monitors sold separately and connection to seven monitors only supported on PCs equipped with NVIDIA® T400 discrete graphics card and compatible flex I/O ports that must be configured at the time of purchase.
- ⁵ Recycled plastic content percentage is based on the definition set in the IEEE 16801-2018 standard.
- ⁷ 100% outer box packaging made from sustainably sourced certified and recycled fibers. Fiber cushions made from 100% recycled wood fiber and organic material. Any plastic cushions are made from >90% recycled plastic.
- ⁸ Based on US EPEAT® registration according to IEEE 16801-2018 EPEAT®. EPEAT® status varies by country. Visit www.epeat.net for more information.
- ¹² Select household wipes can be safely used to clean select HP commercial PCs. See wipe manufacturer's instructions for disinfecting and the HP cleaning guide for HP tested wipe solutions at <https://www.hp.com/v2/GetDocument.aspx?docname=4AA7-7610ENW> not applicable to HP Elite c1030 Chromebook.

Technical Specifications Footnotes

- ¹ Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com>.
- ² This system is preinstalled with Windows 10 Pro software and also comes with a license for Windows 11 Pro software and provision for recovery software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.
- ³ HD-DVD disks cannot be played on the DVD-ROM drive. No support for DVD-RAM. Actual speeds may vary. Don't copy copyright-protected materials. Double Layer discs can store more data than single layer discs. Discs burned with this drive may not be compatible with many existing single-layer DVD drives and players. Flawless playback on all systems is not guaranteed.
- ⁴ For full Intel® vPro® functionality, Windows 10 Pro 64 bit, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or WLAN card and TPM 2.0 are required. Some functionality requires additional 3rd party software in order to run. See <http://intel.com/vpro>
- ⁵ Multi-core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
- ⁶ Intel® Turbo Boost technology requires a PC with a processor with Intel Turbo Boost capability. Intel Turbo Boost performance varies depending on hardware, software and overall system configuration. See www.intel.com/technology/turboboost for more information.
- ⁷ Memory modules support data transfer rates up to 4800 MT/s; system speed up to 4400 MT/s, following Intel's design guideline. Actual data rate is determined by the system configuration.
- ⁸ System architecture design is 2 DIMMS per channel and the population starts from the furthest memory slot from the processor.
- ⁹ Symmetric configurations are required for the 2 DIMMs within the same memory channel.
- ¹⁰ For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows) of disk is reserved for system recovery software.
- ¹¹ PC can only be configured with one of these three available optional features: slim ODD or removable HDD or M.2 SSD bay.
- ¹² Sold separately or as an optional feature.
- ¹³ Thunderbolt™ 3.0 and Serial/PS/2 combo occupies a PCIe slot.
- ¹⁴ Intel® Ethernet Network Adapter I225-T1; sold separately or as an optional feature.
- ¹⁵ Starting from November 1st 2023, all shipments will require Windows to be installed on SSD to provide users a better experience. HDD can only be configured as additional data drives and not the boot drive.
- ¹⁶ Availability varies by countries.
- ¹⁷ HP Manageability Integration Kit can be downloaded from <http://www.hp.com/go/clientmanagement>.
- ¹⁸ HP Quick Drop requires Internet access and Windows 10 PC preinstalled with HP QuickDrop app and either an Android device (phone or tablet) running Android 7 or higher with the Android HP QuickDrop app, and/or an iOS device (phone or tablet) running iOS 12 or higher with the iOS HP QuickDrop app.
- ¹⁹ HP Support Assistant: Requires Windows and Internet access.
- ²⁰ HP Smart Support requires HP TechPulse to be installed. For more information about how to enable or to download HP Smart Support, please visit <http://www.hp.com/smart-support>.
- ²¹ HP Sure Admin requires Windows 10 or higher, HP BIOS, HP Manageability Integration Kit from <http://www.hp.com/go/clientmanagement> and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store.
- ²² HP Sure Sense is available on select HP PCs and is not available with Windows 10 Home.
- ²³ HP BIOSphere Gen6 features may vary depending on the platform and configuration.
- ²⁴ HP Secure Erase for the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.
- ²⁵ HP Sure Run Gen5 is available on select HP PCs and requires Windows 10 or higher.
- ²⁶ HP Sure Click requires Windows 10 Pro or higher or Enterprise. See <https://bit.ly/2PrLT6A>, SureClick for complete details.
- ²⁷ HP Client Security Manager Gen7 requires Windows and is available on select HP Elite and Pro PCs.
- ²⁸ HP Sure Start Gen7 is available on select HP PCs.
- ²⁹ HP Sure Recover Gen5 is available on select HP PCs and requires Windows 10 or higher and an open network connection. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data. Network based recovery using Wi-Fi is only available on PCs with Intel Wi-Fi Module.
- ³⁰ Absolute firmware module is shipped turned off and can only be activated with the purchase a license subscription and full activation of the software agent. License subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. Certain conditions apply. For full details visit: <https://www.absolute.com/about/legal/agreements/absolute/>.
- ³¹ External power supplies, WWAN modules, power cords, cables and peripherals excluded. Service parts obtained after purchase may not be Low Halogen.
- ³² Percentage of ocean-bound plastic contained in each component varies by product.
- ³³ Recycled plastic content percentage is based on the definition set in the IEEE 16801-2018 standard.
- ³⁴ ITE Derived Closed Loop Plastic percentage is based on the definition set in the IEEE 16801-2018 standard.
- ³⁵ 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers.
- ³⁶ Molded pulp cushions are made from 100% recycled wood fiber and organic materials.
- ³⁷ HP Connect for Microsoft Endpoint Manager is available from the Azure Market Place for HP Pro, Elite, Z and Point-of-Sale PCs managed with Microsoft Endpoint Manager. Subscription to Microsoft Endpoint Manager required and sold separately. Network connection required.
- ³⁸ HP Patch Assistant available on select HP PCs with the HP Manageability Kit that are managed through Microsoft System Center Configuration Manager. HP Manageability Integration Kit can be downloaded from <http://www8.hp.com/us/en/ads/clientmanagement/overview.html>.
- ³⁹ myHP requires Windows OS.
- ⁴⁰ Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 is backwards compatible with prior 802.11 specs.
- ⁴¹ To achieve optimal memory speed, HP strongly recommends to use identical memory modules (e.g., same capacity, same part number and from the same supplier) within the same memory channel.
- ⁴² All memory slots are customer accessible / upgradeable.
- ⁴³ HP 800/600 G9 TWR/SFF requires Intel® 13th Gen processor to support Wi-Fi 6E and requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. Available in countries where Wi-Fi 6E is supported. For HP 800 G9 TWR/SFF without Intel® 13th Gen processors, the product does not support Wi-Fi 6E standard and does not operate under 6GHz band. The product is compatible with 6GHz and other routers, sold separately, which have capability to operate in 2.4GHz and 5GHz, in compliance with Wi-Fi 6 and prior 802.11 specs. The actual throughput depends on network condition and router configuration. Internet service required and public wireless access points are limited.
- ⁴⁴ 256 GB TLC M.2 SSD only available with 12th gen CPUs.
- ⁴⁵ T400 2 GB is only available with 12th gen CPUs.
- ⁴⁶ Optional vPro® Essentials or vPro® Enterprise.
- ⁴⁶ HP Wolf Pro Security Edition (including HP Sure Click Pro and HP Sure Sense Pro) is available preloaded on select SKUs and, depending on the HP product purchased, includes a paid 1-year or 3-year license. The HP Wolf Pro Security Edition software is licensed under the license terms of the HP Wolf Security Software - End-User license Agreement (EULA) that can be found at: https://support.hp.com/us-en/document/ish_3875769-3873014-16 as that EULA is modified by the following: "7. Term. Unless otherwise terminated earlier pursuant to the terms contained in this EULA, the license for the HP Wolf Pro Security Edition (HP Sure Sense Pro and HP Sure Click Pro) is effective upon activation and will continue for either a twelve (12) month or thirty-six (36) month license term ("Initial Term"). At the end of the Initial Term you may either (a) purchase a renewal license for the HP Wolf Pro Security Edition from HP.com, HP Sales or an HP Channel Partner, or (b) continue using the standard versions of HP Sure Click and HP Sure Sense at no additional cost with no future software updates or HP Support.



Overview

HP Elite x360 830 13 inch G10 2-in-1 Notebook PC



Left

- | | |
|---|--|
| <ul style="list-style-type: none"> 1. Internal Microphones (2) 2. Ambient Light Sensor (Optional) 3. Webcam 4. Camera Shutter 5. IR Camera (Optional) 6. IR Camera LEDs (Optional) 7. NFC Sensor | <ul style="list-style-type: none"> 8. Glass Clickpad 9. Smartcard Reader (Optional) 10. LED Indicator 11. Thunderbolt™ 4 with USB4 Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)¹ 12. Thunderbolt™ 4 with USB4 Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)¹ 13. SuperSpeed USB Type-A 5Gbps signaling rate (USB 3.2 Gen 1) 14. HDMI 2.1 Port (Cable not included) |
|---|--|

1. SuperSpeed USB 20Gbps is not available with Thunderbolt™ 4.

Overview



Right

- | | |
|--|---|
| 1. Power Button Key | 4. Nano Security Lock Slot (Lock sold separately) |
| 2. Audio Combo Jack | 5. SIM Card Slot (Optional) |
| 3. SuperSpeed USB Type-A 5Gbps signaling rate (Charging) (USB 3.2 Gen 1) | 6. Touch Fingerprint Sensor (Select models) |

Overview



Overview

At a Glance

- Preinstalled with Windows 11 versions or FreeDOS
- Premium ultraslim design with precision-crafted all-metal x360 design with four usage modes
- 13th Generation Intel® Core™ i5, i7 U-series Processors up to ten-core
- New LPDDR5-4800 memory with up to 32GB capacity
- 5MP camera with increased 88° field of view allows you to move around more freely in front of the camera or accommodate a group
- Optional ultrabright displays with HP Eye Ease, ambient light and ambient color sensors
- Choice of displays:
 - 33.8 cm (13.3") diagonal WUXGA IPS LED-backlit BrightView touch with Corning® Gorilla® Glass 5, 250 nits, 45% NTSC
 - 33.8 cm (13.3") diagonal WUXGA IPS LED-backlit BrightView touch with Corning® Gorilla® Glass 5, 400 nits, 100% sRGB with Low Power with HP Eye Ease
 - 33.8 cm (13.3") diagonal WUXGA IPS LED-backlit Anti-Glare glass touch with Corning® Gorilla® Glass 5, 400 nits, 100% sRGB with Low Power with HP Eye Ease
 - 33.8 cm (13.3") diagonal WUXGA IPS LED-backlit BrightView touch with Corning® Gorilla® Glass 5, 1000 nits, 100% sRGB with HP Sure View Reflect Integrated Privacy Screen with HP Eye Ease
 - 33.8 cm (13.3") diagonal WUXGA IPS LED-backlit Anti-Glare glass touch with Corning® Gorilla® Glass 5, 1000 nits, 100% sRGB with HP Sure View Reflect Integrated Privacy Screen with HP Eye Ease
- New enhanced HP Auto Frame provides improved face tracking and more natural framing movement
- New "Be Right Back" functionality allows you to set an image and notify meeting participants you'll "BRB" when you need to leave for a few minutes
- Choose from 38Whr or 51Whr battery options
- HP Wolf Security for Business creates a hardware-enforced, always-on, resilient defense
- Connectivity with optional Intel® 5000 5G/WWAN, and Thunderbolt™ Docking (Dock sold separately)
- Undergoes MIL-STD 810H tests¹
- An optional HP Rechargeable Active Pen with Magnetic Attach and 4096 Levels of pressure
- Supports fast charging (50% in 30 minutes) with no impact on battery recharge cycles
- Designed to support all HP docking options including the HP Universal Dock G5
- Can be wiped up to 10,000 times with germicidal cleaning wipes²

1. MIL-STD 810H is not intended to demonstrate fitness of U.S. Department of Defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Accidental damage requires an optional HP Accidental Damage Protection Care Pack.

2. Approved germicidal wipes for use on Select HP Platforms

<https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=4AA7-9819ENW>

NOTE: See important legal disclosures for all listed specs in their respective features sections.

Technical Specifications

PRODUCT NAME

HP EliteBook x360 830 13 inch G10 2-in-1 Notebook PC

OPERATING SYSTEMS

Preinstalled

Windows 11 Pro¹
Windows 11 Pro Education¹
Windows 11 Home – HP recommends Windows 11 Pro for Business¹
Windows 11 Home Single Language – HP recommends Windows 11 Pro for Business¹
Windows 11 Pro (Windows 11 Enterprise or Windows 10 Enterprise available with a Volume Licensing Agreement)¹
Windows 11 Pro (preinstalled with Windows 10 Pro Downgrade)^{1,2}
FreeDOS

1. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com>.

2. This system is preinstalled with Windows 10 Pro software and also comes with a license for Windows 11 Pro software and provision for recovery software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.

PROCESSORS

Processor 3,4,5,6,7	Cores	Number of P-cores	Number of E-cores	Threads	L3 Cache	Max Turbo Frequency		Base Frequency		Intel SIPP/vPro® Enterprise	Intel vPro® Essentials
						P- cores	E- cores	P- cores	E- cores		
Intel® Core™ i7-1365U	10	2	8	12	12 MB	5.2 GHz	3.9 GHz	1.8 GHz	1.3 GHz	X	
Intel® Core™ i7-1355U	10	2	8	12	12 MB	5.0 GHz	3.7 GHz	1.7 GHz	1.2 GHz		
Intel® Core™ i5-1345U	10	2	8	12	12 MB	4.7 GHz	3.5 GHz	1.6 GHz	1.2 GHz	X	
Intel® Core™ i5-1335U	10	2	8	12	12 MB	4.6 GHz	3.4 GHz	1.3 GHz	0.9 GHz		X

3. Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.

4. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.

Technical Specifications

5. Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See www.intel.com/technology/turboboost for more information.

6. In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on <http://www.support.hp.com>

7. Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd party software in order to run. Features of vPro® Essentials and Enterprise vary. See <http://intel.com/vpro>

CHIPSET

Chipset is integrated with processor

GRAPHICS

Integrated

Intel® Iris® Xe Graphics

Supports

Support HD decode, DX12, HDMI 2.1, HDCP 2.3 ⁸

8. HDMI cable sold separately

DISPLAY

Touch

33.8 cm (13.3") diagonal WUXGA Bent touch screen , BrightView UWVA, eDP, 250 nits, 45% NTSC with 5MP camera (1920 x 1200) ^{10,11,13}

33.8 cm (13.3") diagonal WUXGA Bent touch screen , BrightView UWVA, eDP, 250 nits, 45% NTSC with 5MP camera for WWAN(1920 x 1200) ^{10,11,13}

33.8 cm (13.3") diagonal WUXGA Bent touch screen, Low Blue Light, anti-glare UWVA eDP1.4+PSR, 400 nits, 100% sRGB, Low Power, Ambient Light Sensor+Ambient Color Sensor with 5MP+IR Camera (1920 x 1200) with HP Eye Ease ^{10,11,13}

33.8 cm (13.3") diagonal WUXGA Bent touch screen, Low Blue Light, anti-glare UWVA eDP1.4+PSR, 400 nits, 100% sRGB, Low Power, Ambient Light Sensor+Ambient Color Sensor with 5MP+IR Camera for WWAN (1920 x 1200) with HP Eye Ease ^{10,11,13}

33.8 cm (13.3") diagonal WUXGA Bent touch screen, Low Blue Light, BrightView UWVA eDP1.4+PSR, 400 nits, 100% sRGB, Low Power, Ambient Light Sensor+Ambient Color Sensor with 5MP+IR Camera (1920 x 1200) with HP Eye Ease ^{10,11,13}

33.8 cm (13.3") diagonal WUXGA Bent touch screen, Low Blue Light, BrightView UWVA eDP1.4+PSR, 400 nits, 100% sRGB, Low Power, Ambient Light Sensor+Ambient Color Sensor with 5MP+IR Camera for WWAN (1920 x 1200) with HP Eye Ease ^{10,11,13}

33.8 cm (13.3") diagonal WUXGA Bent touch screen, Low Blue Light, anti-glare UWVA eDP+PSR, 1000 nits, 100% sRGB with HP Sure View Reflect integrated privacy screen, Ambient Light Sensor+Ambient Color Sensor with 5MP+IR camera (1920 x 1200) with HP Eye Ease ^{10,11,12,13}

33.8 cm (13.3") diagonal WUXGA Bent touch screen, Low Blue Light, BrightView UWVA eDP+PSR, 1000 nits, 100% sRGB with HP Sure View Reflect integrated privacy screen, Ambient Light Sensor+Ambient Color Sensor with 5MP+IR camera (1920 x 1200) with HP Eye Ease ^{10,11,12,13}

Technical Specifications

33.8 cm (13.3") diagonal WUXGA Bent touch screen, Low Blue Light, anti-glare UWVA eDP+PSR, 1000 nits, 100% sRGB with HP Sure View Reflect integrated privacy screen, Ambient Light Sensor+Ambient Color Sensor with 5MP+IR camera for WWAN (1920 x 1200) with HP Eye Ease ^{10,11,12,13}

33.8 cm (13.3") diagonal WUXGA Bent touch screen, Low Blue Light, BrightView UWVA eDP+PSR, 1000 nits, 100% sRGB with HP Sure View Reflect integrated privacy screen, Ambient Light Sensor+Ambient Color Sensor with 5MP+IR camera for WWAN (1920 x 1200) with HP Eye Ease ^{10,11,12,13}

DisplayPort™ 1.4

HDMI 2.1 Support resolution up to 4K @60 Hz ⁹

Displays support

Supports dual display through the dock

Display Size (Diagonal)

13.3" diagonal

33.8 cm (13.3") diagonal

9. HDMI cable sold separately

10. HD content required to view HD images.

11. Resolutions are dependent upon monitor capability, and resolution and color depth settings.

12. HP Sure View Reflect integrated privacy screen is an optional feature that must be configured at purchase and is designed to function in landscape orientation.

13. Actual brightness will be lower with touchscreen or Sure View.

DOCKING (Sold Separately)

Docking station model #1	HP Thunderbolt 120W G4 Dock
Docking station model #2	HP Thunderbolt 280W G4 Dock
Docking station model #3	HP USB-C Dock G5
Docking station model #4	HP USB-C/A Universal Dock G2

For additional aftermarket options and docking specs please see page 42.

Technical Specifications

STORAGE AND DRIVES

Primary Storage

2 TB PCIe® Gen4x4 NVMe™ M.2 SSD TLC ¹⁴
1 TB PCIe® Gen4x4 NVMe™ NMIC SSD TLC ¹⁴
1 TB PCIe® Gen4x4 NVMe™ M.2 SSD TLC ¹⁴
1 TB PCIe® Gen4x4 NVMe™ SED TLC NMIC OPAL2 ¹⁴
1 TB PCIe® Gen4x4 NVMe™ SED TLC OPAL2 ¹⁴
512 GB PCIe® Gen4x4 NVMe™ SED TLC OPAL2 ¹⁴
512GB PCIe® Gen4x4 NVMe™ M.2 SSD TLC ¹⁴
512 GB PCIe® NVMe™ Value NMIC M.2 SSD ¹⁴
512 GB PCIe® NVMe™ Value M.2 SSD ¹⁴
256 GB PCIe® Gen4x4 NVMe™ Value SED TLC OPAL2¹⁴
256GB PCIe® NVMe™ Value M.2 SSD ¹⁴

14. For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10 and 11) is reserved for system recovery software.

MEMORY

Maximum Memory

32 GB LPDDR5-4800MHz RAM ¹⁵

Memory

32 GB LPDDR5-4800MHzRAM ¹⁵
16 GB LPDDR5-4800MHzRAM¹⁵
8 GB LPDDR5-4800 MHz RAM¹⁵

Memory Slots

Memory soldered down
LPDDR5, System runs at: 4800MHz
Supports Dual Channel Memory

15. Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.

Technical Specifications

NETWORKING/COMMUNICATIONS

WLAN

Intel® AX211 Wi-Fi6E+ Bluetooth® 5.3 M.2 160MHz CNVi World-Wide WLAN vPro Wireless Card ¹⁶

Intel® AX211 Wi-Fi6E+ Bluetooth® 5.3 M.2 160MHz CNVi World-Wide WLAN non-vPro Wireless Card ¹⁶

WWAN

Intel® 5000 5G Solution WWAN ^{17,18}

Intel® XMM 7560 R+ LTE-Advanced Pro WWAN (Cat 16) ¹⁷

NFC

Near Field Communication (NFC) module ¹⁹

HP Module with NXP NFC Controller NPC300 I2C NCI

Miracast

Native Miracast Support ²⁰

16. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.

17. WWAN module is an optional feature, requires factory configuration and requires separately purchased service contract. Check with service provider for coverage and availability in your area. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products, in all regions.

18. Intel 5G module is optional and must be configured at the factory. Module designed for 5G NR NSA (non-standalone) networks as carriers deploy Evolved-Universal Terrestrial Radio Access New Radio Dual Connectivity (ENDC) with both 100Mhz of 5G NR and LTE channel bandwidth, using 256QAM 4x4 as defined by 3GPP. Module requires activation and separately purchased service contract. Check with service provider for coverage and availability in your area. Data connection, upload and download speeds will vary due to network, location, environment, network conditions, and other factors. Backwards compatible to 4G LTE and 3G HSPA technologies. 5G module planned to be available in select platforms and select countries, where carrier supported.

19. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.

20. Sold separately or as an optional feature.

Technical Specifications

AUDIO/MULTIMEDIA

Audio

Audio by Bang & Olufsen
2 Integrated stereo speakers
Discrete Amplifiers
Integrated dual array microphone

Speaker Power

1W/8ohm Per speaker

Camera

5 MP camera ²¹
5 MP+IR camera ²¹
5 MP + IR camera for face authentication with Windows Hello

Sensors

ALS (ambient light sensor)
Adaptive Color Sensor
Hall effect Sensor
Motion AI LSM6DSL
Thermal Sensor
HP Tamper Lock ²²
Magnetometer
Accelerometer + Gyroscope

21. Sold separately or as an optional feature.

22. HP Tamper Lock must be enabled by the customer or your administrator.

Technical Specifications

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard

HP Premium Keyboard, spill resistant, Backlit keyboard and DuraKeys ²³

HP Premium Keyboard, spill resistant, Non-Backlit keyboard and DuraKeys

HP Premium Keyboard, spill resistant, Backlit keyboard and DuraKeys Privacy

Pointing Device

Clickpad with multi-touch gesture support, taps enabled as default

Microsoft Precision Touchpad Default Gestures Support

Function Keys

ESC: system information

F1 - Display Switching

F2 - Blank or Privacy

F3 - Brightness Down

F4 - Brightness Up

F5 - Audio Mute

F6 - Volume Down

F7 - Volume Up

F8 - Mic Mute

F9 - Blank or Backlit Toggle

F10 - Insert

F11 - Airplane Mode

F12 - HP Command Center

home

end

Power Button (with LED)

Delete

Hidden Function Keys

Fn+R - Break

Fn+S - Sys Rq

Fn+C - Scroll Lock

[23. Backlit keyboard is an optional feature.](#)

Technical Specifications

SOFTWARE AND SECURITY

Preinstalled Software

Software

HP Easy Clean ²⁴

HP PC Hardware Diagnostics Windows

myHP

HP Smart Support ²⁵

HP Services Scan ²⁶

HP Connection Optimizer

HP Hotkey Support

HP Support Assistant²⁷

HP Notifications

HP Privacy Settings

HP Power Manager ²⁸

Microsoft Office sold separately and requires Internet access for activation

Manageability Features

HP Connect ²⁹

HP Image Assistant Gen5 (download)

HP Manageability Integration Kit (download) ³⁰

HP Client Management Script Library (download)

HP Patch Assistant (download) ³¹

HP Driver Packs (download)

HP Client Catalog (download)

HP Cloud Recovery ³²

Security Management

HP Wolf Security for Business ³³ includes:

HP Sure Click ³⁴

HP Sure Sense ³⁵

HP Sure Run ³⁶

HP Sure Recover³⁷

HP Sure Start ³⁸

HP Tamper Lock ³⁹

HP Sure Admin ⁴⁰

BIOS

HP BIOSphere Gen6 ⁴¹

HP Secure Erase ⁴²

Absolute Persistence Module ⁴³

BIOS Update via Network

HP Wake on WLAN

Secured-Core PC Enable ⁴⁴

TPM 2.0 Embedded Security Chip (Common Criteria EAL4+ Certified) (FIPS 140-2 Level 2 Certified)

HP Fingerprint Sensor ⁴⁵

Security

TPM

Model: Nuvoton NPCT760HABYX



Technical Specifications

Version: 7.2.3.1
Revision: TPM 2.0
FIPS 140-2 Compliant: Yes

Model: Infinion SLB9672VU2.0
Version: 15.23
Revision TPM2.0
FIPS 140-2 Compliant: Yes

Smartcard Reader

Model number: Alcor AU9560
FIPS 201 Compliant: Yes

IPv6 Support

Yes

FirstNet Certified

Yes

The BIOS on this notebook implements ISO/IEC 19678:2015 guidelines (formerly NIST 800-147).

UEFI version: 2.7
Class: 3

24. HP Easy Clean requires Windows 10 RS3 and higher and will disable the keyboard, touchscreen, and clickpad only. Ports are not disabled. See user guide for cleaning instructions.

25. HP Smart Support requires HP TechPulse to be installed. For more information about how to enable or to download HP Smart Support, please visit <http://www.hp.com/smart-support>.

26. HP Services Scan is provided with Windows Update on select products and will check entitlement on each hardware device to determine if an HP TechPulse-enabled service has been purchased, and will download applicable software automatically. HP TechPulse is a telemetry and analytics platform that provides critical data around devices and applications and is not sold as a standalone service. HP TechPulse follows stringent GDPR privacy regulations and is ISO27001, ISO27701, ISO27017 and SOC2 Type2 certified for Information Security. Internet access with connection to TechPulse portal is required. For full system requirements or to disable this feature, please visit <http://www.hpdaas.com/requirements>. Not applicable in China.

27. HP Support Assistance requires Windows and Internet Access

28. HP Power Manager requires Windows 10 and higher and can be downloaded from the Microsoft Store.

29. HP Connect for Microsoft Endpoint Manager is available from the Azure Market Place for HP Pro, Elite, Z and Point-of-Sale PCs managed with Microsoft Endpoint Manager. Subscription to Microsoft Endpoint Manager required and sold separately. Network connection required.

30. HP Manageability Integration Kit can be downloaded from <http://www8.hp.com/us/en/ads/clientmanagement/overview.html>.

31. HP Patch Assistant available on select HP PCs with the HP Manageability Kit that are managed through Microsoft System Center Configuration Manager. HP Manageability Integration Kit can be downloaded from <http://www8.hp.com/us/en/ads/clientmanagement/overview.html>.

32. HP Cloud Recovery is available for Z by HP, HP Elite and Pro desktops and laptops PCs with Intel® or AMD processors and requires an open, wired network connection. **NOTE:** You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Details please refer to: <https://support.hp.com/us-en/document/c05115630>.

33. HP Wolf Security for Business requires Windows 10 or higher, includes various HP security features and is available on HP Pro, Elite, RPOS and Workstation products. See product details for included security features and OS requirement.

34. HP Sure Click requires Windows 10 Pro or higher or Enterprise. See https://bit.ly/2PrLT6A_SureClick for complete details.



Technical Specifications

- 35. HP Sure Sense is available on select HP PCs with Windows 10 Pro, Windows 10 Enterprise, Windows 11 Pro, or Windows 11 Enterprise OS
- 36. HP Sure Run Gen5 is available on select HP PCs and requires Windows 10 and higher.
- 37. HP Sure Recover Gen5 with Embedded Reimaging is an optional feature which requires Windows 10 and higher must be configured at purchase. You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Network based recovery using Wi-Fi is only available on PCs with Intel Wi-Fi Module
- 38. HP Sure Start Gen7 is available on select HP PCs and requires Windows 10 and higher
- 39. HP Tamper Lock must be enabled by the customer or your administrator.
- 40. HP Sure Admin requires Windows 10 or higher, HP BIOS, HP Manageability Integration Kit from <http://www.hp.com/go/clientmanagement> and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store
- 41. HP BIOSphere Gen6 features may vary depending on the platform and configuration.
- 42. HP Secure Erase for the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.
- 43. Absolute firmware module is shipped turned off and can only be activated with the purchase a license subscription and full activation of the software agent. License subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. Certain conditions apply. For full details visit: <https://www.absolute.com/about/legal/agreements/absolute/>
- 44. Secured-Core PC Enable requires an Intel® vPro®, AMD Ryzen™ Pro processor or Qualcomm® processor with SD850 or higher and requires 8 GB or more system memory. Secured-core PC is enabled from the factory.
- 45. HP Fingerprint sensor is an optional feature that must be configured at purchase.

Technical Specifications

POWER

Power Supply

HP Smart 65 W USB Type-C® adapter ⁴⁶

HP Smart 45 W USB Type-C® adapter ⁴⁶

Battery

HP Long Life 3-cell, 38 Wh Polymer ^{47,48}

HP Long Life 3-cell, 38 Wh Polymer SET ^{47,48}

HP Long Life 3-cell, 51 Wh Polymer ^{47,48}

Power Cord

3-wire plug - 1m ⁴⁶

2-wire plug - 1m ⁴⁶

Battery Life

Up to 14 hours 45mins (U15, HP Long Life 3-cell, 51 Wh Li-ion Polymer, UMA graphic, display set to 200nits, 16GB LPDDR5 memory, 512GB NVMe SSD)⁴⁹

46. Availability may vary by country.

47. Battery is internal and not replaceable by customer. Serviceable by warranty.

48. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors.

49. MM18 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See www.bapco.com for additional details.

WEIGHTS & DIMENSIONS

Product Weight⁵⁰

Starting at 2.95 lb

Starting at 1.34 kg

Product Dimensions (W x D x H)

11.81 x 8.51 x 0.76 in

30.01 x 21.62 x 1.92 cm

Packaging Dimensions (W x D x H) ⁵¹

12"-15" boxes (305mm height): 1200mm x 1000mm x 1080mm

50. Weight will vary by configuration. Does not include power adapter.

51. Product packaging size varies based on options chosen. Please contact your HP representative for your packaging size details.

Technical Specifications

PORTS/SLOTS

- 2 Thunderbolt™ 4 with USB4 Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4) ⁵²
- 2 Super Speed USB Type-A 5Gbps signaling rate (1 charging)
- 1 HDMI 2.1 ⁹
- 1 Headphone/microphone combo jack
- 1 Nano Security Lock Slot (Lock sold separately)
- 1 Smartcard reader (Optional)
- 1 nano SIM card slot

52. SuperSpeed USB 20Gbps is not available with Thunderbolt™ 4.

9. HDMI cable sold separately.

SERVICE AND SUPPORT

1-year warranty and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty except for HP Long Life batteries which will follow the one or three year warranty of the platform. Refer to <http://www.hp.com/support/batterywarranty/> for additional battery information. On-site service and extended coverage is also available. HP Care Pack Services are optional extended service contracts that go beyond the standard limited warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: <http://www.hp.com/go/cpc>. ⁵³

53. HP Care Packs are sold separately. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit <http://www.hp.com/go/cpc>. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements Type-C Adapter**(AC Power)**

Nominal Operating Voltage AC 20V

Average Operating Power

Integrated graphics Yes

Discrete Graphics N/A

Max Operating Power 65W

Temperature

Operating 32° to 95° F (0° to 35° C)
(No sustained direct exposure to sunlight)
(System performance may be reduced above 32°C (89.6°F))

Non-operating -4° to 140° F (-20° to 60° C)

Relative Humidity

Operating 10% to 90% (non-condensing)

Non-operating 5% to 95%
(38.7° C (101.6° F) maximum wet bulb tempera-ture; non-condensing)

Shock

Operating 40 G, 2 ms, half-sine

Non-operating 240 G, 2 ms, half-sine

Random Vibration

Operating 1.043 grams

Non-operating 3.5 grams

Altitude (unpressurized)

Operating 10,000 ft (3,048 m)

Non-operating 40,000 ft (12,192 m)

Planned Industry Standard**Certifications**

Regulatory Model Number HSN-I46C

CSA/UL 62368-1 Yes

ENERGY STAR® Yes ⁵⁴

EPEAT® EPEAT® Gold in the United States ⁵⁵

FCC/ICES/CISPR/VCCI Yes

CE MARKING Yes

GS Mark Yes

Related commodity should comply with ISO 9241 Standards.

China CCC/SRRC Yes

Taiwan BSMI/NCC Yes

Korea KCC/KC/KES Yes

Ukraine NSoC/TEC Yes

EAEU Compliance Yes

Saudi Arabian Compliance Yes

TCO Yes

Low Blue Light Yes

WW RoHS Yes



Technical Specifications

54. Configurations of the HP EliteBook x360 830 13 inch G10 2-in-1 Notebook PC that are ENERGY STAR® qualified are identified as HP EliteBook x360 830 13 inch G10 2-in-1 Notebook PC ENERGY STAR on HP websites and on <http://www.energystar.gov>.

55. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit <http://www.epeat.net> for more information.

DISPLAYS

1. Actual brightness will be lower with touchscreen or HP Sure View.

NOTE: All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

13.3 in WUXGA (1920 x 1200) Anti-Glare UWVA WLED+LBL sRGB NB2Y 1000 eDP 1.3+PSR 100 PrivacyG4 Plus bent LCD Panel	Outline Dimensions (W x H x D)	291.380 x 188.640 (max)
	Active Area	286.080 x 178.800 (typ)
	Weight	210 (max)
	Diagonal Size	13.3
	Surface Treatment	Anti-Glare
	Touch Enabled	Yes
	Contrast Ratio	1500:1 (typ)
	Refresh Rate	60 Hz
	Brightness	1000 nits ¹
	Pixel Resolution - Format	1920 x1200 (WUXGA)
	Backlight	RGB
	Pixel Resolution	WLED
	Color Gamut Coverage	sRGB 100%
	Color Depth	8
	Viewing Angle	UWVA 85/85/85/85
	Low Blue Light	Yes
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	N/A

13.3 in WUXGA (1920 x 1200) Anti-Glare UWVA LED NTSC NB2X 250 eDP 1.2 w/o PSR 45 bent LCD Panel	Outline Dimensions (W x H x D)	292.040 x 189.830 (max)
	Active Area	286.040 x 178.780 (typ)
	Weight	280 (max)
	Diagonal Size	13.3
	Surface Treatment	Anti-Glare
	Touch Enabled	Yes
	Contrast Ratio	1000:1(typ)
	Refresh Rate	60 Hz
	Brightness	250 nits ¹
	Pixel Resolution - Format	1920 x 1200 (WUXGA)
	Backlight	RGB

Pixel Resolution	WLED
Color Gamut Coverage	NTSC 45%
Color Depth	6+2
Viewing Angle	UWVA 89/89/89/89
Low Blue Light	No
Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.26 (max) / 2.78 (max)

13.3 in WUXGA (1920 x 1200) Anti-Glare UWVA WLED+LBL sRGB NB2X 400 eDP 1.4+PSR2 Low-Power 100 bent LCD Panel	Outline Dimensions (W x H x D)	292.040 x 189.830 (max)
	Active Area	286.040 x 178.780 (typ)
	Weight	185 (max)
	Diagonal Size	13.3
	Surface Treatment	Anti-Glare
	Touch Enabled	Yes
	Contrast Ratio	1200:1(typ)
	Refresh Rate	60 Hz
	Brightness	400 nits ¹
	Pixel Resolution - Format	1920 x 1200 (WUXGA)
	Backlight	RGB
	Pixel Resolution	WLED
	Color Gamut Coverage	sRGB 100%
	Color Depth	8
	Viewing Angle	UWVA 89/89/89/89
	Low Blue Light	Yes
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	1.21 (max) / 1.45 (max)

Technical Specifications

STORAGE AND DRIVES

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10 and 11) is reserved for system recovery software.

SSD 512GB 2280 PCIe-4x4 NVMe Three Layer Cell	Form Factor	M.2 2280
	Capacity	512GB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	6400 MB/s $\pm$ 10%
	Minimum Sequential Write	3500 MB/s $\pm$ 10%
	Logical Blocks	1,000,215,215
	Features	Pyrite 2.0; TRIM; L1.2

SSD 1TB 2280 PCIe-4x4 NVMe Three Layer Cell	Form Factor	M.2 2280
	Capacity	1TB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	6400 MB/s $\pm$ 10%
	Minimum Sequential Write	5000 MB/s $\pm$ 10%
	Logical Blocks	2,000,409,264
	Features	Pyrite 2.0; TRIM; L1.2

SSD 2TB 2280 PCIe-4x4 NVMe Three Layer Cell	Capacity	2TB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	6400 MB/s $\pm$ 10%
	Minimum Sequential Write	5000 MB/s $\pm$ 10%
	Logical Blocks	4,000,797,360
	Features	Pyrite 2.0; TRIM; L1.2

256GB PCIe 2280 NVMe Self Encrypted OPAL2 Value Solid State Drive	Capacity	256GB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	2000 MB/s $\pm$ 10%
	Minimum Sequential Write	900 MB/s $\pm$ 10%
	Logical Blocks	500,118,192
	Features	TCG Opal 2.0; TRIM; L1.2

Technical Specifications

512GB PCIe-4x4 2280 NVMe Self Encrypted OPAL2 Three Layer Cell Solid State Drive	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	6400 MB/s $\pm$ 10%
	Minimum Sequential Write	3500 MB/s $\pm$ 10%
	Logical Blocks	1,000,215,215
	Features	TCG Opal 2.0; TRIM; L1.2

1TB PCIe-4x4 2280 NVMe Self Encrypted OPAL2 Three Layer Cell Solid State Drive	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	6400 MB/s $\pm$ 10%
	Minimum Sequential Write	5000 MB/s $\pm$ 10%
	Logical Blocks	2,000,409,264
	Features	TCG Opal 2.0; TRIM; L1.2
	NAND Type	TLC

SSD 256GB 2280 PCIe NVMe Value	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	2000 MB/s $\pm$ 10%
	Minimum Sequential Write	900 MB/s $\pm$ 10%
	Logical Blocks	500,118,192
	Features	Pyrite 2.0; TRIM; L1.2

SSD 512GB 2280 PCIe NVMe Value	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	2200 MB/s $\pm$ 10%
	Minimum Sequential Write	1000 MB/s $\pm$ 10%
	Logical Blocks	1,000,215,215
	Features	Pyrite 2.0; TRIM; L1.2

Technical Specifications

NETWORKING/COMMUNICATIONS

Intel® AX211 Wi-Fi 6E + Bluetooth® 5.3 M.2 160MHz CNVi World-wide WLAN non-vPro Wireless Card¹	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
	Interoperability	Wi-Fi certified
	Frequency Band	• 802.11b/g/n/ax 2.402 – 2.482 GHz • 802.11a/n/ac/ax 4.9 – 4.95 GHz (Japan) 5.15 – 5.25 GHz 5.25 – 5.35 GHz 5.47 – 5.725 GHz 5.825 – 5.850 GHz 5.955 – 6.415 GHz 6.435 – 6.515 GHz 6.535 – 6.875 GHz 6.895 – 7.115 GHz
	Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: max 300Mbps • 802.11ac : 1733Mbps • 802.11ax : max 2.4Gbps
	Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
	Security ²	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • WPA3 certification • IEEE 802.11i • WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points

Technical Specifications

Output Power ³	• 802.11b : +17dBm minimum • 802.11g : +16dBm minimum • 802.11a : +17dBm minimum • 802.11n HT20(2.4GHz) : +14dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum • 802.11n HT20(5GHz) : +14dBm minimum • 802.11n HT40(5GHz) : +13dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum • 802.11ac VHT160(5GHz) : +10dBm minimum • 802.11ax HE40(2.4GHz) : +12dBm minimum • 802.11ax HE80(5GHz) : +10dBm minimum • 802.11ax HE160(5GHz) : +10dBm minimum
Power Consumption	• Transmit mode 2.0 W • Receive mode 1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode 50 mW (WLAN unassociated) • Connected Standby 10mW • Radio disabled 8 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity ⁴	• 802.11b, 1Mbps : -93.5dBm maximum • 802.11b, 11Mbps : -84dBm maximum • 802.11a/g, 6Mbps : -86dBm maximum • 802.11a/g, 54Mbps : -72dBm maximum • 802.11n, MCS07 : -67dBm maximum • 802.11n, MCS15 : -64dBm maximum • 802.11ac, MCS0(VHT80) : -84dBm maximum • 802.11ac, MCS9(VHT80) : -59dBm maximum • 802.11ac, MCS9(VHT160) : -58.5dBm maximum • 802.11ax, MCS11(HE40): -57dBm maximum • 802.11ax, MCS11(HE80): -54dBm maximum • 802.11ax, MCS11(HE160): -53.5dBm maximum
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
Form Factor	PCI-Express M.2 MiniCard
Dimensions	1. Type 2230: 2.3 x 22.0 x 30.0 mm
Weight	1. Type 2230: 2.8g
Operating Voltage	3.3v +/- 9%
Temperature	Operating 14° to 158° F (–10° to 70° C) Non-operating –40° to 176° F (–40° to 80° C)
Humidity	Operating 10% to 90% (non-condensing) Non-operating 5% to 95% (non-condensing)
Altitude	Operating 0 to 10,000 ft (3,048 m) Non-operating 0 to 50,000 ft (15,240 m)

Technical Specifications

LED Activity	LED Amber – Radio OFF; LED OFF – Radio ON
HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card	
Bluetooth Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)
Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 9.5 dBm for BR and EDR.

1. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported. Wi-Fi 6E is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.
2. Check latest software/driver release for updates on supported security features.
3. The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

Technical Specifications

Intel® AX211 Wi-Fi 6E +Bluetooth® 5.3 M.2 160MHz CNVi World-Wide WLAN vPro Wireless Card¹	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
	Interoperability	Wi-Fi certified
	Frequency Band	•802.11b/g/n/ax 2.402 – 2.482 GHz •802.11a/n/ac/ax 4.9 – 4.95 GHz (Japan) 5.15 – 5.25 GHz 5.25 – 5.35 GHz 5.47 – 5.725 GHz 5.825 – 5.850 GHz 5.955 – 6.415 GHz 6.435 – 6.515 GHz 6.535 – 6.875 GHz 6.895 – 7.115 GHz
	Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: max 300Mbps • 802.11ac : 1733Mbps • 802.11ax : max 2.4Gbps
	Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
	Security²	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • WPA3 certification • IEEE 802.11i • WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power³	• 802.11b : +17dBm minimum • 802.11g : +16dBm minimum

Technical Specifications

	• 802.11a : +17dBm minimum • 802.11n HT20(2.4GHz) : +14dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum • 802.11n HT20(5GHz) : +14dBm minimum • 802.11n HT40(5GHz) : +13dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum • 802.11ac VHT160(5GHz) : +10dBm minimum • 802.11ax HE40(2.4GHz) : +12dBm minimum • 802.11ax HE80(5GHz) : +10dBm minimum • 802.11ax HE160(5GHz) : +10dBm minimum
Power Consumption	• Transmit mode 2.0 W • Receive mode 1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode 50 mW (WLAN unassociated) • Connected Standby 10mW • Radio disabled 8 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
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	Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
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Humidity	Operating 10% to 90% (non-condensing) Non-operating 5% to 95% (non-condensing)
Altitude	Operating 0 to 10,000 ft (3,048 m) Non-operating 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF; LED OFF – Radio ON

HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card



Technical Specifications

Bluetooth Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3 Compliant
Frequency Band	2402 to 2480 MHz
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- 1. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported. Wi-Fi 6E is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.
- 2. Check latest software/driver release for updates on supported security features.
- 3. The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
- 4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

Technical Specifications

Intel® 5G Solution 5000¹ Technology/Operating bands

WCDMA/HSPA+ operating bands:

Band 1: 1920 to 1980 MHz (UL), 2110 to 2170 MHz (DL)

Band 2: 1850 to 1910 MHz (UL), 1930 to 1990 MHz (DL)

Band 4: 1710 to 1755 MHz (UL), 2110 to 2155 MHz (DL)

Band 5: 824 to 849 MHz (UL), 869 to 894 MHz (DL)

Band 8: 880 to 915 MHz (UL), 925 to 960 MHz (DL)

LTE FDD/TDD operating bands:

Band 1: 1920 to 1980 MHz (UL), 2110 to 2170 MHz (DL)

Band 2: 1850 to 1910 MHz (UL), 1930 to 1990 MHz (DL)

Band 3: 1710 to 1785 MHz (UL), 1805 to 1880 MHz (DL)

Band 4: 1710 to 1755 MHz (UL), 2110 to 2155 MHz (DL)

Band 5: 824 to 849 MHz (UL), 869 to 894 MHz (DL)

Band 7: 2500 to 2570 MHz (UL), 2620 to 2690 MHz (DL)

Band 8: 880 to 915 MHz (UL), 925 to 960 MHz (DL)

Band 12: 699 to 716 MHz (UL), 729 to 746 MHz (DL)

Band 13: 777 to 787 MHz (UL), 746 to 756 MHz (DL)

Band 14: 788 to 798 MHz (UL), 758 to 768 MHz (DL)

Band 17: 704 to 716 MHz (UL), 734 to 746 MHz (DL)

Band 18: 815 to 830 MHz (UL), 860 to 875 MHz (DL)

Band 19: 830 to 845 MHz (UL), 875 to 890 MHz (DL)

Band 20: 832 to 862 MHz (UL), 791 to 821 MHz (DL)

Band 25: 1850 to 1915 MHz (UL), 1930 to 1995 MHz (DL)

Band 26: 814 to 849 MHz (UL), 859 to 894 MHz (DL)

Band 28: 703 to 748 MHz (UL), 758 to 803 MHz (DL)

Band 29: 717 to 728 MHz (DL)

Band 30: 2305 to 2315 MHz (UL) 2350 to 2360 MHz (DL)

Band 32: 1452 to 1496 MHz (DL)

Band 34: 2010 to 2025 MHz (UL/DL)

Band 38: 2570 to 2620 MHz (UL/DL)

Band 39: 1880 to 1920 MHz (UL/DL)

Band 40: 2300 to 2400 MHz (UL/DL)

Band 41: 2496 to 2690 MHz (UL/DL)

Band 42: 3400 to 3600 MHz (UL/DL)

Band 43: 3400 to 3800 MHz (UL/DL)

Band 46: 5150 to 5925 MHz (DL)

Band 48: 3550 to 3700 MHz (UL/DL)

Band 66: 1710 to 1800 MHz (UL), 2110 to 2200 MHz (DL)

Band 71: 663 to 698 MHz (UL), 617 to 652 MHz (DL)

5G NR Sub 6GHz

n1: 1920 to 1980 MHz (UL), 2110 to 2170 MHz (DL)

n2: 1850 to 1910 MHz (UL), 1930 to 1990 MHz (DL)

n3: 1710 to 1785 MHz (UL), 1805 to 1880 MHz (DL)

n5: 824 to 849 MHz (UL), 869 to 894 MHz (DL)

n7: 2500 to 2570 MHz (UL), 2620 to 2690 MHz (DL)

n8: 880 to 915 MHz (UL), 925 to 960 MHz (DL)

n20: 832 to 862 MHz (UL), 791 to 821 MHz (DL)

n25: 1850 to 1915 MHz (UL), 1930 to 1995 MHz (DL)

n28: 703 to 748 MHz (UL), 758 to 803 MHz (DL)

n38: 2570 to 2620 MHz (UL/DL)

n40: 2300 to 2400 MHz (UL/DL)

Technical Specifications

	n41: 2496 to 2690 MHz (UL/DL) n48: 3550 to 3700 MHz (UL/DL) n66: 1710 to 1800 MHz (UL), 2110 to 2200 MHz (DL) n71: 663 to 698 MHz (UL), 617 to 652 MHz (DL) n77: 3300 to 4200 MHz (UL/DL) n78: 3300 to 3800 MHz (UL/DL) n79: 4400 to 5000 MHz (UL/DL)
Wireless protocol standards	5G NR Air Interface 3GPP Rel15 5G NR sub-6 LTE Rel14 20 layers and 2 Gbps downlink (DL) throughput – 4 × 4 MIMO across 5x CA 200 Mbps/uplink (UL) throughput – 40 MHz ULCA and 256 QAM WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification
GPS	Standalone, A-GPS (MS-A, MS-B)
GPS bands	GPS: L1 (1575.42MHz) GLONASS: L1 (1602MHz) BeidouB1(1561.098MHz) Galileo E1 (1575.42) QZSS(1575.42 MHz)
Maximum data rates	SA 5G/NR sub-6 Peak: DL4.67Gbps/ UL 1.25Gbps 5G NSA sub 6G : DL: 3.8 Gbps/UL 700Mbps LTE: ue-CategoryDL 19, (DL : 1.6 Gbps) ue-CategoryUL 18 , (UL: 211Mbps)
Maximum output power	DC-HSPA+: 42 Mbps (Download), 11.5 Mbps (Upload) LTE: 23 dBm in all band except B41 LTE B41 HPUE = 26dBm NR: 23 dBm in all band except n41, n77, n78 and n79 LTE n41, n77, n78 and n79 HPUE = 26dBm HSPA+: 23.5 dBm
Maximum power consumption	5G Sub 6 : 2500 mA LTE: 1,300 mA (peak); 1100 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average)
Form Factor	M.2, 3052-S3 Key B
Weight	8 g
Dimensions (Length x Width x Thickness)	52 mm × 30 mm × 2.3 mm
eSIM	Support

1. Intel® 5G module is optional and must be configured at the factory. Module designed for 5G SA (standalone), and 5G NR NSA (non-standalone) networks as carriers deploy Evolved-Universal Terrestrial Radio Access New Radio Dual Connectivity (ENDC) with both 100Mhz of 5G NR and LTE channel bandwidth, using 256QAM 4x4 as defined by 3GPP. Module requires activation and separately purchased service contract. Check with service provider for coverage and availability in your area. Data connection, upload and download speeds will vary due to network, location, environment, network conditions, and other factors. Backwards compatible to 4G LTE and 3G HSPA technologies. 5G module planned to be available in select platforms and select countries, where carrier supported.

Technical Specifications

Intel® XMM™ 7560 R+ LTE-Advanced Pro ¹	Technology/Operating bands	FDD LTE: 2100 (Band 1), 1900 (Band 2), 1800 (Band 3), 1700/2100 (Band 4), 850 (Band 5), 2600 (Band 7), 900 (Band 8), 700 (Band 12 lower), 700 (Band 13 upper), 700 (Band 14 upper), 700 (Band 17 lower), 850 (Band 18 lower), 850 (Band 19 upper), 800 (Band 20), 1900 (Band 25), 850 (Band 26), 700 (Band 28), 700 (Band 29 RX only), 2300 (Band 30), 1700/2100 (Band 66), 600 (band 71). TDD LTE: 2100 (Band 34), 2600 (Band 38), 1900 (Band 39), 2400 (Band 40), 2500 (Band 41), 3500 (Band 42), 3700 (Band 43), 3700 (band 48), 5200 (Band 46 RX only) MHz; HSPA+: 2100 (Band 1), 1900 (Band 2), 1700/2100 (Band 4), 850 (Band 5), 900 (Band 8) MHz
	Wireless protocol standards	3GPP Release 12 LTE Specification DL-CAT.16, DL 100MHz BW throughput up to 978Mbps; UL-CAT.13 40MHz throughput up to 150Mbps WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification
	GPS	Standalone GPS/Beidou/Glonass, A-GPS (MS-A, MS-B)
	GPS bands	1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz, Beidou 1561.098 MHz
	Maximum data rates	LTE: 978 Mbps (Download), 150 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload)
	Maximum output power	LTE: 23 dBm in all band except B41 LTE B41 HPUE = 26dBm HSPA+: 23.5 dBm
	Maximum power consumption	LTE: 1,200 mA (peak); 900 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average)
	Form Factor	M.2, 3042-S3 Key B
	Weight	6 g
	Dimensions (Length x Width x Thickness)	42 x 30 x 2.3 mm

1. Mobile Broadband is an optional feature. Connection requires wireless data service contract, network support, and is not available in all areas. Contact service provider to determine the coverage area and availability. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products or in all countries.

Technical Specifications

NFC NXP NPC300	Dimensions (L x W x H)	17x10x2.0 mm
	Chipset	NPC300
	System interface	I2C
	NFC RF standards	ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 ISO/IEC 18092 ECMA-340 NFCIP-1 Target and Initiator ECMA-320 NFCIP-2
	NFC Forum Support	Tag Type 1, Type 2, Type3 and Type 4, NFCIP-1 and NFCIP-2
	Reader (PCD-VCD) Mode	ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 MIFARE 1K MIFARE 4K MIFARE DESFire FeliCa Jewel and Topaz cards
	Card Emulation (PICC-VICC) Mode	ISO/IEC 14443 A ISO/IEC 14443 B and B' MIFARE FeliCa
	Frequency	13.56 MHz
	NFC Modes Supported	Reader/Writer, Peer-to-Peer
	Raw RF Data Rates	106, 212, 424, 848 kbps
	Operating temperature	0°C to 70°C
	Storage temperature	-20°C to 125°C
	Humidity	10-90% operating 5-95% non-operating
	Supply Operating voltage	4.35 to 5.25 Volts
	I/O Voltage	1.8V or 3.3V
	Power Consumption (Booster enable, VBAT= 3.3V, VCC_BOOST = 5V)	
	Mode	Power Consumption, Typical
	Polling	7.3 mA
	Detected Test Tag Type 1	Total 283.8 mA Net Module 236.8 mA
	Detected Test Tag Type 2	Total 288.8 mA Net Module 241.8 mA
	Detected Test Tag Type 3	Total 287.7 mA Net Module 240.7 mA
	Detected Test Tag Type 4	Total 282.3 mA Net Module 235.3 mA

Technical Specifications

Antenna

Antenna connector, 0.5mm pitch, 7 connector FPC. Antenna matching is external to module.

Technical Specifications

POWER

1. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors

AC Adapter 45 Watt nPFC	Dimensions (H x W x D)	3.701 x 1.693 x 1.071 in (9.4 x 4.3 x 2.72 cm)
	Standard USB Type C®	
Straight 1.8m	Weight	0.44 lb (200 g) max (Not including power cord. Power cord varies by country.)
	Input	100~240VAC
Output	Input Efficiency	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115Vac/230Vac Spec: 5V: 81.5% 9V: 86.7% 12V: 87.4% 15V: 87.8%
	Input frequency range	47 ~ 63Hz
	Input AC current	Max. 1.4 A at 90 Vac
	Output power	5V/15W 9V/27W 12V/36W 15V/45W
	DC output	5V/9V/12V/15V
	Hold-up time	100% load 5ms at 115 Vac input
	Output current limit	<5.0A
	Connector	USB Type-C®
	Environmental Design	
	Operating temperature	32°F to 95°F (0°to 35°C)
EMI and Safety Certifications	Non-operating (storage) temperature	-4°F to 185°F (-20°to 85°C)
	Altitude	0 to 16,400 ft (0 to 5000m)
	Humidity	20% to 95%
	Storage Humidity	10% to 95%
	CE Mark - full compliance with LVD and EMC directives	
	Worldwide safety standards - IEC60950-1 and IEC62368-1 : 2018, EN62368-1:2014+A11, UL62368-1	
	Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CECP, CU(EAC), EAEU, KCC (Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC, USB-IF, Ukraine (CoC+DoC+RoHS+ECO)	

Technical Specifications

AC Adapter 65 Watt nPFC Standard USB Type C® Straight 1.8m	Dimensions (H x W x D)	3.543 x 2.008 x 1.122 in (9.0 x 5.1 x 2.85 cm)			
	Weight	0.53 lb (240 g) max (Not including power cord. Power cord varies by country.)			
		100-240Vac			
	Input	Input Efficiency	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115Vac/230Vac Spec: 5V : 81.5% 9V : 86.7% 12V : 88.0% 15V : 89.0% 20V : 89.0%		
	Output	Input frequency range	47-63Hz		
		Input AC current	Max. 1.6 A at 90 Vac		
		Output power	5V/15W 9V/27W 12V/60W 15V/65W 20V/65W		
		DC output	5V/9V/12V/15V/20V		
		Hold-up time	100% load 5ms at 115 Vac input		
		Output current limit	< 8.0A		
		Connector	USB Type-C®		
		Environmental Design	Operating temperature	32°F to 95°F (0°to 35°C)	
			Non-operating (storage) temperature	-4°F to 185°F (-20°to 85°C)	
			Altitude	0 to 16,400 ft (0 to 5000m)	
		Humidity	20% to 95%		
		Storage Humidity	10% to 95%		
	EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives Worldwide safety standards - IEC60950-1 and IEC62368-1 : 2018, EN62368-1:2014+A11, UL 62368-1 Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CEC, CU(EAC), EAEU, KCC(Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC			

Technical Specifications

HP 65W Slim USB-C® Straight AC Power Adapter	Dimensions (H x W x D)	3.819 x 2.106 x 0.827 in (9.7x5.35x2.1cm)
	Weight	0.49 lb (220 g) max (Not including power cord. Power cord varies by country.)
	Input	100-240Vac
	Input Efficiency	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115Vac/230Vac Spec: 5V : 81.5% 9V : 86.7% 12V : 88.0% 15V : 89.0% 20V : 89.0%
	Input frequency range	47-63Hz
	Input AC current	Max. 1.6 A at 90 Vac
	Output	Output power 5V/15W 9V/27W 12V/60W 15V/65W 20V/65W
		DC output 5V/9V/12V/15V/20V
		Hold-up time 100% load 5ms at 115 Vac input
		Output current limit < 8.0A
	Connector	USB TYPE C®
Environmental Design	Operating temperature	32°F to 95°F (0°to 35°C)
		Non-operating (storage) temperature -4°F to 185°F (-20°to 85°C)
		Altitude 0 to 16,400 ft (0 to 5000m)
		Humidity 20% to 95%
		Storage Humidity 10% to 95%
EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives	
	Worldwide safety standards - IEC60950-1 and IEC62368-1 : 2018, EN62368-1:2014+A11, UL 62368-1 Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CECP, CU(EAC), EAEU, KCC(Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC	

Technical Specifications

HP 3-cell Long Life Li-Ion (WP 38Wh)¹	Weight	0.184kg +/- 10g (0.406lb)
	Cells/Type	3cell Lithium-Ion Polymer cell / 564975
	Energy	Voltage 11.58V
		Amp-hour capacity 3.283Ah
		Watt-hour capacity¹ 38Wh
	Temperature	Operating (Charging) 32° to 113° F (0° to 45° C)
		Operating (Discharging) 14° to 140° F (-10° to 60° C)
		Optional Travel Battery Available No

1. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors

HP 3-cell Long Life Li-Ion (WQ 38Wh)¹	Weight	0.178kg +/- 10g(0.392lb)
	Cells/Type	3cell Lithium-Ion Polymer cell / 604975
	Energy	Voltage 11.55V
		Amp-hour capacity 3.291Ah
		Watt-hour capacity¹ 38Wh
	Temperature	Operating (Charging) 32° to 113° F (0° to 45° C)
		Operating (Discharging) 14° to 140° F (-10° to 60° C)
		Optional Travel Battery Available No

1. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors

HP 3-cell Long Life Li-Ion (51 Wh)¹	Weight	0.229kg +/- 10g (0.505 lb)
	Cells/Type	3cell Lithium-Ion Polymer cell / 566075
	Energy	Voltage 11.58V
		Amp-hour capacity 4.431Ah
		Watt-hour capacity¹ 51.3Wh
	Temperature	Operating (Charging) 32° to 113° F (0° to 45° C)
		Operating (Discharging) 14° to 140° F (-10° to 60° C)
		Optional Travel Battery Available No

1. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors

Technical Specifications

AUDIO

HD Stereo Codec	Realtek ALC3315
Audio I/O Ports	Headset: CTIA only and Headphone-out
Internal Speaker Amplifier	Cirrus Logic High-Efficiency Boosted Class D Amplifier
Multi-streaming Capable	Playback multi-streaming can be enabled in the audio control panel to allow independent audio. Following MSFT Behavior
Sampling	DAC:48kHz ADC:48kHz
Wavetable Syntheses	N/A
Analog Audio	Support 3.5mm Headset: CTIA only and Headphone-out
# of Channels on Line-Out	N/A
Internal Speaker	Yes

FINGERPRINT READER

Sensor vendor	Main source: Synaptics FS7605 2nd source: ELAN 80SW
Sensor type	Capacitive
DPI resolution	Main source: 363 DPI 2nd source: 508 DPI
Scan area	Main source: 104 x 86 pixels 2nd source: 80x80 pixels
False Rejection Rate	FRR= $\leq$ 3%
False Acceptance Rate	Main source: FAR 1/100K 2nd source: < 0.001%
Mobile Voltage Operation	Main source: 3.0V to 3.6V 2nd source: 2.7V~3.6V
Operating Temperature	Main source: 0°C~60°C 2nd source: -20°C - +80°C
Current Consumption	Main source: 100mA max
Image	2nd source: 35mA peak
Low Latency Wait For Finger	Main source: 260uA 2nd source: 300uA
Capture Rate	Main source: Image transmitter output frequency 9.6MHz 2nd source: 50 frame/sec
ESD Resistance	IEC 61000-4-2 4B (+15KV)
Detection Matrix	Main source: 363 dpi / 7.4x6mm sensor area 2nd source: 508 dpi / 4x4mm sensor area

Technical Specifications

ENVIRONMENTAL DATA

Eco-Label Certifications & declarations	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks: • IT ECO declaration • US ENERGY STAR® • US Federal Energy Management Program (FEMP) • EPEAT® Gold registered in the United States. See http://www.epeat.net for registration status in your country. • TCO Certified • China Energy Conservation Program (CECP) • China State Environmental Protection Administration (SEPA) • Taiwan Green Mark • Korea Eco-label • Japan PC Green label*		
Sustainable Impact Specifications	• Product Carbon Footprint (hp.com) • Ocean-bound plastic in Speaker • 59.4% post-consumer recycled plastic • 79.3% recycled metal • Low halogen • Outside Box and corrugated cushions are 100% sustainably sourced and recyclable • Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable • Bulk packaging available		
System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.		
Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Sort idle)	4.33 W	4.66 W	4.44 W
Normal Operation (Long idle)	0.98 W	1.16 W	1.02 W
Sleep	0.98 W	1.16 W	1.02 W
Off	0.41 W	0.44 W	0.41 W
	NOTE: Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.		
Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	14.8 BTU/hr	15.9 BTU/hr	15.2 BTU/hr
Normal Operation (Long idle)	3.4 BTU/hr	4.0 BTU/hr	3.5 BTU/hr
Sleep	3.4 BTU/hr	4.0 BTU/hr	3.5 BTU/hr
Off	1.4 BTU/hr	1.5 BTU/hr	1.4 BTU/hr
	*NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.		



Technical Specifications

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L_{WAd} , bels)		Sound Pressure (L_{pAm} , decibels)
Typically Configured – Idle	3.4		24.4
Fixed Disk – Random writes	4.1		31.4
Optical Drive – Sequential reads	3.9		30.1
Longevity and Upgrading	This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the		
	Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.		
Additional Information	- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. - This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC. - This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). - This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net - Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. - This product is 93.8% recycle-able when properly disposed of at end of life.		
Packaging Materials	External:	PAPER/Corrugated	220 g
		PAPER/Corrugated	41 g
		PAPER/Molded Pulp	54 g
		PAPER/Molded Pulp	62 g
		PAPER/Paper	3 g
	Internal:	PLASTIC/Polyethylene low density - LDPE	14 g
	The plastic packaging material contains at least 0.0% recycled content.		
	The corrugated paper packaging materials contains at least 56.5% recycled content.		
RoHS Compliance	HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam. We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products. We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve. To obtain a copy of the HP RoHS Compliance Statement, see HP RoHS position statement.		
Material Usage	This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html): Asbestos		

Technical Specifications

	• Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • Bis(2-Ethylhexyl) phthalate (DEHP) • Benzyl butyl phthalate (BBP) • Dibutyl phthalate (DBP) • Diisobutyl phthalate (DIBP) • Formaldehyde • Halogenated Diphenyl Methanes • Lead carbonates and sulfates • Lead and Lead compounds • Mercuric Oxide Batteries • Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user. • Ozone Depleting Substances • Polybrominated Biphenyls (PBBs) • Polybrominated Biphenyl Ethers (PBBEs) • Polybrominated Biphenyl Oxides (PBBOs) • Polychlorinated Biphenyl (PCB) • Polychlorinated Terphenyls (PCT) • Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications. • Radioactive Substances • Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
End-of-life Management and Recycling	HP offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Technical Specifications

HP, Inc. Corporate Environmental Information	For more information about HP's commitment to the environment: Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842 and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf
footnotes	• Percentage of ocean-bound plastic contained in each component varies by product • Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard. • External power supplies, WWAN modules, power cords, cables and peripherals excluded. • 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers. • Fiber cushions made from 100% recycled wood fiber and organic materials. • Plastic cushions are made from >90% recycled plastic.\ • Recycled metal is expressed as a percentage of the total weight of the metal according to ISO 14021 definitions for metal parts over 25 grams.

COUNTRY OF ORIGIN

China

Options and Accessories (Sold separately and availability may vary by country)

DOCKING (Sold Separately)

Docking station model #1	HP Thunderbolt 120W G4 Dock
Total number of supported displays (incl. the notebook display)	4
Max. resolutions supported	Quad 4K @60Hz Dual 8K single cable@30 for TB hosts or USB-C hosts DP 1.4 with DSC in high res mode
Dock Connectors	2xDP, 1xHDMI, 1xTB, 1xUSB-C Alt Mode
Technical limitations	Maximum resolution and display support is dependent on the maximum capability of the notebook. Thunderbolt Hosts: Maximum of (4) displays with maximum resolution of 5K@ 30Hz running Thunderbolt host. Maximum resolution possible is dual 8K displays @ 60Hz running Thunderbolt host or running a non-Thunderbolt host in high resolution mode @30Hz Non-Thunderbolt hosts: The highest resolution for dual displays running a non-Thunderbolt host in multi-function mode is (1) 5K dual cable (using both DP ports) +(1) 4K on USB-C DP port Non-Thunderbolt hosts support (3) displays with a maximum resolution of (2) 5K single cable + (1) 4K UHD @ 60 Hz in high resolution mode. In multi-function mode the maximum resolution for (3) displays is (2) 5K single cable @ 30Hz + (1) 4K UHD @ 30Hz.
Docking station model #2	HP Thunderbolt 280W G4 Dock
Total number of supported displays (incl. the notebook display)	4
Max. resolutions supported	Quad 4K @60Hz Dual 8K single cable@30 for TB hosts or USB-C hosts DP 1.4 with DSC in high res mode
Dock Connectors	2xDP, 1xHDMI, 1xTB, 1xUSB-C Alt Mode
Technical limitations	Maximum resolution and display support is dependent on the maximum capability of the notebook. Thunderbolt Hosts: Maximum of (4) displays with maximum resolution of 5K@ 30Hz running Thunderbolt host. Maximum resolution possible is dual 8K displays @ 60Hz running Thunderbolt host or running a non-Thunderbolt host in high resolution mode @30Hz Non-Thunderbolt hosts: The highest resolution for dual displays running a non-Thunderbolt host in multi-function mode is (1) 5K dual cable (using both DP ports) +(1) 4K on USB-C DP port Non-Thunderbolt hosts support (3) displays with a maximum resolution of (2) 5K single cable + (1) 4K UHD @ 60 Hz in high resolution mode. In multi-function mode the maximum resolution for (3) displays is (2) 5K single cable @ 30Hz + (1) 4K UHD @ 30Hz.
Docking station model #3	HP USB-C Dock G5

Options and Accessories (Sold separately and availability may vary by country)

Total number of supported displays (incl. the notebook display)	3
Max. resolutions supported	Dual 5K@ 30Hz + (1) 4K UHD (multi-function mode)
Dock Connectors	1xHDMI, 2xDP
Technical limitations	Maximum resolution and display support is dependent on the maximum capability of the notebook. Highest resolution with dual displays is two 8K@ 60Hz host in High Resolution mode. Three maximum displays supported are two 5K@ 30 Hz on DP ports plus one 4K UHD@ 30 Hz on HDMI in Multi-function mode The highest resolution for a non-Thunderbolt host in Multi-function mode is a single 5K dual cable (using both DP ports) + (1) 4K on HDMI port.
Docking station model #4	HP USB-C/A Universal Dock G2
Total number of supported displays (incl. the notebook display)	3
Max. resolutions supported	Dual 4K @ 60Hz Single 5K @ 60Hz
Dock Connectors	1xHDMI, 2xDP
Technical limitations	Maximum resolution and display support is dependent on the maximum capability of the notebook. The best resolution for dual or triple displays is 4K UHD@ 60Hz. For use with the USB-A adapter that comes in the box the maximum number of displays supported is (2) 4k x 60 Hz on the Type-A Gen 1 connection from the host.

Options and Accessories (Sold separately and availability may vary by country)

Type	Description	Part Number
Audio	HP Wired USB-A Stereo Headset	428K6AA
	HP Wired 3.5mm Stereo Headset	428K7AA
	HP 365 BT Speaker	567D3AA#ACJ
Video	HP 325 FHD USB-A Webcam	53X27AA
	HP 965 4K USB-A STR Webcam	695J5AA
Cases	HP Prelude G2 15.6 Backpack	1E7D6AA
	HP Prelude G2 15.6 Top Load	1E7D7AA
	HP Prelude Pro Recycled 15.6 Backpack	1X644AA
	HP Prelude Pro Recycled 15.6 Top Load	1X645AA
	HP Renew 14 Laptop Sleeve	2E6U9AA
	HP Renew Business 14.1 Laptop Bag	3E5F9AA
	HP Renew Business 14.1 Laptop Sleeve	3E2U7AA
	HP Renew Business 15.6 Laptop Bag	3E5F8AA
	HP Renew Business 17.3 Laptop Backpack	3E2U5AA
	HP Renew Business 17.3 Laptop Bag	3E2U6AA
	HP Renew Executive 14.1 Laptop Sleeve	6B8Y3AA
	HP Renew Executive 16 Laptop Backpack	6B8Y1AA
	HP Renew Executive 16 Laptop Bag	6B8Y2AA
	HP Reversible 13.3 Sleeve	7ZE82AA
	HP Travel 18L 15.6 Iron Gray Laptop Backpack	6H2D9AA
	HP Travel 25L 15.6 Iron Gray Laptop Backpack	6H2D8AA
Digital Pen	HP Active RECHBL G3 Moonracer 2.0 Pen	6SG43AA
Docking	HP USB-C 120W G5 Dock	5TW10AA
	HP USB-C/A 120W G2 Universal Dock	5TW13AA
	HP Thunderbolt 120W G4 Dock	4J0A2AA
	HP Thunderbolt 280W G4 Dock	4J0G4AA
Hub	HP 4K USB-C Multiport Hub	6G842AA
	HP Universal USB-C Multiport Hub	50H55AA
	HP USB-C Travel Dock G2	7PJ38AA
	HP USB-C to USB-A Hub	Z6A00AA
Adapter	HP USB-C to RJ45 Adapter G2	4Z527AA
	HP USB 3.0 to Gigabit RJ45 Adapter G2	4Z7Z7AA
	HP HDMI to VGA Adapter	H4F02AA



Options and Accessories (Sold separately and availability may vary by country)

	HP USB-C to DisplayPort Adapter	N9K78AA
	HP USB-C to HDMI 2.0 Adapter	1WC36AA
	HP USB-C to USB 3.0 Adapter	N2Z63AA
	HP USB-C to VGA Adapter	N9K76AA
Keyboard/Combo	HP 125 WD USB Keyboard	266C9AA
	HP 320K WD USB Keyboard	9SR37AA
	HP 355 Compact Multi-Device BT Keyboard	692S9AA
	HP 455 Programmable Wireless Keyboard	4R177AA
	HP 975 USB+BT Dual-Mode Wireless Keyboard	3Z726AA
	HP 155 Wired Mouse and Keyboard Combo	5B8C0AA#ACJ
	HP 225 Antimicrobial Wired Mouse and Keyboard Combo	286K3AA#AB2
	HP 225 Wired Mouse and Keyboard Combo	286J4AA
	HP 235 Wireless Mouse and Keyboard Combo	1Y4D0AA
	HP 655 Wireless Keyboard and Mouse Combo	4R009AA
	HP Wired Desktop 320MK Mouse and Keyboard	9SR36AA
	HP Wireless Rechargeable 950MK Mouse and Keyboard	3M165AA
Mouse	HP 125 USB-A Wired Mouse	265A9AA
	HP 128 USB Laser Wired Mouse	265D9AA
	HP 155 USB-A Wired Mouse	5B8B7AA#ACJ
	HP 235 Wireless 2.4GHz Slim Wireless Mouse	4E407AA
	HP 320M USB-A Wired Mouse	9VA80AA
	HP 435 Bluetooth 5.0 + Wireless 2.4GHz Multi-Device Wireless Mouse	3B4Q5AA
	HP 715 Rechargeable Multi-Device Bluetooth 5.0 + Wireless 2.4GHz Bluetooth Mouse	6E6F0AA
	HP 925 Ergonomic Vertical Bluetooth 5.0 + Wireless 2.4GHz Wireless Mouse	6H1A5AA
	HP Creator USB-A+Bluetooth 935 Wireless Mouse Black	1D0K8AA
	HP USB Premium Wireless Mouse	1JR31AA
	HP USB-A+Bluetooth Multi-Device 635 Wireless Mouse Black	1D0K2AA
	HP USB-A+Bluetooth Travel Bluetooth Mouse	6SP30AA
Power	HP 45W USB-C LC Dali AC Power Adapter	1MZ01AA
	HP 65W GaN USB-C Laptop Charger	600Q7AA
	HP 65W USB-C Laptop Charger	671R3AA
	HP 65W USB-C LC AC Power Adapter	1P3K6AA
Commodity	HP USB DVD-Writer EXT ODD	F2B56AA
	HP Nano Keyed Cable Lock	1AJ39AA
	HP Nano Master Keyed Cable Lock	1AJ40AA
	HP SureKey Standard/Nano/Wedge Cable Lock	6UW42AA

Options and Accessories (Sold separately and availability may vary by country)

HP Combination Nano Cable Lock	63B28AA
HP Essential Combination Nano Cable Lock	63B31AA

Change Log

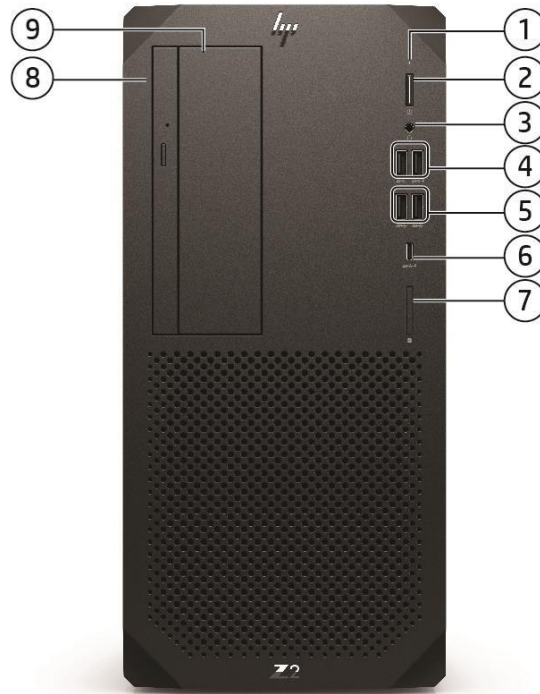
Date of change:	Version History:		Description of change:
March 30, 2023	V1 to V2	Updated	LPDDR5 memory speed, added Environmental Data and Battery Life
April 6, 2023	V2 to V3	Updated	DisplayPort™ in Display section
April 11, 2023	V3 to V4	Updated	Integrated Graphics
May 9, 2023	V4 to V5	Updated	Product weight in Weight and Dimensions section
June 5, 2023	V5 to V6	Updated	Storage and Drives section
June 30, 2023	V6 to V7	Updated	Environmental Data
July 12, 2023	V7 to V8	Added	Memory in Memory section
August 2, 2023	V8 to V9	Updated	Environmental Data and Memory section
August 14, 2023	V9 to V10	Updated	Graphics section
August 18, 2023	V10 to V11	Updated	Networking section
October 11, 2023	V11 to V12	Updated	Panel Color Depth in Displays section
November 2, 2023	V12 to V13	Updated	Storage and Drives section
February 1, 2024	V13 to V14	Update	Display Section
February 19, 2024	V14 to V15	Added	Power Section
February 21, 2024	V15 to V16	Removed	Intel® Iris® X ^e Graphics Disclaimer
February 27, 2024	V16 to V17	Updated	At a Glance and TPM Section

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Overview

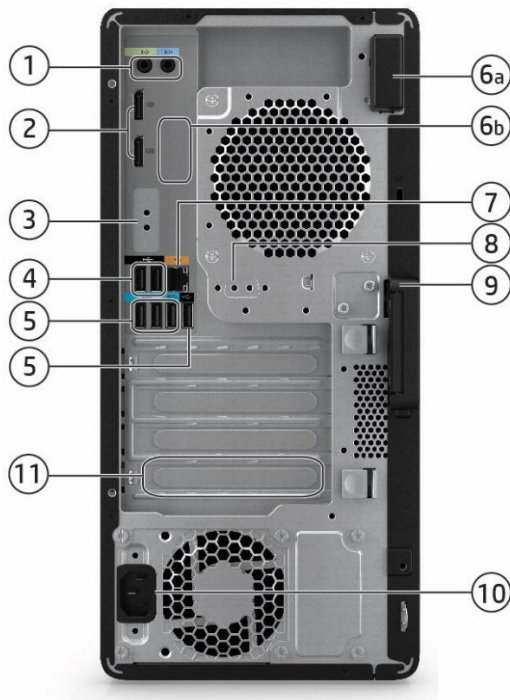
HP Z2 G9 Tower Workstation Desktop PC



front

- | | |
|--|---|
| 1. HDD Activity LED | 6. (1) USB-C® 20Gbps port (optional, charge supports up to 5V/3A) |
| 2. Power button | 7. SD card reader 4.0 (optional) |
| 3. Universal audio jack (with CTIA & OMTP headset support) | 8. Slim ODD bay |
| 4. (2) USB-A 10Gbps ports (1 charge port supports up to 5V/2.1A) | 9. External 5.25" bay |
| 5. (2) USB-A 10Gbps rate ports | |

Overview



rear

1. (1) Audio Line-in jack
(1) Audio Line-out jack

2. (2) DisplayPort 1.4 ports

3. Flex I/O module: choose one from the following:
(1) DisplayPort 1.4, (1) HDMI 2.0b, (1) VGA, (1) Dual USB-A 5Gbps port, (1) USB-C® 10Gbps port (Power Delivery 15W, Alt Mode DisplayPort), (1) 2nd 1 GbE LAN, (1) Thunderbolt 3 with USB-C® / USB4 40Gbps * (cabled to PCIe AIC**) (1) 1Gbps Fiber LC NIC

4. (2) Hi-Speed USB-A 480Mbps port

5. (2) USB-A 10Gbps ports
(1) USB-A 5Gbps port
(1) Hi-Speed USB-A 480Mbps port
6. (1) WLAN Antenna (optional)
a. Internal
b. External

7. (1) 1Gb LAN

8. 2nd serial port (optional)

9. Hood lock (optional)

10. Power connector

*Maximum speed requires DisplayPort™ and PCIe aggregation.

**Thunderbolt support only in PCI-E slot4.

NOTE: Onboard Display support DP1.4/HBR2. Flex I/O module Display support DP1.4/HBR3. Resolution all support up to 5120x3200 24bpp @60Hz.

Form Factor Tower

- Operating Systems
- Preinstalled:
 - Windows 11 Pro - HP recommends Windows 11 Pro²
 - Windows 11 Home - HP recommends Windows 11 Pro²
 - Windows 10 Pro (available through downgrade rights from Windows 11 Pro) ^{1,2,3}
 - Linux®-ready⁵

Overview

- Ubuntu^{4,5}
 - Intel 12th generation processors will support and preinstall Ubuntu 20.02 and 20.04.
 - Intel 13th generation processors support and preinstall Ubuntu 22.04 LTS

Web-supported only:

- Windows 10 Enterprise 64²

Supported Version:

- HP tested Windows 10, versions 20H2, 21H1, 21H2 and 22H2 on this platform. For testing information on newer versions of Windows 10, please see: <https://support.hp.com/document/c05195282>.
- Red Hat® Enterprise Linux® Workstation 8⁶
- SUSE Linux® Enterprise Desktop 15⁶
- Ubuntu^{4,5}
 - Intel 12th generation processors will support and preinstall Ubuntu 20.02 and 20.04.
 - Intel 13th generation processors support and preinstall Ubuntu 22.04 LTS

¹ Device comes with Windows 10 and a free Windows 11 upgrade or may be preloaded with Windows 11. Upgrade timing may vary by device. Features and app availability may vary by region. Certain features require specific hardware (see Windows 11 Specifications).

² Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com>.

³ This system is preinstalled with Windows 10 Pro software and also comes with a license for Windows 11 Pro software and provision for recovery software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.

⁴ Not all features are available in all editions or versions of Ubuntu. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS to take full advantage of Ubuntu functionality. Ubuntu may be automatically updated. ISP fees may apply and additional requirements may apply over time for updates.

⁵ A certified preloaded version of Ubuntu® 20.04 LTS is available from HP for this platform. Not all features are available in all editions or versions of Ubuntu. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS to take full advantage of Ubuntu functionality. Ubuntu may be automatically updated. ISP fees may apply, and additional requirements may apply over time for upgrades.

⁶ For detailed Linux® OS/hardware support information, see: http://www.hp.com/support/linux_hardware_matrix

NOTE: Your product does not support Windows 8 or Windows 7. In accordance with Microsoft's support policy, HP does not support the Windows® 8 or Windows 7 operating system on products configured with Intel® and AMD® 7th generation and forward processors or provide any Windows® 8 or Windows 7 drivers on <http://www.support.hp.com>. A full list of HP products and the Windows 10 versions tested is available on the HP support website. <https://support.hp.com/us-en/document/c05195282>

Processors Overview^{1,2,3,4,5}

Intel 13th Generation Processors:

Intel® Core™ i5-13400 (2.5GHz P-Core base frequency, 1.8GHz E-Core base frequency, up to 3.3GHz E-Core Max Turbo frequency, up to 4.6 GHz P-core Max Turbo frequency, 20MB L3 cache, 6 P-cores and 4 E-cores, 16 threads)

Overview

Intel® Core™ i5-13500 (2.5GHz P-Core base frequency, 1.8GHz E-Core base frequency, up to 3.5GHz E-Core Max Turbo frequency, up to 4.8 GHz P-core Max Turbo frequency, 24MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)

Intel® Core™ i5-13600 (2.7GHz P-Core base frequency, 2GHz E-Core base frequency, up to 3.7GHz E-Core Max Turbo frequency, up to 5 GHz P-core Max Turbo frequency, 24MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)

Intel® Core™ i5-13600K (3.5GHz P-Core base frequency, 2.6GHz E-Core base frequency, up to 3.9GHz E-Core Max Turbo frequency, up to 5.1 GHz P-core Max Turbo frequency, 24MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)

Intel® Core™ i7-13700 (2.1GHz P-Core base frequency, 1.5GHz E-Core base frequency, up to 4.1GHz E-Core base frequency, up to 5.1GHz E-Core base frequency, 30MB L3 cache, 8 P-cores and 8 E-cores, 24 threads)

Intel® Core™ i7-13700K (3.4GHz P-Core base frequency, 2.5GHz E-Core base frequency, up to 4.2GHz E-Core Max Turbo frequency, up to 5.3 GHz P-core Max Turbo frequency, 30MB L3 cache, 8 P-cores and 8 E-cores, 24 threads)

Intel® Core™ i9-13900 (2GHz P-Core base frequency, 1.5GHz E-Core base frequency, up to 4.2GHz E-Core Max Turbo frequency, up to 5.2 GHz P-core Max Turbo frequency, 36MB L3 cache, 8 P-cores and 16 E-cores, 32 threads)

Intel® Core™ i9-13900K (3GHz P-Core base frequency, 2.2GHz E-Core base frequency, up to 4.3GHz E-Core Max Turbo frequency, up to 5.4 GHz P-core Max Turbo frequency, 36MB L3 cache, 8 P-cores and 16 E-cores, 32 threads)

Intel 12th Generation Processors:

Intel® Core™ i9-12900K (2.4GHz E-core base frequency, 3.2GHz P-core base frequency, up to 3.9 GHz E-core Max Turbo frequency, up to 5.1 GHz P-core Max Turbo frequency, 30MB L3 cache, 8 P-cores and 8 E-cores, 24 threads)

Intel® Core™ i9-12900 (1.8GHz E-core base frequency, 5.0 GHz P-core base frequency, up to 3.8 GHz E-core Max Turbo frequency, up to 5.0 GHz P-core Max Turbo frequency, 30MB L3 cache, 8 P-cores and 8 E-cores, 24 threads)

Intel® Core™ i7-12700K (2.7 GHz E-core base frequency, 3.6 GHz P-core base frequency, up to 3.8 GHz E-core Max Turbo frequency, up to 4.9 GHz P-core Max Turbo frequency, 25MB L3 cache, 8 P-cores and 4 E-cores, 20 threads)

Intel® Core™ i7-12700 (1.6 GHz E-core base frequency, 2.1 GHz P-core base frequency, up to 3.6 GHz E-core Max Turbo frequency, up to 4.8 GHz P-core Max Turbo frequency, 25MB L3 cache, 8 P-cores and 4 E-cores, 20 threads)

Intel® Core™ i5-12600K (2.8 GHz E-core base frequency, 3.7 GHz P-core base frequency, up to 3.6 GHz E-core Max Turbo frequency, up to 4.9 GHz P-core Max Turbo frequency, 20MB L3 cache, 6 P-cores and 4 E-cores, 16 threads)

Intel® Core™ i5-12600 (3.3 GHz P-core base frequency, up to 4.8 GHz P-core Max Turbo frequency, 18MB L3 cache, 6 P-cores and 0 E-cores, 12 threads)

Intel® Core™ i5-12500 (3.0 GHz P-core base frequency, up to 4.6 GHz P-core Max Turbo frequency, 18MB L3 cache, 6 P-cores and 0 E-cores, 12 threads)

Intel® Core™ i5-12400 (2.5 GHz P-core base frequency, up to 4.4 GHz P-core Max Turbo frequency, 18MB L3 cache, 6 P-cores and 0 E-cores, 12 threads)

Intel® Core™ i3-12300 (3.5 GHz P-core base frequency, up to 4.4 GHz P-core Max Turbo frequency, 12MB, 4 P-cores. 8 threads)

Intel® Core™ i3-12100 (3.3 GHz P-core base frequency, up to 4.3 GHz P-core Max Turbo frequency, 12MB, 4 P-cores. 8 threads)

¹ Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.

² Intel® Optane™ memory system acceleration does not replace or increase the DRAM in your system.

³ Intel Turbo Boost performance varies depending on hardware, software and overall system configuration. See <http://www.intel.com/technology/turboboost> for more information.

⁴ Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd party software in order to run. Features of vPro® Essentials and Enterprise vary. See <http://intel.com/vpro>

Overview

⁵ Memory will run at 4400 speed (MT/s) in 2DPC within 1DIMM population; memory will run at 4000 speed (MT/s) in 2DPC within 2DIMM of 1 Rank population and memory will run at 3600 speed (MT/s) in 2DPC within 2DIMM of 2 Rank population

Color	Black
Convertibility	No
Expansion Slots (see system board section for more details)	Slot 1: PCIe Gen5 x16 Slot 2: PCIe Gen3 x1 - with x4 open end Connector Slot 3: PCIe Gen3 x4 - with x16 Connector Slot 4: PCIe Gen3 x4 with open end connector
Expansion Bays (see storage section for more details)	(2) Internal 3.5" bays (1) External 5.25" bay (1) Internal 2.5" bay (for SSD only) (1) Dedicated 9.5mm slim optical disk drive bay
Front I/O	(2) USB-A 10Gbps ports (1 charge port supports up to 5V/2.1A), (2) USB-A 10Gbps ports, (1) USB-C 20Gbps eport (charge supports up to 5V/3A, optional), (1) SD card reader (optional), (1) universal audio jack
Internal I/O [5]	(1) Hi-Speed USB 480Mbps header for SD card reader (1) serial port available with header (1) serial and PS/2 available with header
Rear I/O	(2) DisplayPort 1.4 ports, (1) Audio Line out, (1) Audio Line in, (1) 1GbE LAN, (3) Hi-Speed USB 480Mbps ports, (2) USB-A 10Gbps ports, (1) USB-A 5Gbps port, (1) serial (optional), (1) Flex I/O port (VGA, HDMI 2.0b, DisplayPort 1.4, USB-C® 10Gbps port (Power Delivery 15W, Alt Mode Display Port), (1) Dual USB-A 5Gbps port, (1) 2nd 1GbE LAN, (1) Thunderbolt 3 with USB4 USB-C® 40Gbps (cabled to PCIe AIC)*, (1) 1Gbps Fiber LC NIC
Optional I/O	Flex IO* – choose one of the following options: (1) DisplayPort™ 1.4 port, (1) HDMI 2.0b, (1) VGA, (1) 2nd 1GbE LAN, (1) 1Gbps Fiber LC NIC, (1) Dual USB-A 5Gbpsport, (1) USB -C® 10Gbps port (15W USB Power Delivery, Alt Mode DisplayPort™), (1) Thunderbolt™ 3 with USB4 USB-C® 40Gbps port (cabled to PCIe® AIC**); Front – (1) USB-C® 20Gbps port (charging), (1) SD card reader; Front – choose one of the following options: (1) USB-C ® 20Gbps (charging), (1) SD 4.0 card reader Rear –(1) serial;

*About Thunderbolt compatibility, please refer to the FAQ of Thunderbolt community.
<https://www.thunderbolttechnology.net/tech/faq>

**Flex IO port and PCIe slot 4 will be occupied when Thunderbolt is installed.

Interfaces Supported	SD card reader (optional)
On-board RAID Support	SATA and NVME RAID 0 Striped Array SATA RAID and NVME RAID 1 Mirror Array
Chassis Dimensions (H x W x D)	H: 14" [356mm] W: 6.7" [169mm] D: 15.2" [385mm]

Overview

Packaged Dimensions	H: 20.39" (518mm) W: 11.61" (295mm) D: 19.29" (490mm)
Rack Dimensions	4U
Weight	Exact weights depend upon configuration (System weight only). Starting at 6.2kg (13.7lbs.)
Temperature	Operating: 5° to 35° C (40° to 95° F) Above 1524 m (5,000 feet) altitude, the maximum operating temperature is reduced by 1° C (1.8° F) for every 305 m (1,000 feet) increase in elevation Non-operating: -40° to 60° C (-40° to 140° F) Maximum rate of change: 10°C/hr
Humidity	Operating: 10% to 85% RH, non-condensing, 35° C maximum wet bulb Non-operating: 10% to 90% RH, non-condensing, 35° C maximum wet bulb
Maximum Altitude (non-pressurized)⁶	Operating (with Rotational Hard Drives): 3,048 m (10,000 feet) Operating (with only Solid-State Drives): 5,000 m (16,404 feet) Non-operating: 12,192 m (40,000 feet) Maximum operating temperature is reduced as altitude increases. See Temperature for details.
Power Supply	700W wide-ranging, active Power Factor Correction, 92% Efficiency with two 6+2 graphics power connectors. 500W wide-ranging, active Power Factor Correction, 90% Efficiency. 450W wide-ranging, active Power Factor Correction, 90% Efficiency. 350W wide-ranging, active Power Factor Correction, 92% Efficiency. NOTE: The Power Supply Efficiency Report for the 700W 92% Efficiency, 500W 90% Efficiency, 450W 90% Efficiency and 350W 92% Efficiency Power Supply may be found at the following links: 700W PSU: https://www.pluginloadsolutions.com/80PlusPowerSuppliesDetail.aspx?id=0&type=2 500W PSU: LiteOn 500W PSU Efficiency Report Delta 500W PSU Efficiency Report 450W PSU: https://www.pluginloadsolutions.com/80PlusPowerSuppliesDetail.aspx?id=0&type=2 350W PSU: AcBel 350W PSU (SFF) Efficiency Report AcBel 350W PSU (Custom) Efficiency Report Delta 350W PSU Efficiency Report
Backup Devices	For a complete listing of compatible DAT tape drives, LTO tape drives and RDX Removable Disk Backup System offerings, please visit http://www.hp.com/go/connect
Chipset	Intel® W680 chipset
Memory	4 DIMM slots, supporting up to 128GB ECC/non-ECC, DDR5 4800 MT/s speed depending on the system configuration

Supported Components

SATA Hard Drives

	Factory Configured	Option Kit	Option Kit Part Number
500GB SATA 7200 rpm 6Gb/s 3.5" HDD	Y	Y	LQ036AA
1TB SATA 7200 rpm 6Gb/s 3.5" HDD	Y	Y	LQ037AA
2TB SATA 7200 rpm 6Gb/s 3.5" HDD	Y	Y	QB576AA
1TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Y	Y	W0R10AA
2TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Y	Y	2Z274AA
4TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Y	Y	K4T76AA
8TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Y	Y	2Z273AA
12TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Y	Y	5S461AA
500GB SATA 7.2K SED HDD	Y	Y	D8N29AA

NOTE: For internal bay install, HDD option kits require separate purchase of 6Z9U6AA HP Z2 Tower HDD Cable Kit. For external bay install, HDD options kits require separate purchase of 6Z9U6AA HP Z2 Tower HDD Cable Kit & NQ099AA HP Optical Bay HDD Mounting Bracket.

PCIe Solid State Drives

HP ZTurbo 512GB PCIe-Gen 4x4 TLC Z2 SSDKit	Y	Y	201G0AA/AT
HP ZTurbo 512GB PCIe-Gen 4x4 SED Z2 SSDKit	Y	Y	201F9AA
HP ZTurbo 1TB PCIe-Gen 4x4 TLC Z2 SSDKit	Y	Y	201F5AA/AT
HP ZTurbo 2TB PCIe-Gen 4x4 TLC Z2 SSDKit	Y	Y	201F8AA
Z Turbo 1TB 2280 PCIe-Gen4x4 Self Encrypted OPAL2 TLC M.2 Z2 SSD	Y	Y	223A3AA/AT
Z Turbo 2TB 2280 PCIe-Gen4x4 Self Encrypted OPAL2 TLC M.2 Z2 SSD	Y	Y	223A4AA/AT
256GB 2280 PCIe-4x4 NVMe Value M.2 Z2 Kit SSD	Y	Y	4M9Z1AA
512GB 2280 PCIe-4x4 NVMe Value M.2 Z2 Kit SSD	Y	Y	4M9Z2AA
1TB 2280 PCIe-4x4 NVMe Value M.2 Z2 Kit SSD	Y	Y	4M9Z3AA
Z Turbo 4TB 2280 PCIe-4x4 TLC M.2 Z2 Kit SSD	Y	Y	5S492AA
Z Turbo 2TB PCIe-4x4 TLC SSD Module	Y	Y	38T75AA
Z Turbo 1TB 2280 PCIe-4x4 SED OPAL2 TLC M.2 SSD Module	Y	Y	38T76AA
Z Turbo 1TB PCIe-4x4 TLC SSD Module	Y	Y	38T77AA
Z Turbo 2TB 2280 PCIe-4x4 SED OPAL2 TLC M.2 SSD Module	Y	Y	38T79AA
Z Turbo 512GB PCIe-4x4 TLC SSD Module	Y	Y	38T80AA
Z Turbo 512GB 2280 PCIe-4x4 SED OPAL2 TLC M.2 SSD Module	Y	Y	38T81AA
Z Turbo 4TB 2280 PCIe-4x4 TLC M.2 SSD Module	Y	Y	5S496AA
Z Turbo 4TB 2280 PCIe-4x4 SED OPAL2 TLC M.2 SSD Module	Y	Y	5S497AA
Z Turbo 4TB 2280 PCIe-4x4 SED OPAL2 TLC M.2 Z2 Kit SSD	Y	Y	5S498AA

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

Graphics

Factory Configured	Option Kit	Option Kit Part Number	Supported # of cards	Support Notes
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Supported Components

Graphics Cable Adapters	HP DisplayPort To HDMI True 4k Adapter	Y	Y	2JA63AA		
	HP Single miniDP-to-DP Adapter Cable	Y	Y	2MY05AA		
	HP DisplayPort To DVI-D Adapter	Y	Y	FH973AA		
	HP DisplayPort To DVI Adapter (Bulk 90)	Y	Y	FH973A6		
			Y	AS615AA/AT		
	HP DisplayPort To VGA Adapter	Y				
	HP DisplayPort to VGA Adapter Bulk Qty.90)	Y	Y	AS615A6		
	HP DisplayPort To VGA Adapter	Y	Y	F7W97AA		
	HP USB-C to DisplayPort Adapter	Y	Y	4SH08AA		
	HP USB-C to HDMI Adapter	Y	Y	4SH07AA		
	HP USB-C to VGA Adapter	Y	Y	4SH06AA		
Entry 3D	NVIDIA® T400 4 GB Graphics ²	Y	Y	5Z7E0AA/AT	2	1
	NVIDIA® T600 4 GB Graphics ¹	N	Y	340K9AA	2	1
	AMD Radeon Pro WX 3200 4GB	Y	Y	6YT6*AA/AT	1	1
Mid-range 3D	AMD Radeon RX 6400 4 GB DH DP+HDMI Graphics	N	Y	6Q3U4AA/AT	1	1
	NVIDIA® T1000 4 GB Graphics	Y	Y		2	1
	NVIDIA® T1000 8 GB Graphics	Y	Y	5Z7D8AA/AT	2	1
	NVIDIA Long-Life T1000E 8 GB 4mDP Graphics	Y	Y	6V9V4AA/AT	2	1
	NVIDIA RTX™ A2000 6 GB 4mDP Graphics*	Y	Y	340L0AA	2	
	NVIDIA RTX™ A2000 12GB Graphics*	Y	Y	5Z7D9AA/AT	2	
	NVIDIA RTX™ A4000 16GB*	Y		20X24AA/AT	2	
	NVIDIA Long-Life RTX A4000E 16 GB 4DP Graphics*	Y	Y	6H7J7AA	1	
	NVIDIA RTX™ 4000 Ada 20 GB 4DP Graphics*	Y	Y	8D6B7AA	2	
	NVIDIA Long-Life RTX A2000E 12 GB 4mDP Graphics	Y	Y	6V9V5AA/AT	2	
High-End 3D	AMD Radeon™ Pro W6600 Graphics (8GB GDDR6 dedicated) *	Y	Y	340K5AA	1	
	AMD Radeon™ Pro W6800 Graphics (32 GB GDDR6 dedicated) *	Y	Y	340K7AA	1	
	AMD Radeon Pro W7900 48 GB 3DP+1mDP Graphics	Y	Y	8F699AA	1	
	AMD Radeon Pro W7600 8 GB Graphics*	Y		8D6B9AA	1	
	AMD Radeon Pro W7500 8 GB Graphics	Y	Y	8D6C2AA	1	
	NVIDIA RTX 4500 Ada 24 GB 4DP Graphics	Y	Y	8D6C1AA	1	
	NVIDIA® RTX™ A5000 24 GB Graphics*	Y	Y	20X23AA/AT	1	

Supported Components

NVIDIA RTX 5000 Ada 32 GB 4DP Graphics	Y	Y	8D6B6AA	1
AMD Radeon™ RX 6700 XT 12GB*	Y	Y	4C203AA	1

NOTE: Z2 G9 Tower with 700W PSU can support up to a 250W professional graphics card from HP, either factory-configured or added via after-market option, and can support up to 320W total graphics power when graphics is factory-configured.

Note 1: When dual graphics is configured the 450W and 500W base units will require the AMO HP Z2 TWR Dual Front Fan Kit part number 4N007AA; One storage device configuration for higher than 75W graphics cards (T1000 and up)

* Requires 700W chassis.

Memory

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
HP 8GB (1x8GB) DDR5-4800 nECC UDIMM	Y	Y	4M9X9AA	
HP 16GB (1x16GB) DDR5-4800 nECC UDIMM	Y	Y	4M9Y0AA	
HP 16GB (1x16GB) DDR5-4800 ECC UDIMM	Y	Y	4M9Y1AA	1
HP 32GB (1x32GB) DDR5-4800 nECC UDIMM	Y	Y	4M9Y2AA	
HP 32GB (1x32GB) DDR5-4800 ECC UDIMM	Y	Y	4M9Y3AA	1

NOTE 1: ECC memory is supported

GENERAL NOTE: Two channels of DDR5 memory are supported. To realize full performance at least one DIMM must be inserted into each channel.

Though the memory modules can run up to 4800MHz, the current platform will support maximum memory speed of 4400MHz.

The system speed will be determined by a number of key factors:

Module Configuration	Description of configuration	Max Memory Speed (Actual Memory speed is dependent on CPU)
Single DIMM per channel	Configurations that contain only one or two DIMM modules with DIMMs only in the black slots	4400MHz
Two single ranked DIMMs in a channel	Configurations with 3 or 4 single ranked DIMMs (8GB and 16GB) installed in a system	4000MHz
Two dual ranked DIMMs in a channel	Configurations with 3 or 4 dual ranked DIMMs (32GB) installed in a system	3600MHz

When more than one memory slot is populated, symmetric configurations are required for 2 DIMMs per channel. Mix of different part numbers or mix of single and dual ranks within a channel is not allowed.

Optical and Removable Storage

	Factory Configured	Option Kit	Option Kit Part Number
HP DX175 Removable HDD Frame/Carrier	N	Y	1ZX71AA
HP DX175 Removable HDD Spare Carrier	N	Y	1ZX72AA
HP Z2 TWR SuperMulti DVD-Writer 9.5mm Slim ODD	Y	Y	4L5K0AA
HP Z2 TWR DVD-ROM 9.5mm Slim ODD	Y	Y	4L5K1AA
HP CRU QX328 5.25 in Front Removable <u>M.2</u> Frame/Carrier	Y	Y	4N011AA

Supported Components

HP CRU Secure High Performance Storage Module with 2TB M.2 SSD	Y	Y	56Q87AA
HP CRU Secure High Performance Storage Module with 1TB M.2 SSD	Y	Y	56Q88AA
HP CRU Secure High Performance Storage Module with 512GB M.2 SSD	Y	Y	56Q89AA
HP CRU SHIPS M.2 Spare Carrier	Y	Y	633X9AA

NOTES: Duplication of copyrighted material is strictly prohibited. Actual speeds may vary. Double Layer media compatibility will widely vary with some home DVD players and DVD-ROM drives. Note that DVD-RAM cannot read or write to 2.6GB Single Sided/5.2 Double Sided-Version 1.0 Media.

4N011AA HP CRU QX328 5.25in Front Removeable Frame/Carrier requires a separate purchase of HP CRU SHIPS Storage Module(s).

HP CRU Secure High Performance Storage (SHIPS) Module Kit contains select M.2 SSD for install into a factory configured or after market option front removeable storage carrier (HP CRU QX328 Frame/Carrier).

Networking and Communications

	Factory Configured	Option Kit	Option Kit Part Number
Integrated Intel® I219LM PCIe GbE Controller (Intel® vPro® with Intel® AMT 16.0)	Y	N	
HP 1GbE LAN Flex Port 2020	Y	Y	141J6AA/AT
HP Flex 1GbE Fiber LC Single Port	Y	Y	20J15AA
NVIDIA Mellanox ConnectX-6 DX Dual Port 10/25GbE SFP28 NIC ¹	Y	Y	436M8AA
HP 10GbE SFP+ SR/SW LC Fiber Optic Transceiver	Y	Y	860T8AA
HP 25GbE SFP28 LC Fiber Optic Transceiver	Y	Y	860T9AA
Intel Ethernet I350-T4 4-Port 1Gb NIC*	N	Y	W8X25AA
Intel X550 10GBASE-T Dual Port NIC	Y	Y	1QL46AA
Intel Ethernet Network Adapter I225-T1	Y	Y	406L9AA
Intel Wi-Fi 6E AX211 BT 5.3 wireless card M.2 non-vPro ^{1,**,***}	Y	N	
Allied Telesis AT-2911T/2-901 Dual Port 1GbE NIC	Y	Y	6E3Y9AA/AT
Intel BE200 Wi-Fi 7 +Bluetooth 5.4 non-vPro WW WLAN****	Y		

*Intel I350-T4 4-port GbE NIC is an After Market Option only.

¹ Intel AX211 with Internal antenna support WIFI 6/WIFI 6E

**Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.

***Intel AX211 must be configured at time of purchase. Not available as an After Market Option.

**** Not available with 12th Gen Intel ADL processors; Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 7 (802.11BE) functionality requires Windows 11 24H2, select Intel® processor, and a Wi-Fi 7 router, sold separately. Wi-Fi 7 is backwards compatible with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported.

NOTES:

The integrated network connection is required to support Intel® vPro® Technology.

If AMT is provisioned, then network teaming with the integrated LAN port is not possible.

Supported Components

“Gigabit” Ethernet indicates compliance with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/sec. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

Supported Components

Input Devices

	Factory Configured	Option Kit	Option Kit Part Number
HP USB 320K Keyboard	Y	Y	9SR37AA
HP 320M Wired Mouse	Y	Y	9VA80AA
HP Wired Desktop 320MK Mouse and Keyboard	N	Y	9SR36AA
HP 125 Wired Keyboard	Y	Y	266C9AA
HP 975 USB+BT Dual Mode Wireless	N	Y	3Z726AA
HP 655 Wireless USB BLK KBD/MSE Kit	N	Y	N/A
HP 125 Wired Mouse	Y	Y	265A9AA
HP 128 Laser Wired Mouse	Y	Y	265D9AA
HP 935 Creator Wireless Mouse	N	Y	1D0K8AA
HP 455 Programmable Wireless Keyboard	Y	Y	4R177AA
HP 455 Programmable Wireless Keyboard (Bulk Qty.12)	Y	Y	4R177A6
HP 655 Wireless Keyboard and Mouse Combo	Y	Y	4R009AA
HP 655 Wireless Keyboard and Mouse Combo (Blk Qty.10)	Y	Y	4R009A6

NOTE: Keyboard and Mouse are optional or add on features.

Flex Module (Rear IO)

	Factory Configured	Option Kit	Option Kit Part Number
HP 1GbE LAN Flex Port 2020	Y	Y	141J6AA/AT
HP DP Flex Port 2020	Y	Y	141J7AA/AT
HP Dual USB-A 3.2 Gen1 Flex Port 2020	Y	Y	141J8AA/AT
HP HDMI Flex Port	Y	Y	69D47AA/AT
HP USB-C 3.2 Gen2 Alt Flex Port 2020	Y	Y	141K6AA/AT
HP VGA Flex Port 2020	Y	Y	141K7AA/AT
HP Flex 1GbE Fiber LC Single Port	Y	Y	20J15AA

Other Hardware

	Factory Configured	Option Kit	Option Kit Part Number
HP Single TBT3 wType C and USB4 PCIe x4 Card	Y	N	N/A
HP Z2 Internal Serial Port and PS/2 Port	Y	Y	141K9AA/AT
HP Z2 Power Cord Kit	Y	Y	1N1D5AA
C13-C14 2.0m 15A 100-127V Countries Straight Desktop Power Cord	Y	Y	8R881AA
C13-C14 2.0m 10A 200-240V Countries Straight Desktop Power Cord	Y	Y	8R882AA
HP Z2 2 nd serial port adapter	Y	Y	141K8AA/AT
HP Z2 Tower Dust Filter	Y	Y	141L2AA/AT
HP Z2 Tower Dust Filter and bezel	Y	Y	141L3AA/AT
HP PCIe x1 Parallel Port Card	Y	Y	N1M40AA
HP Z2 G9 Single Type-C SuperSpeed USB 20Gbps Front Port	Y	Y	4M9X8AA/AT
HP Z2 TWR Dual Front Fan Kit	Y	Y	4N007AA
HP Optical Bay HDD Mounting Bracket	Y	Y	NQ099AA
HP Z2 Tower HDD Cable Kit	N	Y	6Z9U6AA
HP Anywhere Integrated Remote System Controller	Y	Y	7K6D9AA

Supported Components

HP Anyware Remote System Controller Main Board Adapter	Y	Y	7K6D8AA
HP Anyware Remote System Controller	Y	Y	7K6D7AA
HP Anyware Remote System Controller for Universal KVM	N	Y	7K7N2AA

Racking and Physical Security

	Factory Configured	Option Kit	Option Kit Part Number
HP Z2 Mini and Z2/Z4/Z6 TWR Depth Adjustable Fixed Rail Rack Kit	Y	Y	2A8Y5AA
HP Keyed Cable Lock	Y	Y	T1A62AA
HP Master Keyed Cable Lock 10mm	Y	Y	T1A63AA
HP Business PC Security Lock V3 Kit	Y	Y	3XJ17AA

Software

	Factory Configured	Option Kit	Support Notes
HP Performance Advisor	Y	N	1
HP PC Hardware Diagnostics UEFI (Windows OS only)	Y	N	2
HP PC Hardware Diagnostics Windows		N	3
HP Wolf Security	Y	N	
HP Notifications	Y	N	
HP Desktop Support Utility	Y	N	
HP Documentation	Y	N	
HP Image Assistant	N	N	
HP Support Assistant	N	N	
myHP	Y	N	
HP Easy Clean	Y	N	
Kingsoft WPS Office	Y	N	4
My Office	Y	N	5
Adobe Substance 3D Collection Plan	N	Y	6
WSL2/Ubuntu Data Science Stack	Y	N	7

Notes:

1. Supports, and preinstalled with Windows 10 only. Also available as a free download from <http://www.hp.com/go/performanceadvisor>
2. Windows OS only
3. Not available in Russia
4. Only available in China
5. Only available in Russia
6. Not available in China
7. Optional Software

Operating Systems

Windows 11 Pro – HP recommends Windows 11 Pro²
 Windows 11 Home – HP recommends Windows 11 Pro²
 Windows 10 Pro (available through downgrade rights from Windows 11 Pro)^{1,2,3}
 Linux®-ready⁵
 Ubuntu®^{4,5}

Supported Components

- Intel 12th generation processors will support and preinstall Ubuntu 20.02 and 20.04.
- Intel 13th generation processors support and preinstall Ubuntu 22.04 LTS

¹ Device comes with Windows 10 and a free Windows 11 upgrade or may be preloaded with Windows 11. Upgrade timing may vary by device. Features and app availability may vary by region. Certain features require specific hardware (see Windows 11 Specifications).

² Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com>.

³ This system is preinstalled with Windows 10 Pro software and also comes with a license for Windows 11 Pro software and provision for recovery software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.

⁴ Not all features are available in all editions or versions of Ubuntu. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS to take full advantage of Ubuntu functionality. Ubuntu may be automatically updated. ISP fees may apply and additional requirements may apply over time for updates.

⁵ For detailed Linux® OS/hardware support information, see: http://www.hp.com/support/linux_hardware_matrix

NOTE: Your product does not support Windows 8 or Windows 7. In accordance with Microsoft's support policy, HP does not support the Windows® 8 or Windows 7 operating system on products configured with Intel® and AMD® 7th generation and forward processors or provide any Windows® 8 or Windows 7 drivers on <http://www.support.hp.com>. A full list of HP products and the Windows 10 versions tested is available on the HP support website. <https://support.hp.com/us-en/document/c05195282>

Supported Components

HP BIOS

Additional HP BIOS Features:

- Power-On password – Helps prevent an unauthorized user from powering on the system.
- Administrator password – Also known as the BIOS Setup password, this helps prevent unauthorized changes to the system configuration. If the administrator password is not known, the BIOS cannot be updated and changes cannot be made to BIOS settings using BIOS Setup or under the OS.
- S4/S5 Maximum Power Savings setting supports EU Lot6 requirement and allows the computer to power down below 0.5W in S4/S5 (when turned off). When S4/S5 Maximum Power Savings feature is enabled below features are turned off:
 - Power to expansion connectors / slots
 - Most Wake events other than power buttons and WOL(Wake on LAN supported by embedded Lan controller under S4/S5 Maximum Power Saving Enabled)
 - USB charging ports

HP Sure Start Gen7 Start

- BIOS Integrity checking – Sure Start protection ensures that only trusted BIOS code is executed and not rootkits, viruses and malware. Verification is done upon boot up, shutdown and while the system is on.
- Sure Start is set by default to automatically repair the BIOS if corrupted or compromised but is policy driven for better manageability. Start is set by default to automatically repair the BIOS if corrupted or compromised but is policy driven for better manageability.
- Protecting beyond BIOS – Integrity checking and repair is extended to other data that should be protected such as network configuration parameters, platform specific information (i.e. system IDs), secure boot credentials, and other code the system needs to boot.
- Audit enabled – System Audit via Sure Start Event Logs capture data such as incident, repair date and time for troubleshooting and investigating

NOTE: HP Sure Start Gen7 is available on HP Workstation products equipped with Intel® 12th generation processors.

HP Performance Control Modes

HP Z Desktop Workstations offers Performance Control Modes in the F10 BIOS menu. Z2 G9 offers Quiet Mode, Performance Mode and High-Performance Mode. HP recommends using High Performance Mode unless you have concerns about acoustics in an open office environment. Customers can get up to 34% performance improvements using High Performance Mode over Performance Mode*. It is possible to configure High Performance Mode as default from the factory.

How to Set HP Performance Control Modes in HP F10 BIOS Menu

In the F10 BIOS Menu, the setting titled “Performance Control” is adjustable to High Performance Mode, Performance Mode or Quiet Mode. These modes are choice points for performance and acoustic trade-offs based on user needs or recommended balanced conditions in performance and noise optimization.

At startup, push the F10 key while system is booting to get to the BIOS Menu.

Go to → Advanced → System Options → scroll down and choose “Performance Control”

Set the Performance Mode you desire and then go back to Main → Save Changes and Exit → Yes
The machine will restart in the mode you’ve chosen.

How to set HP Performance Mode in HP Performance Advisor software, select BIOS Settings → Advanced → System Options → Performance Controls

The machine will restart in the mode you’ve chosen.

Supported Components

You can change these modes anytime you prefer to prioritize acoustics (Quiet Mode), want a balance between performance and acoustics (Performance Mode) or prefer to prioritize performance (High Performance Mode).

For more information on performance control modes, please see the white paper called, HP Performance Control Modes for Z Desktop Workstations.

[*Compared to Performance Mode. Performance increase based on Z2 Tower G9 with 64GB of memory, 1TB NVMe, Windows 11 22H2 OS, RTX A4000, i9-13900 CPU using SPECworkstation 3.1](#)

SOFTWARE COMPONENTS AND APPLICATIONS WITH WINDOWS

Software

HP Support Assistant ¹⁴
HP Image Assistant
HP Desktop Support Utility
HP Documentation
HP Notifications
HP PC Hardware Diagnostics UEFI
HP PC Hardware Diagnostics Windows
HP Performance Advisor¹
myHP
HP Easy Clean²⁰
WSL/Ubuntu Data Science Stack
HP Privacy Settings
Touchpoint Customizer for Commercial

Manageability Features

HP Driver Packs²
HP UWP Pack
HP System Software Manager (SSM)
HP Manageability Integration Kit Gen4³
HP Smart Support⁵
HP Client Catalog (download)
HP Image Assistant (download)
HP Cloud Recovery
HP Client Management Script Library (download)
HP BIOSphere Gen6 ¹³

Client Security Software

HP Client Security Suite Gen7⁴ including: (including Credential Manager, HP Password Manager⁶, HP Spare Key)
HP Power On Authentication
Microsoft Defender⁷

Security Management

HP Secure Erase ¹⁶
HP Wolf Pro Security Edition (optional) ¹⁸
HP Wolf Security for Business²² Includes:
HP Sure Click¹¹
HP Sure Sense¹²
HP Sure Run Gen5⁹
HP Sure Recover Gen4 ¹⁰

Supported Components

HP Sure Start Gen7⁸
HP Tamper Lock
HP Sure Admin¹⁷
HP Client Security Manager Gen 7⁴

¹ HP Performance Advisor Software – HP Performance Advisor is ready to help you get the most out of your HP Workstation from day one—and every day after. Learn more or download at: <http://hp.com/PerformanceAdvisor>

² HP Driver Packs not preinstalled, however available for download at <http://www.hp.com/go/clientmanagement>.

³ HP Manageability Integration Kit can be downloaded from <http://www8.hp.com/us/en/ads/clientmanagement/overview.html>

⁴ HP Client Security Manager Gen7 requires Windows and is available on the select HP PCs.

⁵ HP Smart Support automatically collects the telemetry necessary upon initial boot of the product to deliver device-level configuration data and health insights and is available preinstalled on select products, thru HP Factory Configuration Services; or it can be downloaded. For more information about how to enable HP Smart Support or for download, please visit <http://www.hp.com/smart-support>.

⁶ HP Password Manager requires Internet Explorer or Chrome or Firefox. Some websites and applications may not be supported. User may need to enable or allow the add-on / extension in the internet browser.

⁷ Microsoft Defender Opt in and internet connection required for updates.

⁸ HP Sure Start Gen 7 is available on select HP PCs and workstations. See product specifications for availability.

⁹ HP Sure Run Gen5 is available on select Windows 11 based HP Pro, Elite and Workstation PCs with select Intel® or AMD processors

¹⁰ HP Sure Recover Gen4 is available on select HP PCs and requires Windows 10 and an open network connection. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data. Network based recovery using Wi-Fi is only available on PCs with Intel Wi-Fi Module

¹¹ HP Sure Click requires Windows 10 Pro or higher or Enterprise. See https://bit.ly/2PrLT6A_SureClick for complete details.

¹² HP Sure Sense requires Windows 11 Pro or Enterprise and supports Microsoft Internet Explorer, Google Chrome™, and Chromium™. Supported attachments include Microsoft Office (Word, Excel, PowerPoint) and PDF files in read only mode, when Microsoft Office or Adobe Acrobat are installed.

¹³ HP BIOSphere Gen6 features may vary depending on the platform and configurations.

¹⁴ HP Support Assistant requires Windows and Internet access.

¹⁶ Secure Erase – or the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 “C“ear”” sanitization method. HP Secure Erase does not support platforms with Intel® Optane.

¹⁷ HP Sure Admin requires Windows 11, HP BIOS, HP Manageability Integration Kit from <http://www.hp.com/go/clientmanagement> and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store.

¹⁸ HP Wolf Pro Security Edition is available preloaded on select SKUs and, depending on the HP product purchased, includes a paid 1-year or 3-year license. The HP Wolf Pro Security Edition software is licensed under the license terms of the HP Wolf Security Software – End-User license Agreement (EULA) that can be found at: https://support.hp.com/us-en/document/ish_3875769-3873014-16 as that EULA is modified by the following: “7. Term. Unless otherwise terminated earlier pursuant to the terms contained in this EULA, the license for the HP Wolf Pro Security Edition (HP Sure Sense Pro and HP Sure Click Pro) is effective upon activation and will continue for either a twelve (12) month or thirty-six (36) month license term (“Initial Term”). At the end of the Initial Term you may either (a) purchase a renewal license for the HP Wolf Pro Security Edition from HP.com, HP Sales or an HP Channel Partner, or (b) continue using the standard versions of HP Sure Click and HP Sure Sense at no additional cost with no future software updates or HP Support.

²⁰ HP Easy Clean requires Windows 10 RS3 and higher and will disable the keyboard, touchscreen, and clickpad only. Ports are not disabled. See user guide for cleaning instructions.

²² HP Wolf Security for Business requires Windows 10 or higher, includes various HP security features and is available on HP Pro, Elite, RPOS and Workstation products. See product details for included security features

System Technical Specifications

System Board

System Board Form Factor	Customized PCB 36.056 x 25.130 mm (14.197 x 9.894 inch)
Processor Socket	Single LGA-1700
CPU Bus Speed	DMI Gen4
Chipset	Intel® PCH W680
Super I/O Controller	Nuvoton SIO21
Memory Expansion Slots	4 DDR5 memory slots
Memory Type Supported	DDR5, UDIMM (Unbuffered), ECC& non-ECC
Memory Modes	Non-Interleaved for single channel. Interleaved when both channels are populated.
Memory Speed Supported	3600MT/s to 4400MT/s DDR5, dependent on memory configuration ¹

¹Though the memory modules can run up to 4800MHz, the current platform will only be able to support the maximum memory speed of 4400MHz.

The system speed will be determined by a number of key factors:		
Module Configuration	Description of configuration	Max Memory Speed (Actual Memory speed is dependent on CPU)
Single DIMM per channel	Configurations that contain only one or two DIMM modules with DIMMs only in the black slots	4400MHz
Two single ranked DIMMs in a channel	Configurations with 3 or 4 single ranked DIMMs (8GB and 16GB) installed in a system	4000MHz
Two dual ranked DIMMs in a channel	Configurations with 3 or 4 dual ranked DIMMs (32GB) installed in a system	3600MHz

Memory Protection	ECC available on data
Maximum Memory	128GB
Memory Configuration (Supported)	8GB, 16GB and 32GB non-ECC, 16GB and 32GB ECC unbuffered DIMMs are supported. ECC and non-ECC memory DIMMs cannot be mixed in the same system
PCI Express Connectors	(1) PCI Express Gen5 slot x16 mechanical/ x16 electrical (full height, full length) (1) PCI Express Gen3 slot x4 mechanical/ x1 electrical (full height, full length, open-ended) (1) PCI Express Gen3 slot x16 mechanical/ x4 electrical (full height, full length) (1) PCI Express Gen3 slot x4 mechanical/ x4 electrical (full height, full length, open-ended) (1) M.2 2280 Storage (PCIe Gen4 x4) (1) M.2 2280 Storage (PCIe Gen4 x4) (1) M.2 2280 Storage (PCIe Gen4 x4) (1) M.2 2230 WLAN (PCIe Gen3 x1+ Intel CNVi)

NOTE: The PCIe Gen5 x16 slot has validated and passed PCI-SIG electrical compliance test ONLY. HP does not guarantee and support any PCIe Gen5 cards available in the open market. May or may not see performance reduced when device MRRS (Maximum Read Request Size) is 512Bytes and above. To reach highest Gen5 PCIe performance, Use the top bin DRAM module (e.g. 4400) to minimize the impact.

Supported Interfaces	SATA	Integrated (4) Serial ATA interfaces (6Gb/s SATA). RAID 0 and 1 supported. Factory integrated RAID for Microsoft Windows only.
	Integrated Graphics	Intel® UHD Graphics 730 (on Core i5-12400/i3-12300/i3-12100) processors); Intel® UHD Graphics 770 (on Core i5/i7/i9 processors);

System Technical Specifications

		Based on Unified Memory Architecture (UMA) -- region of system memory is reserved and dedicated to the graphics display. Support for Microsoft DirectX 12, OpenGL 4.6 and OpenCL 3.0 on Intel® UHD Graphics 730/770; Based on Unified Memory Architecture (UMA) -- region of system memory is reserved and dedicated to the graphics display.
		2 DP 1.4 graphics ports integrated in motherboard; Supports up to three simultaneous displays across DisplayPort*/HDMI*/DVI outputs. Max. resolution supported on onboard DP 1.4/HBR2 ports: 4096x2304 @ 60Hz, 24bpp Max. resolution supported on FlexIO DP 1.4/HBR3 port: 5120x3200 @60Hz, 24bpp
	Network Controller	Integrated Ethernet PHY Connection I219LM. Management capabilities: WOL, PXE 2.1 and AMT 16
	Serial	1 internal header (requires optional Serial Port and PS/2 Combo Kit with PCIe bracket)
	2nd Serial	1 internal header (requires optional Serial Port Adapter Kit)
USB Connector(s)	Front	2 Type-A SuperSpeed USB 10Gbps signaling rate port (charge supports up to 5V/2.1A); 2 Type-A SuperSpeed USB 10Gbps signaling rate port; 1 Type-C® SuperSpeed USB 20Gbps signaling rate port (optional, charge supports up to 5V/3A)
	Rear	3 High-speed USB 480Mbps signaling rate port; 1 Type-A SuperSpeed USB 5Gbps signaling rate port; 2 Type-A SuperSpeed USB 10Gbps signaling rate port; Flex I/O option: 1 SuperSpeed USB Type-C® 10Gbps signaling rate (Power Delivery 15W, Alt Mode DisplayPort); 1 Dual SuperSpeed USB Type-A 5Gbps signaling rate
	Internal	1 High-speed USB 480Mbps signaling rate header for SD Card Reader
HD Integrated Audio	Realtek ALC3205	
Flash ROM	Yes	
CPU Fan Header	Yes	
Memory Fan Header	None	
Chassis Fan Header	1 Rear System Chassis Fan Header, 1 Graphic chassis Fan Header.	
Front PCI Fan Header	None	
Front Control Panel/Speaker Header	Yes	
CMOS Battery Holder - Lithium	Yes	
Integrated Trusted Platform Module	Integrated TPM 2.0 (Infineon SLB9672) Convertible to FIPS 140-2 Certified mode through firmware v15.21	
Power Supply Headers	Yes	
Power Switch, Power LED & Hard Drive LED Header	Yes	
Clear Password Jumper	None	

System Technical Specifications

- Keyboard/Mouse**USB or PS/2 (option)
- Power Supply**700W EPA92, 500W EPA90, 450W EPA90 and 350W EPA92

¹Maximum memory capacities assume 64-bit operating systems, such as Genuine Windows® 10 Professional 64 bit, Red Hat Linux 64-bit. 32-bit Windows Operating Systems support up to 4 GB.

²M.2 storage supports compatible devices up to 80mm

PROCESSORS

Name	Ghz P-Core Base Frequency	Ghz E-Core Base Frequency	Up to X P-Core Max Turbo Freq	Up to x GHz E-Core Max Turbo Frequency	L3 Cache (MB)	P-Cores	E-Cores	Total Cores	Processor Threads	Memory Speed (MT/s) (DDR5) ⁴	ECC Memory Supported ⁵	Integrated Graphics	Featuring Intel® vPro® Technology ³	TDP (W)	Max Turbo Frequency (GHz) ²
Intel 13 th Generation Processors															
Intel® Core™ i9-13900K	3	2.20	5.4	4.3	36	8	16	24	32	5600	Y	Intel® UHD Graphics 770	Y	125	5.8
Intel® Core™ i9-13900	2	1.50	5.2	4.2	36	8	16	24	32	5600	Y	Intel® UHD Graphics 770	Y	65	5.6
Intel® Core™ i7-13700K	3.4	2.50	5.3	4.2	30	8	8	16	24	5600	Y	Intel® UHD Graphics 770	Y	125	5.8
Intel® Core™ i7-13700	2.1	1.50	5.1	4.10	30	8	8	16	24	5600	Y	Intel® UHD Graphics 770	Y	65	5.2
Intel® Core™ i5-13600K	3.5	2.60	5.1	3.9	24	6	8	14	20	5600	Y	Intel® UHD Graphics 770	Y	65	5.1
Intel® Core™ i5-13600	2.7	2.00	5.0	3.7	24	6	8	14	20	4800	Y	Intel® UHD Graphics 770	Y	65	5.0
Intel® Core™ i5-13500	2.5	1.80	4.8	3.5	24	6	8	14	20	4800	Y	Intel® UHD Graphics 770	Y	65	4.8
Intel® Core™ i5-13400	2.5	1.80	4.6	3.3	20	6	4	10	16	4800	N	Intel® UHD Graphics 730	N/A	65	4.6
Intel 12 th Generation Processors															
Intel® Core™ i9-12900K	3.2	2.4	5.1	3.9	30	8	8	16	24	4800	Y	Intel® UHD Graphics 770	Y	125	5.2
Intel® Core™ i9-12900	5	1.8	5.0	3.8	30	8	8	16	24	4800	Y	Intel® UHD Graphics 770	Y	65	5.1
Intel® Core™ i7-12700K	3.6	2.7	4.9	3.8	25	8	4	12	20	4800	Y	Intel® UHD Graphics 770	Y	125	5.0
Intel® Core™ i7-12700	2.1	1.6	4.8	3.6	25	8	4	12	20	4800	Y	Intel® UHD Graphics 770	Y	65	4.9
Intel® Core™ i5-12600K	3.7	2.8	4.9	3.6	20	6	4	10	16	4800	Y	Intel® UHD Graphics 770	Y	125	4.9
Intel® Core™ i5-12600	3.3	N/A	4.8	N/A	18	6	0	6	12	4800	Y	Intel® UHD Graphics 770	Y	65	4.8
Intel® Core™ i5-12500	3	N/A	4.6	N/A	18	6	0	6	12	4800	Y	Intel® UHD Graphics 770	Y	65	4.6
Intel® Core™ i5-12400	2.5	N/A	4.4	N/A	18	6	0	6	12	4800	N	Intel® UHD Graphics 730	N/A	65	4.4
Intel® Core™ i3-12300	3.5	N/A	4.4	N/A	12	4	0	4	8	4800	N	Intel® UHD Graphics 730	N/A	60	4.4

System Technical Specifications

Intel® Core™ i3-12100	3.3	N/A	4.3	N/A	12	4	0	4	8	4800	N	Intel® UHD Graphics 730	N/A	60	4.3
¹ Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel’s numbering, branding and/or naming is not a measurement of higher performance. ² Intel® Optane™ memory system acceleration does not replace or increase the DRAM in your system. ³ Intel Turbo Boost performance varies depending on hardware, software and overall system configuration. See http://www.intel.com/technology/turboboost for more information. ⁴ Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd party software in order to run. Features of vPro® Essentials and Enterprise vary. See http://intel.com/vpro ⁵ Memory will run at 4400 speed (MT/s) in 2DPC within 1DIMM population; memory will run at 4000 speed (MT/s) in 2DPC within 2DIMM of 1 Rank population and memory will run at 3600 speed (MT/s) in 2DPC within 2DIMM of 2 Rank population															

System Technical Specifications

System Configurations							
Example Configuration #1	Processor Info	Core i5-12500,6C 3.0G 65W					
	Memory Info	2 x 8G DDR5 4800 UDIMM NECC					
	Graphics Info	NVIDIA T400 4GB					
	Disks/Optical/Floppy	512GB SSD Z Turbo					
	PSU	350W					
	Other	NA					
Energy Consumption (Watts)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows long Idle (S0)	17.866		17.912		17.804	
	Windows short Idle (S0)	18.926		19.024		18.883	
	Windows Busy Typ (S0)	160.167		155.973		161.10	
	Windows Busy Max (S0)	192.557		187.067		193.063	
	Sleep (S3)	1.367	1.259	1.401	1.367	1.259	1.401
	Off (S5)	0.555	0.552	0.561	0.555	0.552	0.561
	Zero Power Mode (EuP)	0.171		0.173		0.168	
Heat Dissipation (Btu/hr)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows Idle (S0)	60.959		61.116		60.747	
	Windows short Idle (S0)	64.576		64.91		64.429	
	Windows Busy Typ (S0)	546.489		532.181		549.707	
	Windows Busy Max (S0)	657.003		638.271		658.732	
	Sleep (S3)	4.664	4.296	4.78	4.664	4.296	4.78
	Off (S5)	1.894	1.883	1.914	1.894	1.883	1.914
	Zero Power Mode (EuP)	0.583		0.59		0.573	
Example Configuration #2	Processor Info	Core i7-12700,12C 2.1G 65W					
	Memory Info	2 x 16G DDR5 4800 UDIMM NECC					
	Graphics Info	NVIDIA T1000 8GB					
	Disks/Optical/Floppy	512GB SSD Z Turbo					
	PSU	450W					
	Other	NA					
Energy Consumption (Watts)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows long Idle (S0)	20.169		20.335		20.087	
	Windows short Idle (S0)	21.222		21.547		21.195	
	Windows Busy Typ (S0)	119.48		117.953		120.406	
	Windows Busy Max (S0)	157.13		155.03		157.833	
	Sleep (S3)	1.575	1.461	1.582	1.575	1.461	1.582
	Off (S5)	0.944	0.941	0.952	0.944	0.941	0.952
	Zero Power Mode (EuP)	0.204		0.207		0.202	

System Technical Specifications

Heat Dissipation (Btu/hr)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows Idle (S0)	68.817		69.383		68.537	
	Windows short Idle (S0)	72.409		73.518		72.317	
	Windows Busy Typ (S0)	407.666		402.457		410.824	
	Windows Busy Max (S0)	536.128		528.962		538.527	
	Sleep (S3)	5.374	4.985	5.398	5.374	4.985	5.398
	Off (S5)	3.221	3.211	3.248	3.221	3.211	3.248
	Zero Power Mode (EuP)	0.696		0.706		0.689	
Example Configuration #3	Processor Info	Core i9-12900,16C 2.4G 65W					
	Memory Info	2 x 16G DDR5 4800 UDIMM ECC					
	Graphics Info	NVIDIA RTX A2000					
	Disks/Optical/Floppy	512GB SSD Z Turbo					
	PSU	450W					
	Other	NA					
Energy Consumption (Watts)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows long Idle (S0)	22.555		23.324		22.484	
	Windows short Idle (S0)	23.414		24.656		23.397	
	Windows Busy Typ (S0)	159.883		156.853		161.463	
	Windows Busy Max (S0)	189.99		185.89		190.127	
	Sleep (S3)	1.585	1.492	1.694	1.585	1.492	1.694
	Off (S5)	0.952	0.95	1.083	0.952	0.95	1.083
	Zero Power Mode (EuP)	0.21		0.217		0.198	
Heat Dissipation (Btu/hr)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows Idle (S0)	76.958		79.581		76.715	
	Windows short Idle (S0)	79.889		84.126		79.831	
	Windows Busy Typ (S0)	545.522		535.184		550.913	
	Windows Busy Max (S0)	648.246		634.257		648.712	
	Sleep (S3)	5.408	5.091	5.78	5.408	5.091	5.78
	Off (S5)	3.248	3.241	3.695	3.248	3.241	3.695
	Zero Power Mode (EuP)	0.717		0.74		0.676	

NOTE: The Power Supply Efficiency report may be found at the following links:

<https://www.plugloadsolutions.com/80PlusPowerSuppliesDetail.aspx?id=0&type=2>

System Technical Specifications

Operating Voltage Range	90-269 VAC
Rated Voltage Range	100-240 VAC
Rated Line Frequency	50-60 Hz
Operating Line Frequency Range	47-63 Hz
Rated Input Current	8.2A @ 100-240V
Heat Dissipation	Typical: 1598.101 btu/hr (402.984 kcal/hr) Maximum: 1619.608 btu/hr (408.407 kcal/hr)
ENERGY STAR® certified (Config Dependent)	Yes
CECP Compliant @ 220V	Yes
FEMP Standby Power Compliant	Yes, with Wake-on-LAN disabled: <1W in S4/S5 - --ower Off
Built-in Self Test (BIST) LED	Yes
Surge Tolerant Full Ranging Power Supply (withstands power surges up to 2000V)	Yes
Hood Lock Header	Yes
ErP Lot 6- Tier 1 Compliance @ 230V (<1W in S5 - --ower Off)	Yes
ErP Lot 6- Tier 2 Compliance @ 230V (<0.5W in S5 - --ower Off)	Yes

Declared Noise Emissions (Entry-level, Mid-level, and High-end configurations; tested on floor)			
System Configuration (Mid-level)	Processor Info	Intel® CPU Core i9-12900 16C LGA 2.40G 30 MB 65W ECC (Intel - --lder Lake-S)	
	Memory Info	4* 32GB 4800 SK hy24ynixemory	
	Graphics Info	NVIDIA® RTX A5000	
	Disks/Optical	3*2TB Samsung M.2 SSD; 2*WD 2TB 7200RPM SATA HDD	
	Power Supply	Chicony 700W EPA92	
Declared Noise Emissions		Sound Power (LWAd, bels)	Deskside Sound Pressure (LpAm, decibels)
	Idle	3.59	18.5
	Hard drive Operating (Drive Random Seek)	3.82	20.1
	Hard drive Operating (Active mode)	3.97	23.6
System Configuration (High-end)	Processor Info	Intel® Core i9-12900K 16C 3.20G LGA 30 MB 125W ECC (Intel - --lder Lake-S)	
	Memory Info	4* 32GB 4800 SK hy24ynixemory	
	Graphics Info	NVIDIA® RTX A5000	
	Disks/Optical	3*2TB Samsung M.2 SSD; 2*WD 2TB 7200RPM SATA HDD	
	Power Supply	Chicony 700W EPA92	

System Technical Specifications

Declared Noise Emissions		Sound Power (LWAd, bels)	Deskside Sound Pressure (LpAm, decibels)
	Idle	3.58	18.2
	Hard drive Operating (Drive Random Seek)	3.78	20
	Hard drive Operating (Active mode)	4.05	20.9

Environmental Requirements	Temperature	Operating: 5° to 35° C (40° to 95° F) Non-operating: -40° to 60° C (-40° to 140° F) Maximum rate of change: 10°C/hr
	Humidity	Operating: 10% to 85% RH, non-condensing, 35° C maximum wet bulb Non-operating: 10% to 90% RH, non-condensing, 35° C maximum wet bulb
	Maximum Altitude	Operating (with Rotational Hard Drives): 3,048 m (10,000 feet) Operating (with only Solid-State Drives): 5,000 m (16,404 feet) Non-operating: 12,192 m (40,000 feet) Maximum operating temperature is reduced as altitude increases. See Cooling for details.
	Dynamic	Shock Operating: ½-sine: 40g, 2-3ms (~62 cm/sec) Non-operating: ½-sine: 160 cm/s, 2-3ms (~105g) square: 422 cm/s, 20g
		Vibration Operating random: 0.5g (rms), 5-300 Hz, up to 0.0025g²/Hz Non-operating random: 2.0g (rms), 5-500 Hz, up to 0.0150 g²/Hz
	Cooling	Above 1524 m (5,000 feet) altitude, the maximum operating temperature is reduced by 1° C (1.8° F) for every 305 m (1,000 feet) increase in elevation, up to 3048 m (10,000 feet)
	NOTE:	System enduring or operating beyond the environmental requirement range is not recommended and may compromise system reliability permanently.

System Technical Specifications

Physical Security and Serviceability

Access Panel	Tool-less Includes support information
Optical Drive	Tool-less, except for Screw-In carrier
Hard Drives	Tool-less, except for 2.5" "bay
Expansion Cards	Tool-less
Processor Socket	Tool-less, except for the processor heatsink
Blue User Touch Points	Yes, on tool-less internal chassis mechanisms
Color-coordinated Cables and Connectors	Yes
Memory	Tool-less
System Board	Screw-In
Padlock Support	Yes (optional): Locks side cover and secures chassis from theft 0.22-in diameter padlock loop at rear of system
Cable Lock Support	Yes, Kensington Cable Lock (optional): Locks side cover and secures chassis from theft 3 mm x 7 mm slot at rear of system
Universal Chassis Clamp Lock Support	Yes (optional): Locks side cover and locks cables to chassis. Secures chassis from theft and allows multiple units to be chained together when used with optional cable Threaded feature at rear of system
Solenoid Lock and Hood Sensor	Yes (optional) The Solenoid Hood Lock eliminates the need for a physical key by making the chassis lockable through software and a password. You can also lock and unlock the chassis remotely over the network. The Sensor Kit detects when the access panel has been removed.
Rear Port Control Cover	No
CPUs and Heatsinks	A T-15 Torx or flat blade screwdriver is needed to remove the CPU heatsink before the CPU can be removed. CPU removal is tool-less
Internal Speaker	Yes
Power Supply Fans	70mm x 70mm x 25mm 4-wire PWM (non-serviceable)
Access Panel Key Lock	No
Integrated Chassis Handles	Rear Recessed Handle
Power Supply	Requires T15 Torx or flat blade screwdriver
PCI Card Retention	Yes, rear (all), middle (optional), front (full-length cards with extender)

Service, Support, and Warranty

On-site Warranty and Service¹: Three-years, limited warranty and service offering delivers on-site, next business-day² service for parts and labor and includes free telephone support³ 8am - 7pm. Global coverage² ensures that any product purchased in one country and transferred to another, non-restricted country will remain fully covered under the original warranty and service offering. 24/7 operation will not void the HP warranty. Storage devices are not covered under warranty for 24/7 operation except for Enterprise class HDDs.

NOTE 1: Terms and conditions may vary by country. Certain restrictions and exclusions apply.

NOTE 2: On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.

NOTE 3: Technical telephone support applies only to HP-configured, HP and HP-qualified, third-party hardware and software. Toll-free calling and 24x7 support service may not be available in some countries.

HP Care Pack Services extend service contracts beyond the standard warranties. Service starts from date of hardware purchase. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at:

System Technical Specifications

<http://www.hp.com/go/lookuptool>. Service levels and response times for HP Care Packs may vary depending on your geographic location.

Certification and Compliance

Environmental Sustainability questions concerning:

- Ecolabels (EPEAT, TCO, etc.)
- ENERGY STAR, California Energy Commission (CEC)
- Compliance with Environmental legislation (EU ErP, China CECP, EU RoHS and other countries)
- Supply Chain Social Environmental Responsibility (SER) (conflict minerals; human rights, etc.)
- Product specific environmental features (material content, packaging content, recycled content, etc.)
- China Energy Label (CEL)
-

Please contact sustainability@hp.com

For country specific Regulatory Compliance approval documents or Regulatory and Safety questions concerning:

- Declarations of Conformity (for self-service, go to https://www.hp.com/uk-en/certifications/technical/regulations-certificates.html?jumpid=ex_r135_uk/en/any/corp/hpuk-mu_chev/certificates)
- GS Certificates
- Product Safety Certificates (UL, CB, BIS, etc.)
- EMC Certificates, Declarations of Conformity, or Certificates of Conformity (CE, FCC, ICES, etc.)
- CCC Certificates
- Ergonomics
-

Please contact techregshelp@hp.com

BIOS

BIOS 64-bit Services	BIOS supports 64-bit Operating systems only.
PCI 3.0 Support	Full BIOS support for PCI Express through industry standard interfaces.
ATAPI	ATAPI Removable Media Device BIOS Specification Version 1.0.
BBS	BIOS Boot Specification v1.01.(Not support)
WMI Support	WMI is Microsoft's implementation of Web-Based Enterprise Management (WBEM) for Windows. WMI is fully compliant with the Distributed Management Task Force (DMTF) Common Information Model (CIM) and WBEM specifications.
BIOS Boot Spec 1.01+	Provides more control over how and from what devices the workstation will boot.(Not Support)
BIOS Power On	Users can define a specific date and time for the system to power on.
ROM Based Computer Setup Utility (F10)	Review and customize system configuration settings controlled by the BIOS.
System/Emergency ROM Flash Recovery with Video	Recovers system BIOS in corrupted Flash ROM.
Replicated Setup	Saves BIOS settings to USB flash device in human readable file (HpSetup.txt). BiosConfigurationUtility.exe utility can then replicate these settings on machines being deployed without entering Computer Configuration Utility (F10 Setup).
SMBIOS	System Management BIOS 3.4, for system management information.
Boot Control	Disables the ability to boot from removable media on supported devices.
Memory Change Alert	Alerts management console if memory is removed or changed.
Thermal Alert	Monitors the temperature state within the chassis. Three modes: • NORMAL - normal temperature ranges. • ALERTED - excessive temperatures are detected. Raises a flag so action can be taken to avoid

System Technical Specifications

	shutdown or provide for a smoother system shutdown.
	• SHUTDOWN - excessive temperatures are encountered. Automatically shuts down the computer without warning before hardware component damage occurs.
Remote ROM Flash	Provides secure, fail-safe ROM image management from a central network console.
ACPI (Advanced Configuration and Power Management Interface)	Allows the system to enter and resume from low power modes (sleep states). Enables an operating system to control system power consumption based on the dynamic workload. Makes it possible to place individual cards and peripherals in a low-power or powered-off state without affecting other elements of the system. Supports ACPI 6.0 for full compatibility with 64-bit operating systems.
Ownership Tag	A user-defined string stored in non-volatile memory that is displayed in the BIOS splash screen.
Remote Wakeup/Remote Shutdown	System administrators can power on, restart, and power off a client computer from a remote location.
Instantly Available PC (Suspend to RAM - --CPI sleep state S3)	Allows for very low power consumption with quick resume time.
Remote System Installation via F12 (PXE 2.1) (Remote Boot from Server)	Allows a new or existing system to boot over the network and download software, including the operating system.
ROM revision levels	Reports the system BIOS revision level in Computer Configuration Utility (F10 Setup). Version is available through an industry standard interface (SMBIOS and WMI) so that management SW applications can use and report this information.
System board revision level	Allows management SW to read revision level of the system board. Revision level is digitally encoded into the HW and cannot be modified.
Start-up Diagnostics (Power-on Self-Test)	Assesses system health at boot time with selectable levels of testing.
Auto Setup when new hardware installed	System automatically detects addition of new hardware.
Keyboard-less Operation	The system can be booted without a keyboard.
Localized ROM Setup	Common BIOS image supports System Configuration Utility (F10 Setup) menus in 15 languages with local keyboard mappings.
Asset Tag	The user or MIS to set a unique tag string in non-volatile memory.
Per-slot Control	Allows I/O slot parameters (option ROM enable/disable, bus latency) to be configured individually.
Adaptive Cooling	Control parameters are set according to detected hardware configuration for optimal acoustics.
Pre-boot Diagnostics	(Pre-video) critical errors are reported via beeps and blinks on the power LED.
UEFI Specification	
Revision	2.7
ACPI	Advanced Configuration and Power Management Interface, Version 6.0
ATA (IDE)	AT Attachment 6 with Packet Interface (ATA/ATAPI-6), Revision 3b
CD Boot	"E" Torito" bootable CD-ROM Format Specification Version 1.0
EDD	Enhanced Disk Drive Specification Version 1.1 BIOS Enhanced Disk Drive Specification Version 3.0(Not support)
EHCI	Enhanced Host Controller Interface for Universal Serial Bus, Revision 1.0
PCI	PCI Local Bus Specification, Revision 2.3 PCI Power Management Specification, Revision 1.1 PCI Firmware Specification, Revision 3.0, Draft .7
PCI Express	PCI Express Base Specification, Revision 2.0 PCI Express Base Specification, Revision 3.0 PCI Express Base Specification, Revision 4.0 PCI Express Base Specification, Revision 5.0 Ready
PMM	POST Memory Manager Specification, Version 1.01

System Technical Specifications

SATA	Serial ATA Specification, Revision 1.0a Serial ATA 3 Gb/s: Serial ATA Specification, Revision 2.5 Serial ATA 6 Gb/s: Serial ATA Specification, Revision 3.0
SPD	JEDEC JESD300-5
TPM	Trusted Computing Group TPM Specification Version 2.0 (Infineon SLB 9670). Common Criteria EAL4+ certified. FIPS 140-2 Certification TCG TPM Certified products list: http://www.trustedcomputinggroup.org/certification/tpm-certified-products/
UHCI	Universal Host Controller Interface Design Guide, Revision 1.1
USB	Universal Serial Bus Revision 1.1 Specification Universal Serial Bus Revision 2.0 Specification Universal Serial Bus Revision 3.1 Specification Universal Serial Bus Revision 3.2 Specification
SMBIOS	System Management BIOS Reference Specification, Version 3.4
	External BIOS simulator found at: http://csrsml.itcs.hp.com/

Social and Environmental Responsibility

Eco-Label Certifications & Declarations	This product is low halogen except for HP Z Turbo Quad Pro PCIe TLC SSD, CRU QX 428 & QX448 removable storage frames, ConnectX-6 DX Amphenol 10 & 25 Gb Transceivers, power cords, cables, and peripherals. Service parts obtained after purchase may not be Low Halogen.		
	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks: • IT ECO declaration • US ENERGY STAR® • US Federal Energy Management Program (FEMP) • EPEAT® Gold with Climate+ registered. See www.epeat.net for registration status and tier levels by country • TCO Certified • China Energy Conservation Program (CECP) • China State Environmental Protection Administration (SEPA) • Taiwan Green Mark • Korea Eco-label • Japan PC Green label*		
Sustainable Impact Specifications	• Product Carbon Footprint (hp.com) • Ocean-bound plastic in System FAN, CPU FAN and Speaker • 50% post-consumer recycled plastic • Low halogen • Outside Box and corrugated cushions are 100% sustainably sourced and recyclable • Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable		
System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.		
Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz

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Normal Operation (Sort idle)	34.16 W	34.01 W	34.39 W
Normal Operation (Long idle)	32.77 W	32.74 W	33.15 W
Sleep	2.57 W	2.54 W	2.57 W
Off	0.67 W	0.68 W	0.67 W

NOTE: Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	116.8 BTU/hr	116.3 BTU/hr	117.6 BTU/hr
Normal Operation (Long idle)	112.1 BTU/hr	112 BTU/hr	113.4 BTU/hr
Sleep	8.8 BTU/hr	8.7 BTU/hr	8.8 BTU/hr
Off	2.3 BTU/hr	2.3 BTU/hr	2.3 BTU/hr

***NOTE:** Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Longevity and Upgrading This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the

Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.

- Additional Information**
- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.
 - This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
 - This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
 - This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net
 - Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
 - This product is 94.8% recycle-able when properly disposed of at end of life.

Packaging Materials	External:	PAPER/Corrugated	1214 g
		PAPER/Molded Pulp	890 g
	Internal:	PLASTIC/Polyethylene low density -- 40 g DPE	

The plastic packaging material contains at least 0.0% recycled content.

The corrugated paper packaging materials contains at least 62.5% recycled content.

RoHS Compliance HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam.

System Technical Specifications

We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products.

We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve.

To obtain a copy of the HP RoHS Compliance Statement, see [HP RoHS position statement](#).

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Bis(2-Ethylhexyl) phthalate (DEHP)
- Benzyl butyl phthalate (BBP)
- Dibutyl phthalate (DBP)
- Diisobutyl phthalate (DIBP)
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

Packaging Usage

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.

System Technical Specifications

- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

End-of-life Management and Recycling

HP offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/recyclers>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

HP, Inc. Corporate Environmental Information

For more information about HP's commitment to the environment:

Global Citizenship Report

<http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html>

Eco-label certifications

<http://www8.hp.com/us/en/hp-information/environment/ecolabels.html>

ISO 14001 certificates:

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842>
and

<http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf>

footnotes

- Percentage of ocean-bound plastic contained in each component varies by product
- Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.
- External power supplies, WWAN modules, power cords, cables and peripherals excluded.
- 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers.
- Fiber cushions made from 100% recycled wood fiber and organic materials.

Technical Specifications - Hard Drives

SATA Hard Drives for HP Workstations

500GB SATA 7200 rpm 6Gb/s 3.5" 7DD

Capacity

Protocol

Controller

Height

Width

Interface

Synchronous Transfer Rate (Maximum)

Buffer

Seek Time (typical reads, includes controller overhead, including settling)

Rotational Speed

Logical Blocks

Operating Temperature

500GB

SATA

AHCI

1 in; 2.54 cm

Media Diameter

Physical Size

Serial ATA (6.0Gb/s), NCQ enabled

Up to 600MB/s *

32MB

Single Track

Average

Full Stroke

7,200 rpm

976,773,168

41° to 131° F (5° to 55° C)

3.5 in; 8.9 cm

4 in; 10.17 cm

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

1TB SATA 7200 rpm 6Gb/s 3.5" 7DD

Capacity

Protocol

Controller

Height

Width

Interface

Synchronous Transfer Rate (Maximum)

Buffer

Seek Time (typical reads, includes controller overhead, including settling)

Rotational Speed

Logical Blocks

Operating Temperature

1TB

SATA

AHCI

1 in; 2.54 cm

Media Diameter

Physical Size

Serial ATA (6.0Gb/s), NCQ enabled

Up to 600 MB/s *

64MB

Single Track

Average

Full Stroke

7,200 rpm

1,953,525,168

41° to 131° F (5° to 55° C)

3.5 in; 8.9 cm

4 in; 10.17 cm

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

2TB SATA 7200 rpm 6Gb/s 3.5" 7DD

Capacity

Protocol

Controller

Annualized Failure Rate (based on Rated POH)

Height

Width

2TB

SATA

AHCI

<0.62%

1 in; 2.54 cm

Media Diameter

3.5 in; 8.9 cm

Technical Specifications - Hard Drives

	Physical Size	4 in; 10.17 cm
Interface	Serial ATA (6.0 Gb/s), NCQ Enabled	
Synchronous Transfer Rate (Maximum)	Up to 600MB/s *	
Buffer	64MB	
Seek Time (typical reads, includes controller overhead, including settling)	Single Track	2.0 ms *
	Average	11 ms *
	Full Stroke	21 ms *
Rotational Speed	7,200 rpm	
Logical Blocks	3,907,029,168	
Operating Temperature	41° to 131° F (5° to 55° C)	

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

1TB SATA 7200 rpm 6Gb/s 3.5" "DD (Enterprise Class)	Capacity	1TB
	Height	1 in; 2.54 cm
	Protocol	SATA
	Controller	AHCI
	Reliability	2.0M hours
	Rated Power On Hours	8760/yr
	Annualized Failure Rate (based on Rated POH)	<0.62%
	Width	
	Media Diameter	3.5 in; 8.9 cm
	Physical Size	4 in; 10.17 cm
	Interface	Serial ATA (6.0 Gb/s), NCQ Enabled
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s *
	Buffer	128MB
	Seek Time (typical reads, includes controller overhead, including settling)	Single Track 0.32ms*
		Average 7.45ms*
		Full Stroke 14.2ms*
	Rotational Speed	7,200 rpm
	Operating Temperature	41° to 140° F (5° to 60° C)
Performance	Sequential Read	up to 226MB/s*
	Sequential Write	up to 226MB/s*
Enterprise Class Features High Reliability		

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

2TB SATA 7200 rpm 6Gb/s 3.5" "DD (Enterprise Class)	Capacity	2TB
	Protocol	SATA
	Controller	AHCI
	Reliability (MTBF)	2.0M hours
	Rated Power On Hours	8760/yr

Technical Specifications - Hard Drives

Annualized Failure Rate (based on Rated POH)	<0.62%		
Rated for 24/7/365 Operation			
Physical Size (Height)	1 in; 2.54 cm		
Physical Size (Width)	4 in; 10.17 cm		
Media Diameter	3.5 in; 8.9 cm		
Interface	Serial ATA (6Gb/s), NCQ enabled		
Synchronous Transfer Rate (Maximum)	Up to 600MB/s*		
Buffer	128MB		
Seek Time (typical reads, includes controller overhead, including settling)	Single Track	0.7ms*	
	Average	8.5ms*	
	Full Stroke	15.7ms*	
Rotational Speed	7,200 rpm		
Operating Temperature	41° to 131° F (5° to 55° C)		
Performance	Sequential Read	up to 226MB/s*	
	Sequential Write	up to 226MB/s*	
Enterprise Class Features	High Reliability		

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

4TB SATA 7200 rpm 6Gb/s 3.5" "DD (Enterprise Class)	Capacity	4TB	
	Protocol	SATA	
	Controller	AHCI	
	Reliability	2.0M hours	
	Rated Power On Hours	8760/yr	
	Annualized Failure Rate (based on Rated POH)	<0.62%	
	Rated for 24/7/365 Operation		
	Physical Size (Height)	1 in; 2.54 cm	
	Physical Size (Width)	4 in; 10.17 cm	
	Media Diameter	3.5 in; 8.9 cm	
	Physical Size	4 in; 10.17 cm	
	Interface	Serial ATA (6Gb/s), NCQ enabled	
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s*	
	Buffer	256MB	
	Seek Time (typical reads, includes controller overhead, including settling)	Single Track	0.7ms*
		Average	8.5ms*
		Full Stroke	15.7ms*
	Rotational Speed	7,200 rpm	
	Operating Temperature	41° to 131° F (5° to 55° C)	

Technical Specifications - Hard Drives

	Performance	Sequential Read	up to 226MB/s*
		Sequential Write	up to 226MB/s*
	Enterprise Class Features	High Reliability	
	*Actual performance may vary. NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.		
”	8TB SATA 7200 rpm 6Gb/s 3.5” ”DD (Enterprise Class)	Capacity	8TB
		Protocol	SATA
		Controller	AHCI
		Reliability	2.0M hours
		Width	Media Diameter 3.5 in; 8.9 cm
			Physical Size 4 in; 10.17 cm
		Interface	Serial ATA (6.0Gb/s), NCQ enabled
		Synchronous Transfer Rate (Maximum)	Up to 600MB/s [1]
		Buffer	256MB
		Seek Time (typical reads, includes controller overhead, including settling)	Single Track 0.7ms*
			Average 8.5ms*
			Full Stroke 15.7ms*
		Rotational Speed	7,200 rpm
		Operating Temperature	41° to 140° F (5° to 60° C)
		Performance	Sequential Read up to 226MB/s ¹
			Sequential Write up to 226MB/s ¹
		Enterprise Class Features	High Reliability
	*Actual performance may vary. NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.		
	500GB SATA 7.2K SED 2.5” ”DD	Capacity	500GB
		Protocol	SATA
		Height	0.275 in; 0.7 cm
		Width	Media Diameter 2.5 in; 6.36 cm
			Physical Size 2.75 in; 6.99 cm
		Interface	Serial ATA (6.0Gb/s), NCQ enabled
		Synchronous Transfer Rate (Maximum)	Up to 600MB/s*
		Buffer	64MB
		Seek Time (typical reads, includes controller overhead, including settling)	Single Track 1ms*
			Average 4.2ms*
			Full Stroke 25ms (Typical)*
		Rotational Speed	7,200 rpm
		Operating Temperature	32° to 131° F (0° to 60° C)
		Self-Encrypting Drive Support	Yes

Technical Specifications - Hard Drives

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv PCIe-4X4 512GB TLC PCIe SSD (Z2G9)	Capacity	512GB
	Protocol	PCIe
	Form Factor	M.2 in native Slot on motherboard
	Controller	NVMe
	NAND Type	3D TLC
	Endurance	150TBW (TB Written)
	Reliability (MTBF)	1.5M hours
	Interface	PCI Express 4.0 x4 electrical
	Operating Temperature	32° to 178° F (0° to 81° C)
	Performance	Sequential Read 6400MB/s*
		Sequential Write 3400MB/s*
		Random Read 600K IOPS*
		Random Write 600K IOPS*

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv PCIe-4X4 1TB TLC PCIe SSD (Z2G9)	Capacity	1TB
	Protocol	PCIe
	Form Factor	M.2 in native Slot on motherboard
	Controller	NVMe
	NAND Type	3D TLC
	Endurance	300TBW (TB Written)
	Reliability	1.5M Hours
	Interface	PCI Express 4.0 x4 electrical
	Operating Temperature	32° to 178° F (0° to 81° C)
	Performance	Sequential Read 6500MB/s*
		Sequential Write 5000MB/s*
		Random Read 800K IOPS*
		Random Write 800K IOPS*

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv PCIe-4X4 2TB TLC PCIe SSD (Z2G9)	Capacity	2TB
	Protocol	PCIe
	Form Factor	M.2 in native Slot on motherboard
	Controller	NVMe
	NAND Type	3D TLC
	Endurance	500TBW (TB Written)
	Reliability	1.5M Hours
	Interface	PCI Express 4.0 x4 electrical

Technical Specifications - Hard Drives

Operating Temperature	32° to 178° F (0° to 81° C)
Performance	Sequential Read 6500MB/s*
	Sequential Write 5000MB/s*
	Random Read 800K IOPS*
	Random Write 800K IOPS*

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv PCIe-4X4 4TB TLC PCIe SSD	Capacity	4TB
	Protocol	PCIe
	Form Factor	M.2 in native Slot on motherboard
	Controller	NVMe
	NAND Type	3D TLC
	Endurance	600TBW (TB Written)
	Reliability (MTBF)	1.5M Hours
	Interface	PCI Express 4.0 x4 electrical
	Operating Temperature	32° to 178° F (0° to 81° C)
	Performance	Sequential Read 6500MB/s*
		Sequential Write 5000MB/s*
		Random Read 700K IOPS*
		Random Write 700K IOPS*

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv PCIe Gen4x4 4TB TLC PCIe SED OPAL2	Capacity	4TB
	Protocol	PCIe
	Form Factor	M.2 in native Slot on motherboard
	Controller	NVMe
	NAND Type	3D TLC
	Endurance	600TBW (TB Written)
	Interface	PCI Express 4.0 x4 electrical
	Operating Temperature	32° to 178° F (0° to 81° C)
	Performance	Sequential Read 6500MB/s*
		Sequential Write 5000MB/s*
		Random Read 700K IOPS*
		Random Write 700K IOPS*
	Self-Encrypting Drive Support	OPAL2

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv 512GB	Capacity	512GB
	Protocol	PCIe

Technical Specifications - Hard Drives

TLC PCIe SED OPAL2 (Z2G9)

Form Factor	M.2 in native Slot on motherboard	
Controller	NVMe	
NAND Type	3D TLC	
Endurance	150TBW (TB Written)	
Reliability	1.5M Hours	
Interface	PCI Express 4.0 x4 electrical	
Operating Temperature	32° to 178° F (0° to 81° C)	
Performance	Sequential Read	6400MB/s*
	Sequential Write	3400MB/s*
	Random Read	600K IOPS*
	Random Write	600K IOPS*
Self-Encrypting Drive Support	OPAL2	

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv 1TB TLC PCIe SED OPAL2 (Z2G9)

Capacity	1TB	
Protocol	PCIe	
Form Factor	M.2 in native Slot on motherboard	
Controller	NVMe	
NAND Type	3D TLC	
Endurance	300TBW (TB Written)	
Reliability	1.5M Hours	
Interface	PCI Express 4.0 x4 electrical	
Operating Temperature	32° to 178° F (0° to 81° C)	
Performance	Sequential Read	6500MB/s*
	Sequential Write	5000MB/s*
	Random Read	800K IOPS*
	Random Write	800K IOPS*
Self-Encrypting Drive Support	OPAL2	

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv 2TB TLC PCIe SED OPAL2 (Z2G9)

Capacity	2TB	
Protocol	PCIe	
Form Factor	M.2 in native Slot on motherboard	
Controller	NVMe	
NAND Type	3D TLC	
Endurance	500TBW (TB Written)	
Reliability	1.5M Hours	
Interface	PCI Express 4.0 x4 electrical	
Operating Temperature	32° to 178° F (0° to 81° C)	
Performance	Sequential Read	6500MB/s*

Technical Specifications - Hard Drives

Sequential Write	5000MB/s*
Random Read	800K IOPS*
Random Write	800K IOPS*
Self-Encrypting Drive Support	OPAL2

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

256GB 2280 PCIe-4x4 Value M.2 SSD	Capacity	256GB
	Protocol	PCIe
	Form Factor	M.2 in native Slot on motherboard
	Controller	NVMe
	NAND Type	3D TLC
	Endurance	150TBW (TB Written)
	Reliability	1.5M Hours
	Interface	PCI Express 4.0 x4 electrical
	Operating Temperature	32° to 158° F (0° to 70° C)
	Performance	Sequential Read 3100MB/s* Sequential Write 1400MB/s* Random Read 200K IOPS* Random Write 400K IOPS*

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

512GB 2280 PCIe-4x4 Value M.2 SSD	Capacity	512GB
	Protocol	PCIe
	Form Factor	M.2 in native Slot on motherboard
	Controller	NVMe
	NAND Type	3D TLC
	Endurance	300TBW (TB Written)
	Reliability	1.5M Hours
	Interface	PCI Express 4.0 x4 electrical
	Operating Temperature	32° to 158° F (0° to 70° C)
	Performance	Sequential Read 3400MB/s* Sequential Write 2500MB/s* Random Read 380K IOPS* Random Write 430K IOPS*

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

1TB 2280 PCIe-4x4 Value M.2 SSD	Capacity	1TB
	Protocol	PCIe
	Form Factor	M.2 in native Slot on motherboard
	Controller	NVMe

Technical Specifications - Hard Drives

NAND Type	3D TLC	
Endurance	400TBW (TB Written)	
Reliability	1.5M Hours	
Interface	PCI Express 4.0 x4 electrical	
Operating Temperature	32° to 158° F (0° to 70° C)	
Performance	Sequential Read	3400MB/s*
	Sequential Write	2500MB/s*
	Random Read	500K IOPS*
	Random Write	440K IOPS*

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

Technical Specifications - Graphics

AMD Radeon™ Pro W6600 8GB Graphics	Form Factor	Single slot, full-height, 9.5" length
	Graphics Controller	Navi23 architecture Power: 122 Watts Cooling Solution: Active Fan Heatsink
	Bus Type	PCI Express 4.0 x8
	Memory	8GB GDDR6 Memory Memory Bandwidth: 224 GB/s Memory Interface: 128 bit
	Connectors	4x DisplayPort™ 1.4 with DSC - HDR Ready - Supports Multi-Stream Transport (MST)
	Max simultaneous displays	@ 60Hz with HDR Enabled 4x @ 3840x2160px (4K) 4x @ 5120x2880px (5K) 1x @ 7680x4320px (8K)
	Shading Architecture	DirectX 12 Shader Model 6.5
	Supported Graphics APIs	DirectX®12 Ultimate OpenGL® 4.6 OpenCL™ 2.1 Vulkan™ 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions)
		HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html

AMD Radeon™ Pro W6800 32GB Graphics	Form Factor	Double slot, full-height, 10.5" length
	Graphics Controller	Navi21 architecture Power: 261 Watts Cooling Solution: Active Fan Heatsink
	Bus Type	PCI Express 4.0 x16
	Memory	8GB GDDR6 Memory Memory Bandwidth: 512 GB/s Memory Interface: 256 bit
	Connectors	6x Mini-DisplayPort™ 1.4 with DSC - HDR Ready - Supports Multi-Stream Transport (MST)
	Max simultaneous displays	@ 60Hz with HDR Enabled 6x @ 3840x2160px (4K) 6x @ 5120x2880px (5K) 2x @ 7680x4320px (8K)
	Shading Architecture	DirectX 12 Shader Model 6.5
	Supported Graphics APIs	DirectX®12 Ultimate OpenGL® 4.6 OpenCL™ 2.1 Vulkan™ 1.2

Technical Specifications - Graphics

NVIDIA® T400 4GB Graphics	Form Factor	Single Slot, Low Profile (2.7" H x 6.1" L)
	Graphics Controller	Turing architecture Max Power: 30 Watts Cooling Solution: Active fan heatsink
	Bus Type	PCI Express 3.0 x16
	Memory	4GB GDDR6 Memory Memory Bandwidth: 80 GB/s Memory Interface: 64 bit
	Connectors	3x mDP (Mini DisplayPort™) 1.4 Connectors
	Max simultaneous displays	- 3x 3840 x 2160 @ 120Hz - 3x 5120 x 2880 @ 60Hz - supports Multi-Stream Transport (MST)
	Shading Architecture	DirectX 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions)
		HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html

NVIDIA® T600 4GB Graphics*	Form Factor	Single Slot, Low Profile (2.7" H x 6.1" L)
	Graphics Controller	Turing architecture Max Power: 40 Watts Cooling Solution: Active fan heatsink
	Bus Type	PCI Express 3.0 x16
	Memory	4GB GDDR6 Memory Memory Bandwidth: 160 GB/s Memory Interface: 128 bit
	Connectors	4x mDP (Mini DisplayPort™) 1.4 Connectors
	Max simultaneous displays	- 4x 3840 x 2160 @ 120Hz - 4x 5120 x 2880 @ 60Hz - 2x 7680 x 4320 @ 60Hz - supports Multi-Stream Transport (MST)
	Shading Architecture	DirectX 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions)

Technical Specifications - Graphics

HP qualified drivers may be preloaded or available from the HP support Web site:
<http://welcome.hp.com/country/us/en/support.html>

*May go End of Life in late 2022

AMD® Radeon™ RX 6400 4GB Graphics	Form Factor	Single slot, Low Profile (2.8" H x 6.3" L) Weight: 155g
	Graphics Controller	Radeon™ RX 6400 Max Power: 53W Cooling Solution: Active axial fan Architecture: RDNA™ 2
	Bus Type	PCI Express x4 Gen4
	Memory	Size: 4GB GDDR6 Interface: 64-bit Bandwidth: up to 128 GB/s
	Connectors	DP (DisplayPort™) 1.4 + HDMI 2.1
	Max simultaneous displays	- up to 4x 5120 x 2880 x 24 bpp @ 60Hz
	Shading Architecture	Microsoft DirectX 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL® 4.6 DirectX® 12 Ultimate Vulkan™ 1.1 API support includes: OpenCL™ 2.2
	Available Graphics Drivers	Microsoft Windows 10 64-bit, Windows 11 64-bit HP qualified drivers may be preloaded or the latest prosumer graphics drivers are available from the AMD.com
	Notes	This is a Prosumer or Consumer graphics card, and not a Professional graphics card. As such, it does not have formal professional application validation, but is intended per AMD to function properly for game development, real-time engine, and many prosumer application workloads. Customers using Prosumer or Consumer graphic cards with axial fan cooling solutions are likely to experience higher acoustics in comparison with Professional graphic cards that use blower fan cooling.
NVIDIA® T1000 4GB Graphics	Form Factor	Single Slot, Low Profile (2.7" H x 6.1" L)
	Graphics Controller	Turing architecture Max Power: 50 Watts Cooling Solution: Active fan heatsink
	Bus Type	PCI Express 3.0 x16
	Memory	4GB GDDR6 Memory Memory Bandwidth: 160 GB/s Memory Interface: 128 bit
	Connectors	4x mDP (Mini DisplayPort™) 1.4 Connectors

Technical Specifications - Graphics

Max simultaneous displays	- 4x 3840 x 2160 @ 120Hz - 4x 5120 x 2880 @ 60Hz - 2x 7680 x 4320 @ 60Hz - supports Multi-Stream Transport (MST)
Shading Architecture	DirectX 12 Shader Model 5.1
Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions)

HP qualified drivers may be preloaded or available from the HP support Web site:
<http://welcome.hp.com/country/us/en/support.html>

NVIDIA® T1000 8GB Graphics

Form Factor	Single Slot, Low Profile (2.7" H x 6.1" L)
Graphics Controller	Turing architecture Max Power: 50 Watts Cooling Solution: Active fan heatsink
Bus Type	PCI Express 3.0 x16
Memory	8GB GDDR6 Memory Memory Bandwidth: 160 GB/s Memory Interface: 128 bit
Connectors	4x mDP (Mini DisplayPort™) 1.4 Connectors
Max simultaneous displays	- 4x 3840 x 2160 @ 120Hz - 4x 5120 x 2880 @ 60Hz - 2x 7680 x 4320 @ 60Hz - supports Multi-Stream Transport (MST)
Shading Architecture	DirectX 12 Shader Model 5.1
Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions)

HP qualified drivers may be preloaded or available from the HP support Web site:
<http://welcome.hp.com/country/us/en/support.html>

NVIDIA® RTX™ A2000 12GB Graphics

Form Factor	Low-Profile Double Slot (2.7" H x 6.1" L)
Graphics Controller	Ampere architecture Power: 70 Watts Cooling: Active Fan Heatsink

Technical Specifications - Graphics

Bus Type	PCI Express 4.0 x16
Memory	12GB GDDR6 memory Memory Bandwidth: 288 GB/s Memory Interface: 192 bit Support Error-correcting code (ECC)
Connectors	4x mDP (Mini DisplayPort™) 1.4 Connectors
Max simultaneous displays	4x 4096 x 2160 @ 120 Hz, 4x 5120 x 2880 @ 60 Hz 2x 7680 x 4320 @ 60 Hz
Shading Architecture	Shader Model 6.5
Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions)

HP qualified drivers may be preloaded or available from the HP support Web site:
<http://welcome.hp.com/country/us/en/support.html>

NVIDIA® RTX™ A4000 16GB Graphics

Form Factor	Full Height Single Slot (9.5" Length)
Graphics Controller	Ampere architecture Power: 140 Watts Cooling: Active Fan Heatsink
Bus Type	PCI Express 4.0 x16
Memory	16GB GDDR6 memory Memory Bandwidth: 448 GB/s Memory Interface: 256 bit Support Error-correcting code (ECC)
Connectors	4x DP 1.4 Connectors
Max simultaneous displays	4x 4096 x 2160 @ 120 Hz, 4x 5120 x 2880 @ 60 Hz, 2x 7680 x 4320 @ 60 Hz
Shading Architecture	Shader Model 6.5
Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions)

HP qualified drivers may be preloaded or available from the HP support Web site:
<http://welcome.hp.com/country/us/en/support.html>

Technical Specifications - Graphics

NVIDIA® RTX™ A4500 20GB Graphics

Form Factor	Full Height Double Slot (10.5" Length)
Graphics Controller	Ampere architecture Power: 200 Watts Cooling: Active Fan Heatsink
Bus Type	PCI Express 4.0 x16
Memory	20GB GDDR6 memory Memory Bandwidth: 640 GB/s Memory Interface: 320 bit Support Error-correcting code (ECC)
Connectors	4x DP 1.4 Connectors
Max simultaneous displays	4x 4096 x 2160 @ 120 Hz, 4x 5120 x 2880 @ 60 Hz, 2x 7680 x 4320 @ 60 Hz
Shading Architecture	Shader Model 6.5
Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions)

HP qualified drivers may be preloaded or available from the HP support Web site:
<http://welcome.hp.com/country/us/en/support.html>

NVIDIA® RTX™ A5000 24GB Graphics

Form Factor	Full Height Double Slot (10.5" Length)
Graphics Controller	Ampere architecture Power: 230 Watts Cooling: Active Fan Heatsink
Bus Type	PCI Express 4.0 x16
Memory	24GB GDDR6 memory Memory Bandwidth: 768 GB/s Memory Interface: 384 bit Support Error-correcting code (ECC)
Connectors	4x DP 1.4 Connectors
Max simultaneous displays	4x 4096 x 2160 @ 120 Hz, 4x 5120 x 2880 @ 60 Hz, 2x 7680 x 4320 @ 60 Hz
Shading Architecture	Shader Model 6.5
Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions)

Technical Specifications - Graphics

HP qualified drivers may be preloaded or available from the HP support Web site:
<http://welcome.hp.com/country/us/en/support.html>

AMD® Radeon™ Pro W7600 8GB

Form Factor	Full-Height Single Slot (4.38" "eight x 9.5" "ength)
Max Power Consumption	130W
GPU Memory	8GB GDDR6 Memory Bandwidth: 288 GB/s Memory Width: 128-bit
Connectors	4x DP 2.1 Requires : 1x 6-pin PCIe Aux Power
Maximum Resolution	4x @ 3840x2160 (4K) 4x @ 5120x2880 (5K) 2x @ 7680x4320 (8K)
Bus Type	PCI Express 4.0 x8
Available Graphics Drivers	Windows 10 Windows 11

MD® Radeon™ Pro W7500 8GB

Form Factor	Full-Height Single Slot (4.38" "eight x 8.5" "ength)
Max Power Consumption	70W
GPU Memory	8 GB GDDR6 Memory Bandwidth: 173 GB/s Memory Width: 128-bit
Connectors	4x DP 2.1
Maximum Resolution	4x @ 3840x2160 (4K) 4x @ 5120x2880 (5K) 2x @ 7680x4320 (8K)
Bus Type	PCI Express 4.0 x8
Available Graphics Drivers	Windows 10 Windows 11

AMD Radeon™ RX 6700 XT

Form Factor	Dual slot, Full Length (254mm L x 38mm W x 108.65mm H)
Graphics Controller	AMD Radeon™ RX 6700 XT Graphics GPU: 2560 Navi2 Stream Processors Memory: 12GB GDDR6 Power: 230 Watts, Standard graphics 8pin + 6pin auxiliary power Cooling: Active, Dual Axial fan
Bus Type	PCI Express 4.0 x16
Connectors	3DP 1.4 + HDMI 2.1 Outputs
Maximum Resolution	DisplayPort™ 1.4 with DSC: - up to 4x 5210 x 3200 x 24 bpp @ 60Hz, uncompressed - up to 7680 x 4320, compressed Display Outputs 3 DP + 1 HMDI
Shading Architecture	Microsoft DirectX 12 Shader Model 6.1
Supported Graphics APIs	OpenGL 4.6 DirectX 12 Feature Level 12_1 Vulkan 1.1 OpenCL 2.2

Technical Specifications - Graphics

Available Graphics Drivers	Windows 11
	Linux® 64-bit (selected distributions)
	Typically, latest drivers will be available from amd.com

Notes: This is a Prosumer or Consumer graphics card, and not a Professional graphics card. As such, it does not have formal professional application validation, but is intended per AMD to function properly for game development, real-time engine, and many prosumer application workloads. Customers using Prosumer or Consumer graphic cards are likely to experience higher acoustics in comparison with Professional graphic cards. The higher acoustics observed with non-professional graphics is expected, as HP Workstations' designs do not have control in this area.

HP 9.5mm Slim DVD Writer	Description	9.5mm height, tray-load	
	Mounting Orientation	Either horizontal or vertical	
	Interface Type	SATA/ATAPI	
	Dimensions (WxHxD)	128 x 9.5 x 127mm	
	Supported Media Types	DVD+R	
		DVD+RW	
		DVD+R DL	
		DVD-R DL	
		DVD-R	
		DVD-RW	
		CD-R	
		CD-RW	
	Disc Capacity	DVD-ROM	8.5 GB DL or 4.7 GB standard
	Access Times	Full Stroke DVD	< 200 ms (seek)
		Full Stroke CD	< 200 ms (seek)
	Maximum Data Transfer Rates	CD ROM Read	CD-ROM, CD-R Up to 24X
			CD-RW Up to 24X
		DVD ROM Read	DVD+RW Up to 8X DVD-RW Up to 8X DVD+R DL Up to 8X DVD-R DL Up to 8X DVD-ROM Up to 8X DVD-ROM DL Up to 8X DVD+R Up to 8X DVD-R Up to 8X
	Power	Source	SATA DC power receptacle
		DC Power Requirements	5 VDC ± 5%-100 mV ripple p-p
		DC Current	5 VDC -< 800 mA typical, <1600 mA maximum
	Operating Environmental (all conditions non-condensing)	Temperature	41° to 122° F (5° to 50° C)
		Relative Humidity	10% to 80%
		Maximum Wet Bulb Temperature	84° F (29° C)
	Operating Systems Supported	Windows 11, Windows 10, Windows 7 Professional 64-bit, Windows Vista Business 64*, Windows 2000. Linux®.	
	Kit Contents	HP SATA DVD Writer drive, installation guide.	

Technical Specifications - Graphics

Approvals USB-IF, WHQL, Compliant with USB Mass Storage Class Bulk only Transport Specification Rev. 1.0, Compliant Intel Front Panel I/O Connectivity Design Guide V. 1.3, FCC, CE, BSMI, C-Tick, VCCI, MIC, cUL, TUVT

NOTE: Actual speeds may vary. No support for DVD-RAM (DVD Writer). Does not permit copying of commercially available DVD movies or other copyright protected materials. Intended for creation and storage of your original material and other lawful uses. Double Layer discs can store more data than single layer discs. However, double-layer discs burned with this drive may not be compatible with many existing single-layer DVD drives and players.

HP 9.5mm Slim DVD-ROM Drive	Description	9.5mm height, tray-load	
	Mounting Orientation	Either horizontal or vertical	
	Interface Type	SATA / ATAPI	
	Dimensions (WxHxD)	128 x 9.5 x 127mm	
	Disc Capacity	DVD-ROM	Single layer: Up to 4.7 GB Double layer: Up to 8.5 GB
	Access Times	DVD-ROM Single Layer	< 110 ms (typical)
		CD-ROM Mode 1	< 110 ms (typical)
		Full Stroke DVD	< 230 ms (typical)
		Full Stroke CD	< 220 ms (typical)
	Power	Source	SATA DC power receptacle
DC Power Requirements		5 VDC ± 5%-100 mV ripple p-p	
DC Current		5 VDC – <800mA typical, < 1600 mA maximum	
Operating Environmental (all conditions non-condensing)	Temperature	41° to 122° F (5° to 50° C)	
	Relative Humidity	10% to 80%	
	Maximum Wet Bulb Temperature	84° F (29° C)	
Operating Systems Supported	Windows 11, Windows 10, Windows 7 Professional 64-bit,		
	Windows Vista Business 64*, Windows 2000. Linux®.		
Kit Contents	9.5mm Slim DVD-ROM Drive, slim SATA data/power cable, installation guide		
Approvals	USB-IF, WHQL, Compliant with USB Mass Storage Class Bulk only Transport Specification Rev. 1.0, Compliant Intel Front Panel I/O Connectivity Design Guide V. 1.3, FCC, CE, BSMI, C-Tick, VCCI, MIC, cUL, TUVT		
NOTE: Actual speeds may vary. No support for DVD-RAM (DVD Writer). Does not permit copying of commercially available DVD movies or other copyright protected materials. Intended for creation and storage of your original material and other lawful uses. Double Layer discs can store more data than single layer discs. However, double-layer discs burned with this drive may not be compatible with many existing single-layer DVD drives and players.			

Technical Specifications - Networking and Communications

Integrated Intel® I219LM PCIe GbE Controller (Intel® vPro® with Intel® AMT 16.0¹)	Connector	RJ-45
	Cabling	Twisted pair up to 100m
	Controller	Intel® I219LM GbE platform LAN connect networking controller
	Memory	3 KB Tx and 3KB Rx FIFO packet buffer memory
	Data Rates Supported	10/100/1000 Mbps
	Compliance	802.1as/1588, 802.1p, 802.1Q, 802.3, 802.3ab, 802.3az, 802.3i, 802.3u, 802.3z
	Bus Architecture	PCI Express and SMBus
	Data Transfer Mode	PCIe-based interface for active state operation (S0 state) and SMBus for host and management traffic (Sx low power state)
	Power Requirement	Requires 3.3V (integrated regulators for core Vdc)
	Boot ROM Support	Yes
	Network Transfer Mode	Full-duplex; Half-duplex
	Network Transfer Rate	10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps 100BASE-TX (full-duplex) 200 Mbps 1000BASE-T (full-duplex) 2000 Mbps
	Management Capabilities	vPro®, WOL, auto MDI crossover, PXE, Multi-port teaming, RSS, ACPI, Advanced cable diagnostic, loopback modes, AMT 16.0 support, Circuit Breaker, VLAN, Multicast Listener Discovery (MLD)

¹Requires activation and a system with a corporate network connection, an Intel® AMT enabled chipset, and network hardware and software. For notebooks, Intel AMT may be unavailable or limited over a host OS-based VPN, when connecting wirelessly, on battery power, sleeping, hibernating, or powered off. Results dependent upon hardware, setup, and configuration. For more information, visit: <https://www.intel.com/content/www/us/en/architecture-and-technology/intel-active-management-technology.html>

HP 1-Port 1GbE Flex IO NIC	Connector	RJ-45
	Cabling	1GbE over Category 5e (or better) up to 100m
	Controller	Realtek RTL8153
	Data Rates Supported	10/100/1000 Mbps
	Compliance	802.3 (LAN) 802.3u (100BASE-TX) 802.3ab (1000BASE-T) 802.3x (Ethernet Flow Control) 802.1Q (Virtual LAN) 802.3az (Energy Efficient Ethernet)
	Bus Architecture	USB
	Power Requirement	Requires 3.3V (integrated regulators for core Vdc)
	Boot ROM Support	Yes
	Network Transfer Mode	Full-duplex; Half-duplex
	Network Transfer Rate	10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps

Technical Specifications - Networking and Communications

		100BASE-TX (full-duplex) 200 Mbps 1000BASE-T (full-duplex) 2000 Mbps
	Operating Temperature	32° to 131° F (0° to 55° C)
	Dimensions (HxW)	1.5 in x 1.5 in. x 0.75 in (3.81 cm x 3.81 cm x 1.9 cm)
	Operating System Driver Support	Windows 11 64-bit Windows 10 64-bit Linux®
Intel® X550-T2 2-Port 10GbE NIC	Connector	Dual-port RJ-45
	Cabling	10GbE: Cat6a (or better) up to 100m 5GbE and below: Cat5e (or better) up to 100m
	Controller	Intel® Ethernet Controller X550
	Network Transfer Rates Supported	10GbE, 5GbE, 2.5GbE, 1GbE, 100MbE
	Data Path Width	PCIe Gen3x4
	Power Requirement	11.2W (typical) 13.0 (Maximum)
	Operating Temperature	32° to 131° F (0° to 55° C)
	Dimensions (HxW)	5.1 x 2.7 in (without brackets)
	Operating System Driver Support	Windows 11 64-Bit Windows 10 64-bit Linux®
	Kit Contents	• Intel® X550-T2 2-Port 10GbE NIC with standard height bracket attached • Low-profile bracket • Product Literature
Intel® I350-T4 4-Port 1GbE NIC	Connector	4 RJ-45
	Cabling	Cat5e (or better) up to 100m
	Controller	Intel® Ethernet I350 Controller
	Network Transfer Rates Supported	1GbE, 100MbE, 10MbE
	Data Path Width	PCIe Gen2.1x4
	Power Requirement	5W (typical)
	Operating Temperature	32° to 131° F (0° to 55° C)
	Dimensions (HxW)	2.75 x 5.5 inches (without brackets)
	Operating System Driver Support	Windows 11 Windows 10 Linux®
	Kit Contents	• Intel® I350-T4 4-Port 1GbE NIC with standard height bracket attached • Low-profile bracket • Product Literature
HP Flex 1GbE Fiber LC Single Port	Connector	Fiber
	Cabling	1GbE over Category OM1 (or better) up to 100m
	Controller	Microchip LAN7801

Technical Specifications - Networking and Communications

Data Rates Supported	100/1000 Mbps
Compliance	IEEE 802.1p priority encoding/tagging (QoS, CoS) IEEE 802.1q VLAN tagging IEEE 802.3x flow control
Bus Architecture	USB
Power Requirement	Requires 3.3V (integrated regulators for core Vdc)
Boot ROM Support	Yes
Network Transfer Mode	Full-duplex; Half-duplex
Network Transfer Rate	100BASE-X (half-duplex) 100 Mbps 1000BASE-X (half-duplex) 1000 Mbps 1000BASE-X (full-duplex) 2000 Mbps
Operating Temperature	32° to 158° F (0°C to 70°C)
calvin	1.5 in x 1.7 in. x 0.75 in (3.84 cm x 4.3 cm x 1.9 cm)
Operating System Driver Support	Windows 11 64-Bit Windows 10 64-bit Linux®

Intel® I225-T1 1-Port 2.5GbE NIC

Connector	RJ-45
Cabling	Cat5e (or better) up to 85m
Controller	Intel® Ethernet I225 Controller
Network Transfer Rates Supported	2.5GbE, 1GbE, 100MbE, 10MbE
Data Path Width	PCIe Gen3.1x1
Power Requirement	1.9W (typical)
Operating Temperature	32° to 158° F (0°C to 70°C)
Dimensions (HxW)	2.7 in x 2.57 in. (68.7mm x 65.3mm)
Operating System Driver	Windows 11 64-Bit Windows 10 64-bit Linux®
Kit Contents	• Intel® I225-T1 1-Port 2.5GbE NIC with standard height bracket attached • Low-profile bracket • Product Literature

Intel® Wi-Fi 6E* AX211 802.11ax, BT 5.3, M.2 With Internal Antenna

WLAN Standards	802.11abgn+acR2+axR2(Pre-Standard) MIMO 2x2 High performance, low power dual band Pre-Standard-802.11ax R2 2x2, both with 160MHz channel support – Wi-Fi 6E
Antenna	2x2 Dual-Band (internal)
Bluetooth Standards	5.2
Operating Temperature	32° to 176° F (0° to 80° C)
Interface	M.2 CNVio2
Dimensions	M.2 2230
Kit Contents	Not Available

NOTE: The AX211 with internal antenna only support WIFI 6

*Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.

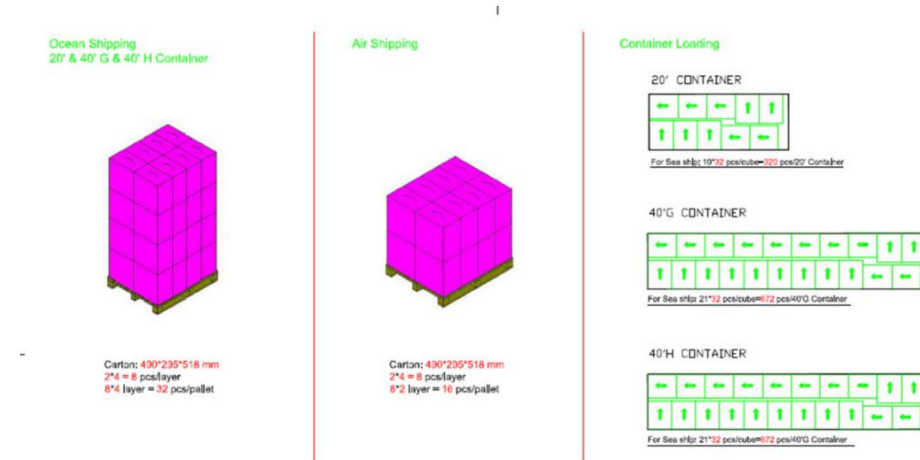
Technical Specifications - Networking and Communications

Intel® Wi-Fi 6E* AX211 802.11ax, BT 5.3, M.2 With External Antenna	WLAN Standards	802.11abgn+acR2+axR2(Pre-Standard) MIMO 2x2 High performance, low power dual band Pre-Standard-802.11ax R2 2x2, both with 160MHz channel support – Wi-Fi 6E
	Antenna	2x2 Dual-Band (External)
	Bluetooth Standards	5.2
	Operating Temperature	32° to 176° F (0° to 80° C)
	Interface	M.2 CNVio2
	Dimensions	M.2 2230
	Kit Contents	ANTENNA, External, Dipole, WLAN, WIFI 6E
NOTE: The AX211 with external antenna support WIFI 6E *Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.		
Intel® Wi-Fi 7 BE200	WLAN Standards	802.11abgn+acR2+axR2+be+dehikrv
	Antenna	2x2 Dual-Band (External)
	Bluetooth Standards	5.4
	Operating Temperature	32° to 176° F (0° to 80° C)
	Interface	M.2: PCIe, USB
	Dimensions	M.2 2230
	Kit Contents	ANTENNA, External, Dipole, WLAN, WIFI 7
NOTE: Not available with 12th Gen Intel ADL processors; Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 7 (802.11BE) functionality requires Windows 11 24H2, select Intel® processor, and a Wi-Fi 7 router, sold separately. Wi-Fi 7 is backwards compatible with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported.		

Palletization

Ocean Shipping uses a 20' x 40' x 40' (490mm x 295mm x 518mm) container with 4 layers; 2x4=8 pieces per layer for a total of 32 pieces per pallet
Air shipping uses 490mm x 295mm x 518mm carton with 2 layers; 2x4=8 pieces per layer for a total of 16 pieces per pallet.

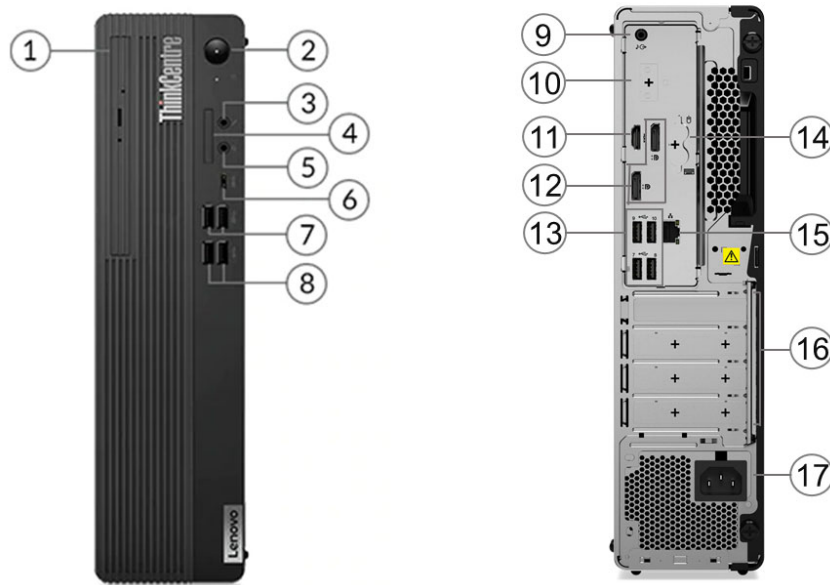
Technical Specifications - Networking and Communications



Date of change:	Version History:		Description of change:
March 8, 2022	From v1 to v2	Changed	Format
March 16, 2022	From v2 to v3	Changed	Social and Environmental Responsibility section
May 6, 2022	From v3 to v4	Changed	Processors, Graphics, Networking and Communications sections
June 1, 2022	From v4 to v5	Changed	Operating Systems and SATA Hard Drives sections
June 15, 2022	From v5 to v6	Changed	Networking and Communications section
July 1, 2022	From v6 to v7	Changed	Graphics section
July 8, 2022	From v7 to v8	Changed	System Board section
August 1, 2022	From v8 to v9	Changed	SATA Hard Drives, Other Hardware sections
August 4, 2022	From v9 to v10	Changed	Format
September 1, 2022	From v10 to v11	Changed	Storage / Hard Drives, Graphics, Optical and Removable Storage Networking and Communications sections
October 1, 2022	From v11 to v12	Changed	Graphics, Networking and Communications sections
November 1, 2022	From v12 to v13	Changed	Graphics Adapters section
February 6, 2023	From v13 to v14	Changed	Processors section
March 1, 2023	From v14 to v15	Changed	Manageability section
March 30, 2023	From v15 to v16	Changed	Processors section
April 25, 2023	From v16 to v17	Changed	Power Supply, Social and Environmental Responsibility sections
May 1, 2023	From v17 to v18	Changed	Other Hardware section
June 1, 2023	From v18 to v19	Changed	Graphics, Social and Environmental Responsibility, Palletization sections
July 1, 2023	From v19 to v20	Changed	Networking and Communications, Other Hardware, HP BIOS sections
July 5, 2023	From v20 to v21	Changed	System Board section
August 1, 2023	From v21 to v22	Changed	Social and Environmental Responsibility section
August 1, 2023	From v22 to v23	Changed	ENVIRONMENTAL DATA section
September 15, 2023	From v23 to v24	Changed	Networking and Communications
October 1, 2023	From v24 to v25	Changed	Graphics, Input Devices sections
November 1, 2023	From v25 to v26	Changed	Graphics, Input Devices sections
December 1, 2023	From v26 to v27	Changed	Graphics, Other Hardware, Social and Environmental Responsibility sections
December 11, 2023	From v27 to v28	Changed	Optical and Removable Storage section
December 21, 2023	From v28 to v29	Changed	Graphics section
February 1, 2024	From v29 to v30	Changed	Social and Environmental Responsibility section
March 1, 2024	From v30 to v31	Changed	Graphics, System Configurations, Declared Noise Emissions and Networking and Communications sections

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OVERVIEW



1. Optical drive *	10. Flex IO *
2. Power button	11. HDMI 2.1 TMDs
3. Microphone (3.5mm)	12. 2x DisplayPort 1.4a
4. Card reader *	13. 4x USB 2.0
5. Headphone / microphone combo jack (3.5mm)	14. 2x PS/2 ports (keyboard / mouse) *
6. USB-C 3.2 Gen 1	15. Ethernet (RJ-45)
7. 2x USB 3.2 Gen 1	16. Optional ports on expansion cards *
8. 2x USB 3.2 Gen 2	17. Power connector
9. Line-out (3.5mm)	

Notes:

- Items with * are only available on selected models
- More ports are available through the optional expansion cards (not shown on the sample product above)

PERFORMANCE

Processor

Processor Family

13th Generation Intel® Core™ i3 / i5 / i7 Processor

Processor**^[1]

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Processor Graphics
Core i3-13100	4 (4 P-core + 0 E-core)	8	P-core 3.4GHz	P-core 4.5GHz	12MB	Intel UHD Graphics 730
Core i5-13400	10 (6 P-core + 4 E-core)	16	P-core 2.5GHz / E-core 1.8GHz	P-core 4.6GHz / E-core 3.3GHz	20MB	Intel UHD Graphics 730
Core i5-13500	14 (6 P-core + 8 E-core)	20	P-core 2.5GHz / E-core 1.8GHz	P-core 4.8GHz / E-core 3.5GHz	24MB	Intel UHD Graphics 770
Core i5-13600	14 (6 P-core + 8 E-core)	20	P-core 2.7GHz / E-core 2.0GHz	P-core 5.0GHz / E-core 3.7GHz	24MB	Intel UHD Graphics 770
Core i7-13700	16 (8 P-core + 8 E-core)	24	P-core 2.1GHz / E-core 1.5GHz	Max Turbo up to 5.2GHz / P-core 5.1GHz / E-core 4.1GHz	30MB	Intel UHD Graphics 770

Notes:

^[1] Intel Max Turbo frequency will vary depending on application workload and the hardware and software configurations, see <http://www.intel.com/technology/turboboost/> for more information.

Operating System

Operating System**

- Ubuntu Linux^[1]
- Windows® 10 IoT Enterprise LTSC 2021^[2]
- Windows 11 DG Windows 10 Pro 64
- Windows 11 Home
- Windows 11 Home Single Language
- Windows 11 Pro
- No operating system

Notes:

^[1] Some features may not be supported on the system with Linux preload, including but not limited to Intel RST RAID, Human Presence Detection, etc.

^[2] Windows 10 IoT Enterprise LTSC 2021 is special bid only.

Graphics

Graphics**

Graphics	Type	Memory	Connector	Max Resolution	Key Features
Intel UHD graphics 730	Integrated	Shared	2x DP 1.4a (HBR2, DSC), 1x HDMI® 2.1 TMDS, 1x Flex IO (VGA / DP 1.2 / HDMI 2.1 TMDS / USB-C®)	4096x2304@60Hz(DP), 4096x2160@60Hz[HDMI / Flex IO(HD MI) / Flex IO(DP)], 3840x2160@60Hz[Flex IO(USB-C)], 2048x1536@50Hz[Flex IO(VGA)]	DirectX® 12
Intel UHD graphics 770	Integrated	Shared	2x DP 1.4a (HBR2, DSC), 1x HDMI 2.1 TMDS, 1x Flex IO (VGA / DP 1.2 / HDMI 2.1 TMDS / USB-C)	4096x2304@60Hz(DP), 4096x2160@60Hz[HDMI / Flex IO(HD MI) / Flex IO(DP)], 3840x2160@60Hz[Flex IO(USB-C)], 2048x1536@50Hz[Flex IO(VGA)]	DirectX 12

Monitor Support

Monitor Support

Supports up to 4 independent displays via onboard ports (2x DP, 1x HDMI, and 1x optional Flex IO)

Chipset

Chipset

Intel Q670 chipset

Memory**Max Memory^[1]**

Up to 128GB DDR4-3200

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type

DDR4-3200

Memory Protection

Non-ECC

Notes:

[1] The max memory is based on the test results with current Lenovo® memory offerings.

Storage**Storage Support^{[1][2]}**

Up to three drives, 1x 2.5"/3.5" HDD + 1x 2.5" HDD + 1x M.2 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 2TB
- M.2 SSD up to 2TB

Storage Type^{*}**

Disk Type	Interface	RPM	Security
2.5" SATA HDD	SATA 6Gb/s	7.2K	-
3.5" SATA HDD	SATA 6Gb/s	7.2K	-
M.2 2280 SSD	PCIe® NVMe®, PCIe 4.0 x4 Performance	-	Opal 2.0
M.2 2280 SSD	PCIe NVMe, PCIe 4.0 x4 Value	-	Opal 2.0

RAID

RAID 0/1 support for HDDs (RAID preset only available via special bid models)

Notes:

[1] The max capacity of each disk type is based on the test results with current Lenovo storage offerings.

[2] 2TB SSD is special bid only.

Removable Storage**Optical^{**}**

- DVD-ROM, SATA connector, slim (9.0mm)
- DVD burner (DVD±RW), SATA connector, slim (9.0mm)
- None

Card Reader

- 3-in-1 card reader (SD, SDHC, SDXC)
- No card reader

Multi-Media**Audio Chip**

High Definition (HD) Audio, Realtek® ALC897Q-CG codec

Speakers

Single speaker, 1W x1

Power Supply**Power Supply^{**}**

Power	Type	Efficiency	Key Features
-------	------	------------	--------------

180W	Fixed	85%	100-240V, 50-60Hz
260W	Fixed	90%	100-240V, 50-60Hz
310W	Fixed	92%	100-240V, 50-60Hz
380W	Fixed	92%	100-240V, 50-60Hz

DESIGN

Input Device

Keyboard**

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard, black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse**

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- No mouse

Mechanical

Form Factor

SFF (8.2L)

Dimensions (WxDxH)^[1]

92.5 x 297.7 x 339.5 mm (3.6 x 11.7 x 13.4 inches)

Packaging Dimensions (WxDxH)

195 x 395 x 530 mm (7.68 x 15.55 x 20.87 inches)

Weight^[2]

Around 5.3 kg (11.7 lbs)

Packaging Weight

Around 7.6 kg (16.76 lbs)

Case Color

Black

Bays

- 1x 2.5" disk bay^[3]
- 1x 3.5" disk bay^[4]
- 1x slim ODD bay

Expansion Slots

- One PCIe 4.0 x16, low-profile, length ≤ 155mm, height ≤ 70mm
- Two PCIe 3.0 x1, low-profile, length ≤ 155mm, height ≤ 70mm
- Two M.2 slots (one for WLAN, one for SSD)

EOU

Toolless cover, disk, optical, extension card assembly / removal

Stand

- Vertical stand
- No stand

Others

- (Optional) Dust filter
- (Optional) Smart Cable (USB-A to USB-C)
- Supports Smart Power On

Notes:

^[1] The system dimensions may vary depending on configurations.

^[2] The system weight is approximate and based on results in Lenovo lab, which varies depending on the source of component, variance of the distribution of each component, and manufacturing process. It may not be the exact weight

for each specific model.

[3] 2.5" HDD tray is optional, or comes with 2.5 HDD.

[4] 3.5" bay supports 2.5" / 3.5" HDD, 3.5" to 2.5 converter comes with 2nd 2.5" HDD.

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ-45, supports Wake-on-LAN

Optional Ethernet

- 2.5 Gigabit Ethernet, Realtek RTL8125BGS, 1x RJ-45, PCIe x1
- No optional Ethernet

WLAN + Bluetooth[®]**

- Realtek Wi-Fi[®] 6 RTL8852BE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card^[1]
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card^[2]
- Intel Wi-Fi 6E AX211, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, Intel vPro[®] technology support, M.2 Card^[3]
- No WLAN and Bluetooth

Notes:

[1], [2], [3] Bluetooth 5.2 is hardware ready but may run at a lower version due to OS limitations.

Ports^[1]

Front Ports

- 1x USB-C 3.2 Gen 1 (15W charging)
- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

1x card reader

Rear Ports^[2]

- 4x USB 2.0
- 1x HDMI 2.1 TMDS
- 2x DisplayPort[™] 1.4a (HBR2, DSC)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports^{***}

- 1x USB-C 3.2 Gen 1 with DisplayPort function and 5V@3A charging (Flex IO)
- 1x HDMI 2.1 TMDS (Flex IO)
- 1x DP 1.2 (Flex IO)
- 1x VGA (Flex IO)
- 2x USB 3.2 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 1x parallel
- 1x serial
- 1x 2nd serial
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 2x PS/2
- None

Notes:

[1] The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.

USB 2.0: 480 Mbit/s;

USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;

USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;

USB4[®] 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

USB4 40Gbps (USB 40Gbps): 40 Gbit/s;

ThinkCentre M7Os Gen 4

Thunderbolt™ 3/4: 40 Gbit/s.

[2] For video ports on discrete graphics, please see graphics section.

Monitor Cable

Monitor Cable***

- HDMI to HDMI cable (1.5m)
- HDMI to VGA dongle
- DP to VGA dongle
- DP to DVI-D dongle
- DP to HDMI dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington® Security Slot™, 3 x 7 mm
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Self-healing BIOS (Level 2)
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

- Intel vPro Enterprise^[1]
- Non-vPro

Notes:

[1] Intel vPro offers a superset of DASH's defined capabilities.

SERVICE

Warranty^[1]

Base Warranty**

- 1-year courier or carry-in service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

Notes:

[1] The warranty upgrades may be bundled with some models, please check the "Included upgrade" column in the specific model's configurations. For more service extensions, please go to <https://smartfind.lenovo.com/>. To learn more details of warranty policy, please access <https://pcsupport.lenovo.com/warranty>.

ENVIRONMENTAL

Operating Environment

Temperature

- Operating: 5°C (41°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: 0 m (0 ft) to 3048 m (10,000 ft)
- Storage: 0 m (0 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications^[1]

Green Certifications

- (Optional) ENERGY STAR® 8.0
- (Optional) EPEAT™ Gold Registered^[2]
- (Optional) EPEAT Silver Registered^[3]
- ErP Lot 3
- RoHS compliant
- TCO Certified 9.0

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration.

[2], [3] EPEAT is registered where applicable, please see <https://www.epeat.net> for registration status by country.

Other Certifications

Other Certifications

- (Optional) TÜV Rheinland® Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation, Contamination by Fluids, Salt Fog)

- Feature with ** means that only one offering listed under the feature is configured on selected models.
- Feature with *** means that one or more offerings listed under the feature could be configured on selected models.
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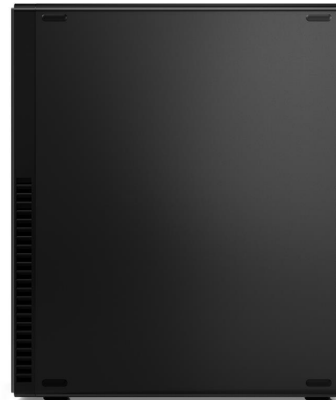
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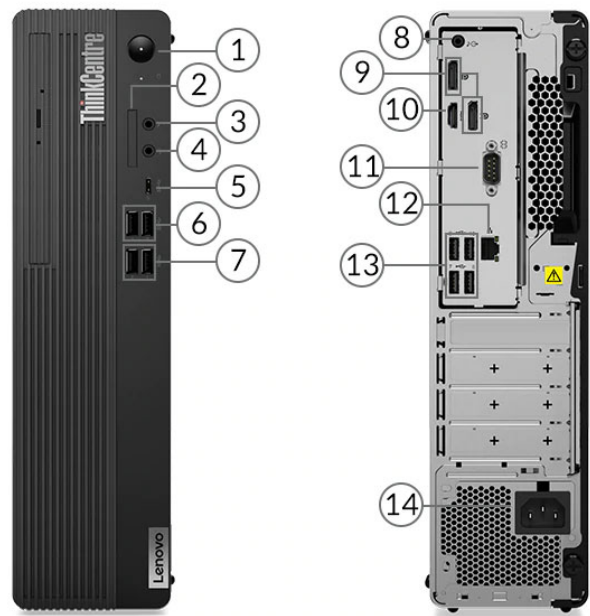


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OVERVIEW



1. Power button	8. Line-out (3.5mm)
2. Card reader	9. 2x DisplayPort 1.4
3. Microphone (3.5mm)	10. HDMI 1.4b
4. Headphone / microphone combo jack (3.5mm)	11. Serial
5. USB-C 3.2 Gen 1	12. Ethernet (RJ-45)
6. 2x USB 3.2 Gen 1	13. 4x USB 2.0 (Note 1)
7. 2x USB 3.2 Gen 2	14. Power connector

- Notes:
- 4 rear USB ports are USB 3.2 Gen 1 for selected Brazil models only
 - More ports are available through the optional expansion cards (not shown on the sample product above)

PERFORMANCE

Processor

Processor Family

AMD Athlon™ or AMD Ryzen™ 3 / 5 / 7 / 9 Processor

Processor**

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics
AMD Athlon Gold PRO 3150G	4	4	3.5GHz	3.9GHz	2MB L2 / 4MB L3	DDR4-2933	AMD Radeon™ Graphics
AMD Athlon Silver 3050GE	2	4	3.4GHz	3.4GHz	1MB L2 / 4MB L3	DDR4-2666	AMD Radeon Graphics
AMD Ryzen 3 3200G	4	4	3.6GHz	4.0GHz	2MB L2 / 4MB L3	DDR4-2933	AMD Radeon Vega 8 Graphics
AMD Ryzen 3 4300G	4	8	3.8GHz	4.0GHz	2MB L2 / 4MB L3	DDR4-3200	AMD Radeon Graphics
AMD Ryzen 3 5300G	4	8	4.0GHz	4.2GHz	2MB L2 / 8MB L3	DDR4-3200	AMD Radeon Graphics
AMD Ryzen 3 PRO 4350G	4	8	3.8GHz	4.0GHz	2MB L2 / 4MB L3	DDR4-3200	AMD Radeon Graphics
AMD Ryzen 3 PRO 5350G	4	8	4.0GHz	4.2GHz	2MB L2 / 8MB L3	DDR4-3200	AMD Radeon Graphics
AMD Ryzen 5 4600G	6	12	3.7GHz	4.2GHz	3MB L2 / 8MB L3	DDR4-3200	AMD Radeon Graphics
AMD Ryzen 5 5600G	6	12	3.9GHz	4.4GHz	3MB L2 / 16MB L3	DDR4-3200	AMD Radeon Graphics
AMD Ryzen 5 PRO 3350G	4	8	3.6GHz	4.0GHz	2MB L2 / 4MB L3	DDR4-2933	AMD Radeon Vega 11 Graphics
AMD Ryzen 5 PRO 3400G	4	8	3.7GHz	4.2GHz	2MB L2 / 4MB L3	DDR4-2933	AMD Radeon Vega 11 Graphics
AMD Ryzen 5 PRO 3600	6	12	3.6GHz	4.2GHz	3MB L2 / 32MB L3	DDR4-3200	-
AMD Ryzen 5 PRO 4650G	6	12	3.7GHz	4.2GHz	3MB L2 / 8MB L3	DDR4-3200	AMD Radeon Graphics
AMD Ryzen 5 PRO 5650G	6	12	3.9GHz	4.4GHz	3MB L2 / 16MB L3	DDR4-3200	AMD Radeon Graphics
AMD Ryzen 7 4700G	8	16	3.6GHz	4.4GHz	4MB L2 / 8MB L3	DDR4-3200	AMD Radeon Graphics
AMD Ryzen 7 5700G	8	16	3.8GHz	4.6GHz	4MB L2 / 16MB L3	DDR4-3200	AMD Radeon Graphics
AMD Ryzen 7 PRO 3700	8	16	3.6GHz	4.4GHz	4MB L2 / 32MB L3	DDR4-3200	-
AMD Ryzen 7 PRO 4750G	8	16	3.6GHz	4.4GHz	4MB L2 / 8MB L3	DDR4-3200	AMD Radeon Graphics
AMD Ryzen 7 PRO 5750G	8	16	3.8GHz	4.6GHz	4MB L2 / 16MB L3	DDR4 3200	AMD Radeon Graphics
AMD Ryzen 9 PRO 3900	12	24	3.1GHz	4.3GHz	6MB L2 / 64MB L3	DDR4-3200	-

Operating System

Operating System**

- Ubuntu Linux^[1]
- Windows® 10 Home 64

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- Windows 10 Home 64 Single Language
- Windows 10 IoT Enterprise
- Windows 10 Pro 64
- Windows 11 DG Windows 10 Pro 64
- Windows 11 Home
- Windows 11 Home Single Language
- Windows 11 Pro
- No operating system

Notes:

[1] Some features may not be supported on the system with Linux preload, including but not limited to Intel® RST RAID, Human Presence Detection, etc.

Graphics

Graphics**[1][2]

Graphics	Type	Memory	Connector	Max Resolution	Key Features
AMD Radeon Graphics	Integrated	Shared	2x DisplayPort™ 1.4, 1x HDMI® 1.4	4096x2160@60Hz(DP), 4096x2160@24Hz(HDMI)	DirectX® 12
AMD Radeon Vega 11 Graphics	Integrated	Shared	2x DisplayPort 1.4, 1x HDMI 1.4	4096x2160@60Hz(DP), 4096x2160@24Hz(HDMI)	DirectX 12
AMD Radeon Vega 8 Graphics	Integrated	Shared	2x DisplayPort 1.4, 1x HDMI 1.4	4096x2160@60Hz(DP), 4096x2160@24Hz(HDMI)	DirectX 12
AMD Radeon 520	Discrete	2GB GDDR5	2x DP 1.2	4096x2160@60Hz(DP)	DirectX 12
AMD Radeon RX 550X	Discrete	4GB GDDR5	1x HDMI 2.0, 1x DP 1.4	4096x2160@60Hz(HDMI), 3840x2160@60Hz(DP)	DirectX 12, OpenGL 4.5
AMD Radeon RX 6400	Discrete	4GB GDDR6	1x HDMI 2.1 FRL, 1x DP 1.4a	7680x4320@60Hz(HDMI), 7680x4320@60Hz(DP)	DirectX 12, OpenGL 4.6

Notes:

[1] The information of integrated graphics are not applicable for the models with processor which has no integrated graphics inside (for the details, please refer to processor section).

[2] AMD Radeon 520 is not available for MT 11R7 / 11R8 / 11R9 / 11RA.

Monitor Support

Monitor Support

Supports up to 3 independent displays via onboard ports (HDMI and 2x DisplayPort), more displays support via discrete graphics

Chipset

Chipset

AMD PRO 565 chipset

Memory^[1]

Max Memory^[2]

Up to 128GB DDR4-3200

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type**[3]

- DDR4-1866
- DDR4-2133
- DDR4-2400
- DDR4-2666
- DDR4-3200

Notes:

- [1] Recommend to choose the models with more than 4GB for better performance and experience.
- [2] The max memory is based on the test results with current Lenovo® memory offerings.
- [3] Installed memory is actually 3200MHz, but may run at 1866MHz, 2133MHz, 2400MHz or 2666MHz depending on the memory support capability of processor.

Storage

Storage Support^[1]

Up to three drives, 1x 2.5"/3.5" HDD + 1x 2.5" HDD + 1x M.2 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 2TB
- M.2 SSD up to 2TB

Storage Type^{***}

Disk Type	Interface	RPM	Security
2.5" SATA HDD	SATA 6Gb/s	7.2K	-
3.5" SATA HDD	SATA 6Gb/s	7.2K	-
M.2 2242 SSD	PCIe® NVMe®, PCIe 3.0 x2	-	-
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x4	-	-
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
M.2 2280 SSD	PCIe NVMe, PCIe 4.0 x4 Value ^[2]	-	Opal 2.0
M.2 2280 SSD ^[3]	PCIe NVMe, PCIe x4	-	Opal 2.0

RAID

RAID 0/1 support for HDDs (RAID preset only available via special bid models)

Notes:

- [1] The max capacity of each disk type is based on the test results with current Lenovo storage offerings.
- [2] M.2 PCIe Gen 4 SSD in the M.2 PCIe Gen 3 slot is downgraded to PCIe Gen 3 performance.
- [3] PCIe x4 SSD may be PCIe 3.0 x4 or PCIe 4.0 x4 as substitution. M.2 PCIe Gen 4 SSD in the M.2 PCIe Gen 3 slot is downgraded to PCIe Gen 3 performance.

Removable Storage

Optical^{**}

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

- 3-in-1 card reader (SD, SDHC, SDXC)
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC623-CG codec

Speakers

- No speakers
- Single speaker, 1W x1

Power Supply

Power Supply^{**}

Power	Type	Efficiency	Key Features
180W	Fixed	85%	-
260W	Fixed	85%	100-240V, 50-60Hz
310W	Fixed	92%	100-240V, 50-60Hz

DESIGN

Input Device

Keyboard**

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse**

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black (EOL on Jan, 2023)
- No mouse

Mechanical

Form Factor

SFF (8.2L)

Dimensions (WxDxH)^[1]

92.5 x 297.7 x 339.5 mm (3.6 x 11.7 x 13.4 inches)

Weight^[2]

Around 5.3 kg (11.7 lbs)

Case Color

Black

Bays

- 1x 2.5" disk bay (bay comes with disk)
- 1x 3.5" disk bay
- 1x slim ODD bay

Expansion Slots

- One PCIe 3.0 x16, low-profile (length < 155mm, height < 68mm)
- One PCIe 3.0 x1, low-profile (length < 155mm, height < 68mm)
- Two M.2 slots (one for WLAN, one for SSD)
- Two dummy slots, only brackets for optional port extension

EOU

EOU design for chassis open, M.2 SSD, HDD, ODD, memory, and PCIe extension card

Stand

- Vertical stand
- No stand

Others

- (Optional) Dust filter
- Supports Smart Power On

Notes:

[1] The system dimensions may vary depending on configurations.

[2] The system weight is approximate and based on results in Lenovo lab, which varies depending on the source of component, variance of the distribution of each component, and manufacturing process. It may not be the exact weight for each specific model.

CONNECTIVITY

Network^[1]

Onboard Ethernet**

- Gigabit Ethernet, Realtek RTL8111EPV, 1x RJ-45, supports Wake-on-LAN
- Gigabit Ethernet, Realtek RTL8111HN, 1x RJ-45, supports Wake-on-LAN

Optional Ethernet**^[2]

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Bitland RTL8111FP, 1x RJ-45, PCIe x1

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- No optional Ethernet

WLAN + Bluetooth^{®**}

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi[®] + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- MediaTek Wi-Fi 6 MT7921, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card^[3]
- Realtek Wi-Fi 6 RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card^[4]
- Intel Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 card^[5]
- No WLAN and Bluetooth

Notes:

^[1] This system does not support Power Over Ethernet (PoE). If the system is used in a PoE environment, then a Network Isolator is required to prevent possible damage to the system, PoE equipment, or both.

^[2] RTL8111FP is not available for AP countries.

^[3], ^[4], ^[5] Bluetooth 5.2 is hardware ready but may run at a lower version due to OS limitations.

Ports^[1]

Front Ports

- 1x USB-C[®] 3.2 Gen 1
- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 4x USB 2.0
- 1x HDMI 1.4b
- 2x DisplayPort 1.4
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)
- 1x serial (9-pin)

Optional Rear Ports^{***}

- 2x USB-C 3.2 Gen 2 (support data transfer, via 2-port USB-C expansion card, PCIe x4)
- 2x USB 3.2 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 2x USB 2.0 (via 2-port adapter)
- 1x parallel
- 1x serial
- 4x serial (via 4-port serial expansion card, PCIe x1)

Notes:

^[1] The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.

USB 2.0: 480 Mbit/s;

USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;

USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;

USB4[®] 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

USB4 40Gbps (USB 40Gbps): 40 Gbit/s;

Thunderbolt[™] 3/4: 40 Gbit/s.

^[2] For video ports on discrete graphics, please see graphics section.

Monitor Cable

Monitor Cable^{***}

- HDMI to HDMI cable (1.5m)
- HDMI to VGA dongle
- DP to VGA dongle
- DP to VGA cable (1.5M)
- DP to dual DP dongle
- DP to DVI-D dongle

- DP to HDMI dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington® Security Slot™, 3 x 7 mm
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse (EOL on Jan, 2023)
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management^[1]

- DASH 1.2
- Non-DASH

Notes:

[1] DASH 1.2 is an optional feature for the selected MTs, MT 11W1 / 11W2 / 11W3 / 11W4 do not support DASH.

SERVICE

Warranty^[1]

Base Warranty**

- 1-year courier or carry-in service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

Notes:

[1] The warranty upgrades may be bundled with some models, please check the "Included upgrade" column in the specific model's configurations. For more service extensions, please go to <https://smartfind.lenovo.com/>. To learn more details of warranty policy, please access <https://pcsupport.lenovo.com/warranty>.

ENVIRONMENTAL

Operating Environment

Temperature

- Operating: 5°C (41°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: 0 m (0 ft) to 3048 m (10,000 ft)
- Storage: 0 m (0 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications^[1]

Green Certifications^[2]

- (Optional) ENERGY STAR® 8.0
- (Optional) EPEAT™ Silver Registered^[3]
- (Optional) EPEAT Gold Registered^[4]
- ErP Lot 3
- RoHS compliant
- TCO Certified 8.0

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration.

[2] ENERGY STAR 8.0 and EPEAT are only available for selected MTs.

[3], [4] EPEAT is registered where applicable, please see epeat.net for registration status by country.

Other Certifications

Other Certifications

- (Optional) TÜV Rheinland® Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)

- Feature with ** means that only one offering listed under the feature is configured on selected models.
- Feature with *** means that one or more offerings listed under the feature could be configured on selected models.
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AMD



AMD



AMD



AMD

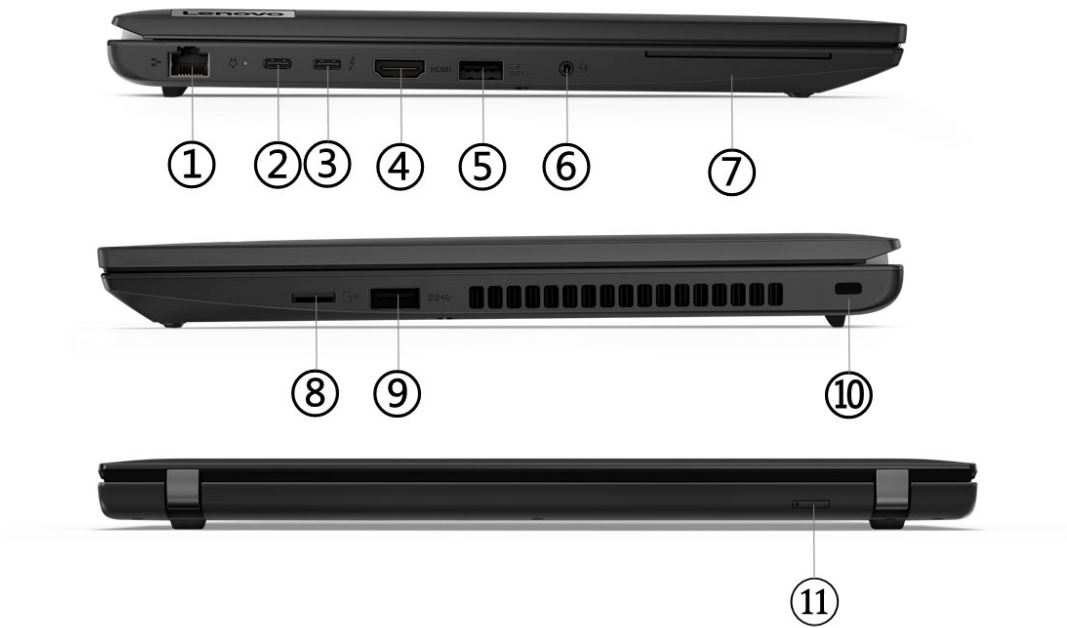


AMD



AMD

OVERVIEW



1. Ethernet (RJ-45)	7. Smart card reader *
2. USB-C 3.2 Gen 2	8. microSD card reader
3. Thunderbolt 4	9. USB 3.2 Gen 1
4. HDMI	10. Kensington Nano Security Slot
5. USB 3.2 Gen 1 (Always On)	11. Nano-SIM card slot *
6. Headphone / microphone combo jack (3.5mm)	

Notes:

- Items with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® U-series or 13th Generation Intel U or P Series Core™ i3 / i5 / i7 Processor

Processor**^[1]

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Processor Graphics
U300	5 (1 P-core + 4 E-core)	6	P-core 1.2GHz / E-core 0.9GHz	P-core 4.4GHz / E-core 3.3GHz	8MB	Intel UHD Graphics
Core i3-1315U	6 (2 P-core + 4 E-core)	8	P-core 1.2GHz / E-core 0.9GHz	P-core 4.5GHz / E-core 3.3GHz	10MB	Intel UHD Graphics
Core i5-1335U	10 (2 P-core + 8 E-core)	12	P-core 1.3GHz / E-core 0.9GHz	P-core 4.6GHz / E-core 3.4GHz	12MB	Intel Iris® Xe Graphics ^[2]
Core i5-1340P	12 (4 P-core + 8 E-core)	16	P-core 1.9GHz / E-core 1.4GHz	P-core 4.6GHz / E-core 3.4GHz	12MB	Intel Iris Xe Graphics ^[3]
Core i5-1345U	10 (2 P-core + 8 E-core)	12	P-core 1.6GHz / E-core 1.2GHz	P-core 4.7GHz / E-core 3.5GHz	12MB	Intel Iris Xe Graphics ^[4]
Core i5-1350P	12 (4 P-core + 8 E-core)	16	P-core 1.9GHz / E-core 1.4GHz	P-core 4.7GHz / E-core 3.5GHz	12MB	Intel Iris Xe Graphics ^[5]
Core i7-1355U	10 (2 P-core + 8 E-core)	12	P-core 1.7GHz / E-core 1.2GHz	P-core 5.0GHz / E-core 3.7GHz	12MB	Intel Iris Xe Graphics ^[6]
Core i7-1360P	12 (4 P-core + 8 E-core)	16	P-core 2.2GHz / E-core 1.6GHz	P-core 5.0GHz / E-core 3.7GHz	18MB	Intel Iris Xe Graphics ^[7]
Core i7-1365U	10 (2 P-core + 8 E-core)	12	P-core 1.8GHz / E-core 1.3GHz	P-core 5.2GHz / E-core 3.9GHz	12MB	Intel Iris Xe Graphics ^[8]

Notes:

^[1] Intel P series processors are for special bid only.

^{[2], [3], [4], [5], [6], [7], [8]} Intel Iris Xe Graphics capability requires system to be configured with dual-channel memory. On the system with single-channel memory, Intel Iris Xe Graphics will function as Intel UHD Graphics.

Operating System

Operating System**

- Windows® 11 Pro
- Windows 11 Home
- Windows 11 Home Single Language
- Windows 11 DG Windows 10 Pro 64^[1]
- Linux^[2]
- Ubuntu Linux^[3]
- No operating system

Notes:

^[1] Windows 11 DG Windows 10 Pro 64 is for special bid only.

^{[2], [3]} Some features may not be supported on the system with Linux preload, including but not limited to Intel RST RAID, MIPI computer vision camera, WWAN, Human Presence Detection, etc.

Graphics

Graphics**

Graphics	Type	Memory	TGP	Key Features
Intel UHD Graphics	Integrated	Shared	Share CPU TDP	DirectX® 12.1
Intel Iris Xe Graphics ^[1]	Integrated	Shared	Share CPU TDP	DirectX 12.1
NVIDIA® GeForce MX550 ^[2]	Discrete	2GB GDDR6	-	DirectX 12

Notes:

[1] Intel Iris Xe Graphics capability requires system to be configured with dual-channel memory. On the system with single-channel memory, Intel Iris Xe Graphics will function as Intel UHD Graphics.

[2] NVIDIA GeForce MX550 is NOT available in EMEA.

Monitor Support

Monitor Support

Supports up to 4 independent displays (native display and 3 external monitors via HDMI®, USB-C® and Thunderbolt™)

- HDMI supports up to 3840x2160@60Hz
- USB-C supports up to 5120x3200@60Hz
- Thunderbolt supports up to 5120x3200@60Hz

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 64GB DDR4-3200

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-3200

Notes:

[1] The max memory is based on the test results with current Lenovo® memory offerings.

Storage

Storage Support^[1]

One drive, up to 2TB M.2 2242 SSD

Storage Slot

One M.2 2242 PCIe® 4.0 x4 slot

Storage Type

Disk Type	Interface	Offering	Security
M.2 2242 SSD	PCIe NVMe®, PCIe 4.0 x4	256GB / 512GB / 1TB / 2TB	Opal 2.0

Notes:

[1] The storage capacity supported is based on the test results with current Lenovo storage offerings.

Removable Storage

Card Reader

microSD card reader

Multi-Media

Audio Chip

- Non-vPro® models: High Definition (HD) Audio, Realtek® ALC3287 codec
- vPro models: High Definition (HD) Audio, Senary SN6147 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

Dual-microphone array, far-field, Dolby Voice

Camera**

- FHD 1080p + IR hybrid, with privacy shutter, fixed focus
- FHD 1080p, with privacy shutter, fixed focus

- HD 720p, with privacy shutter, fixed focus

Battery

Battery**

- Integrated Li-Polymer 46.5Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W or 100W AC adapter
- Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W or 100W AC adapter
- Integrated Li-Polymer 63Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 100W AC adapter

Battery Life^[1]

Configuration 1 (max battery life)

MobileMark® 25: up to 11.5 hr @250nits

JEITA 2.0: up to 18.42 hr @150nits

Local video playback: up to 19.5 hr @150nits

Alternate configuration 2

MobileMark 25: up to 8.93 hr @250nits

JEITA 2.0: up to 14.92 hr @150nits

Local video playback: up to 14.54 hr @150nits

Alternate configuration 3

MobileMark 25: up to 7.35 hr @250nits

JEITA 2.0: up to 14.57 hr @150nits

Local video playback: up to 14.25 hr @150nits

Notes:

^[1] Configuration 1 (max battery life): FHD (touch), Intel i5-1340P, 8GB DDR4, Win 11, 63Wh battery, best power efficiency power mode

Alternate configuration 2: FHD (non-touch), Intel i5-1350P, 16GB DDR4, Win 11, 57Wh battery, best power efficiency power mode

Alternate configuration 3: FHD (touch), Intel i7-1360P, 64GB DDR4, NVIDIA Geforce MX550, Win 11, 63Wh battery, best power efficiency power mode

All battery life claims are approximate maximum and based on results using [MobileMark 25](#), JEITA 2.0, continuous 1080p local video playback (using default Media Player in Fullscreen mode with 150nits brightness and default volume level), or Google Power Load Test (PLT) battery-life benchmark tests.

Actual battery life will vary depending on many factors such as product configuration, software, wireless functionality, power management settings, and screen brightness.

The maximum capacity of the battery will decrease with time, ambient temperature and use.

Refer to [Microsoft® link](#) for more information about the Windows Performance power slider.

Power Adapter

Power Adapter**^[1]

- 45W USB-C (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 45W USB-C (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C slim (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C slim (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 100W USB-C slim (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- No power adapter^[2]

Notes:

^[1] AC adapter offerings depend on the country.

^[2] No power adapter is for special bid only.

DESIGN

Display

Display**^[1]

Size	Resolution	Touch	Type	Brightness	Surface	Aspect Ratio	Contrast Ratio	Color Gamut	Refresh Rate	Viewing Angle (L/R/U/D)
------	------------	-------	------	------------	---------	--------------	----------------	-------------	--------------	-------------------------

15.6"	FHD (1920x1080)	None	IPS	250nits	Anti-glare	16:9	800:1	45% NTSC	60Hz	85°/85°/85°/85°
15.6"	FHD (1920x1080)	Multi-touch	IPS	300nits	Anti-glare	16:9	800:1	45% NTSC	60Hz	85°/85°/85°/85°

Touchscreen

- On-cell multi-touch, supports 10-point touch
- Non-touch

Notes:

[1] IPS (in-plane switching) technology may refer to IPS, PLS, ADS, AHVA, AAS.

Input Device**Keyboard**

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- Non-backlight

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad, 56 x 115 mm (2.24 x 4.53 inches)

Mechanical**Dimensions (WxDxH)^[1]**

360.2 x 237 x 19.93 mm (14.18 x 9.33 x 0.78 inches)

Weight^[2]

Starting at 1.77 kg (3.91 lbs)

Case Color

Thunder black

Case Material

PC-ABS (top), PC-ABS (bottom)

Notes:

[1] The system dimensions may vary depending on configurations.

[2] The system weight is approximate and based on results in Lenovo lab, which varies depending on the source of component, variance of the distribution of each component, and manufacturing process. It may not be the exact weight for each specific model.

CONNECTIVITY**Network****Ethernet****

- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), 1x RJ-45, supports Wake-on-LAN
- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), 1x RJ-45, supports Wake-on-LAN

WLAN + Bluetooth®**

- Intel Wi-Fi® 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card^[1]
- Intel Wi-Fi 6E AX211, 802.11ax 2x2 Wi-Fi + Bluetooth 5.3, M.2 Card^[2]
- No WLAN and Bluetooth

WWAN**

- Wireless WAN upgradable to 4G (with antenna ready)
- Quectel EM05-G, 4G LTE CAT4, M.2 card, with embedded eSIM functionality
- Fibocom L860-GL-16, 4G LTE CAT16, M.2 card, with embedded eSIM functionality
- No support

SIM Card

No physical SIM card inbox

NFC

ThinkPad L15 Gen 4 (Intel)

- Near Field Communication
- No support

Notes:

[1] Wi-Fi 6 full features might be limited by country-level restrictions.

Bluetooth 5.2 is hardware ready but may run at a lower version due to OS limitations.

[2] Wi-Fi 6E full features might be limited by country-level restrictions.

Wi-Fi 6E is only enabled on Windows 11 and operates as Wi-Fi 6 with Windows 10.

6GHz Wi-Fi 6E operation is dependent on the support of the operating system, routers/APs/Gateways that support Wi-Fi 6E, and the regional regulatory certifications & spectrum allocation.

Bluetooth 5.3 operation requires Windows 11. For more information please see [General Bluetooth Support Information on Microsoft](#).

Ports^[1]

Standard Ports

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x Thunderbolt 4 / USB4® 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort 1.4)
- 1x HDMI 2.1, up to 4K/60Hz
- 1x Headphone / microphone combo jack (3.5mm)
- 1x Ethernet (RJ-45)
- 1x microSD card reader

Optional Ports^{***}

- 1x Smart card reader
- 1x Nano-SIM card slot (WWAN support models)

Notes:

[1] The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.

USB 2.0: 480 Mbit/s;

USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;

USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;

USB4 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

USB4 40Gbps (USB 40Gbps): 40 Gbit/s;

Thunderbolt 3/4: 40 Gbit/s.

Docking

Docking

Various docking solutions supported via Thunderbolt or USB-C.

For more compatible docking solutions, please visit [Docking for ThinkPad® L15 Gen 4 \(Intel\)](#)

Monitor Cable

Monitor Cable^{***}

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to VGA Adapter
- Lenovo USB-C to DisplayPort Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified, FIPS 140-2 certified

Physical Locks

Kensington® Nano Security Slot™, 2.5 x 6 mm

Smart Card Reader

- Smart card reader

ThinkPad L15 Gen 4 (Intel)

- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader integrated in power button, match-on-chip
- No fingerprint reader

BIOS Security

- Power-on password
- Supervisor password
- NVMe password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management**

- Intel vPro Enterprise^[1]
- Intel vPro Essentials^[2]
- Non-vPro

Notes:

[1], [2] Intel vPro offers a superset of DASH's defined capabilities.

SERVICE

Warranty

Base Warranty**

- 1-year courier or carry-in service
- 1-year courier or carry-in with 2-year system board service (Korea only)
- 1-year limited onsite service
- 3-year (1-yr battery) courier or carry-in service
- 3-year (1-yr battery) limited onsite service

ENVIRONMENTAL

Sustainability

Material

30% PCC recycled plastic used in top cover frame material
50% PCC recycled plastic used in speaker enclosure
90% PCC recycled plastic used in the battery pack
90% PCC recycled plastic used in standard adapter
45% PCC recycled plastic used in SIM tray
Low-temperature solder
90% recycled and/or sustainable packaging

Operating Environment

Temperature^[1]

- Operating: 5°C (41°F) to 35°C (95°F)
- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

[1] When you charge the battery, its temperature must be no lower than 10°C (50°F).

ACCESSORIES

Bundled Accessories

Bundled Accessories^[1]

None

Notes:

[1] For more compatible accessory solutions, please visit [Accessories for ThinkPad L15 Gen 4 \(Intel\)](#)

CERTIFICATIONS

Green Certifications^[1]

Green Certifications^[2]

- ENERGY STAR® 8.0
- EPEAT™ Gold Registered^[3]
- ErP Lot 6
- ErP Lot 26
- RoHS compliant
- TCO Certified 9.0

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration.

[2] EPEAT registration and ENERGY STAR certification are dependent on system OS. Please visit [epeat.net](#) and [energystar.gov](#) for more information.

[3] EPEAT is registered where applicable, please see [epeat.net](#) for registration status by country.

Other Certifications

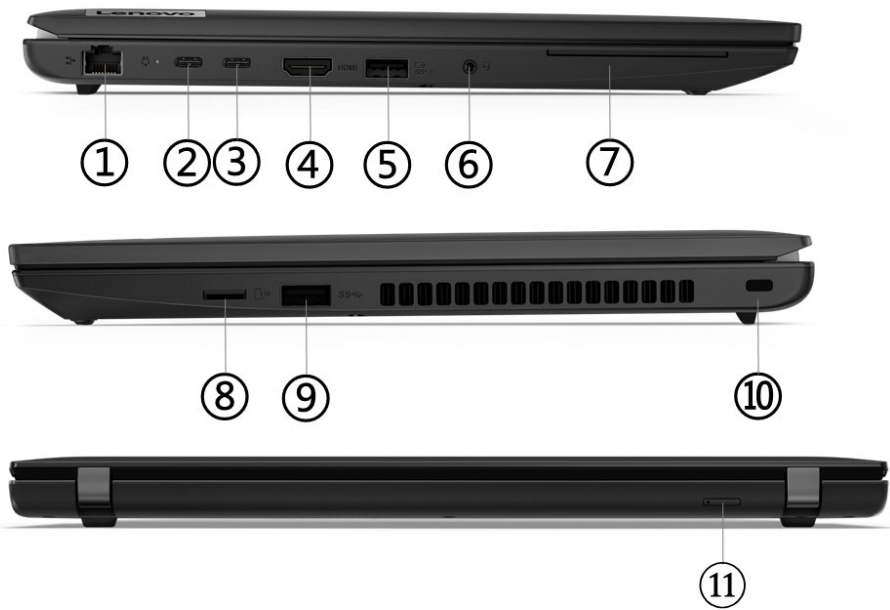
Mil-Spec Test

MIL-STD-810H military test passed

- Feature with ** means that only one offering listed under the feature is configured on selected models.
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OVERVIEW



1. Ethernet (RJ-45)	7. Smart card reader *
2. USB-C 3.2 Gen 2	8. microSD card reader
3. USB-C 3.2 Gen 2	9. USB 3.2 Gen 1
4. HDMI	10. Kensington Nano Security Slot
5. USB 3.2 Gen 1 (Always On)	11. Nano-SIM card slot (WWAN model) *
6. Headphone / microphone combo jack (3.5mm)	

Notes:

- Items with * are only available on selected models

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor**

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Processor Graphics
AMD Ryzen 3 PRO 7330U	4	8	2.3GHz	4.3GHz	2MB L2 / 8MB L3	AMD Radeon™ Graphics
AMD Ryzen 5 PRO 7530U	6	12	2.0GHz	4.5GHz	3MB L2 / 16MB L3	AMD Radeon Graphics
AMD Ryzen 7 PRO 7730U	8	16	2.0GHz	4.5GHz	4MB L2 / 16MB L3	AMD Radeon Graphics

Operating System

Operating System**

- Windows® 11 Pro
- Windows 11 Home
- Windows 11 Home Single Language
- Windows 11 DG Windows 10 Pro 64
- Linux^[1]
- Ubuntu Linux^[2]
- No operating system^[3]

Notes:

[1], [2] Some features may not be supported on the system with Linux preload, including but not limited to Intel® RST RAID, MIPI computer vision camera, WWAN, Human Presence Detection, etc.

[3] Windows 11 DG Windows 10 Pro 64 is for special bid only.

Graphics

Graphics

Graphics	Type	Memory	TGP	Key Features
AMD Radeon Graphics	Integrated	Shared	Share CPU TDP	DirectX® 12

Monitor Support

Monitor Support

Supports up to 4 independent displays (native display and 3 external monitors via HDMI® and USB-C®)

- HDMI supports up to 3840x2160@60Hz
- USB-C supports up to 5120x2880@60Hz

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 64GB DDR4-3200

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-3200

Notes:

[1] The max memory is based on the test results with current Lenovo® memory offerings.

Storage

Storage Support^[1]

One drive, up to 2TB M.2 2242 SSD

Storage Slot

One M.2 2242 PCIe® 3.0 x4 slot

Storage Type^[2]

Disk Type	Interface	Offering	Security
M.2 2242 SSD	PCIe NVMe®, PCIe 4.0 x4	256GB / 512GB / 1TB / 2TB	Opal 2.0

Notes:

[1] The storage capacity supported is based on the test results with current Lenovo storage offerings.

[2] The SSD with PCIe 4.0x4 is downgraded to closer to PCIe 3.0 x4 due to AMD platform limitations.

Removable Storage**Card Reader**

microSD card reader

Multi-Media**Audio Chip**

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

Dual-microphone array, far-field, Dolby Voice

Camera**

- FHD 1080p + IR hybrid, with privacy shutter, fixed focus
- FHD 1080p, with privacy shutter, fixed focus
- HD 720p, with privacy shutter, fixed focus

Battery**Battery****

- Integrated Li-Polymer 46.5Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W or 100W AC adapter
- Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W or 100W AC adapter
- Integrated Li-Polymer 63Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 100W AC adapter

Battery Life^[1]

Configuration 1 (max battery life)

MobileMark® 25: up to 12.18 hr with 607 performance score @250nits

JEITA 2.0: up to 18.1 hr @150nits

Local video playback: up to 17.45 hr @150nits

Alternate configuration 2

MobileMark 25: up to 9.31 hr with 512 performance score @250nits

JEITA 2.0: up to 15.12 hr @150nits

Local video playback: up to 15.32 hr @150nits

Alternate configuration 3

MobileMark 25: up to 7.52 hr with 509 performance score @250nits

JEITA 2.0: up to 12.33 hr @150nits

Local video playback: up to 12.46 hr @150nits

Notes:

[1] Configuration 1 (max battery life): FHD (non-touch), AMD Ryzen 7 PRO 7730U, 8GB DDR4, Win 11, 63Wh battery, best power efficiency power mode

Alternate configuration 2: FHD (touch), AMD Ryzen 5 PRO 7530U, 16GB DDR4, Win 11, 57Wh battery, best power efficiency power mode

Alternate configuration 3: FHD (touch), AMD Ryzen 5 PRO 7530U, 16GB DDR4, Win 11, 46.5Wh battery, best power efficiency power mode

All battery life claims are approximate maximum and based on results using MobileMark 25, JEITA 2.0, continuous 1080p

local video playback (using default Media Player in Fullscreen mode with 150nits brightness and default volume level), or Google Power Load Test (PLT) battery-life benchmark tests.

Actual battery life will vary depending on many factors such as product configuration, software, wireless functionality, power management settings, and screen brightness.

The maximum capacity of the battery will decrease with time, ambient temperature and use.

Refer to Microsoft® link for more information about the Windows Performance power slider.

Power Adapter

Power Adapter**^[1]

- 45W USB-C (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 45W USB-C (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C slim (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C slim (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 100W USB-C slim (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- No power adapter^[2]

Notes:

^[1] AC adapter offerings depend on the country.

^[2] No power adapter is for special bid only.

DESIGN

Display

Display**^[1]

Size	Resolution	Touch	Type	Brightness	Surface	Aspect Ratio	Contrast Ratio	Color Gamut	Refresh Rate	Viewing Angle (L/R/U/D)
15.6"	FHD (1920x1080)	None	IPS	250nits	Anti-glare	16:9	800:1	45% NTSC	60Hz	85°/85°/85°/85°
15.6"	FHD (1920x1080)	Multi-touch	IPS	300nits	Anti-glare	16:9	800:1	45% NTSC	60Hz	85°/85°/85°/85°

Touchscreen

- On-cell multi-touch, supports 10-point touch
- Non-touch

Notes:

^[1] IPS (in-plane switching) technology may refer to IPS, PLS, ADS, AHVA, AAS.

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- Non-backlight

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad, 56 x 115 mm (2.24 x 4.53 inches)

Mechanical

Dimensions (WxDxH)^[1]

360.2 x 237 x 19.93 mm (14.18 x 9.33 x 0.78 inches)

Weight^[2]

Starting at 1.77 kg (3.91 lbs)

Case Color

Thunder black

ThinkPad L15 Gen 4 (AMD)

Case Material

PC-ABS (top), PC-ABS (bottom)

Notes:

[1] The system dimensions may vary depending on configurations.

[2] The system weight is approximate and based on results in Lenovo lab, which varies depending on the source of component, variance of the distribution of each component, and manufacturing process. It may not be the exact weight for each specific model.

CONNECTIVITY

Network

Ethernet

Gigabit Ethernet, Realtek RTL8111EPV, 1x RJ-45, supports Wake-on-LAN

WLAN + Bluetooth[®]**

- Realtek Wi-Fi[®] 6E RTL8852CE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.3, M.2 card^[1]
- AMD Wi-Fi 6E RZ616, 802.11ax 2x2 Wi-Fi + Bluetooth 5.3, M.2 Card^[2]
- No WLAN and Bluetooth

WWAN**

- Wireless WAN upgradable to 4G (with antenna ready)
- Quectel EM05-G, 4G LTE CAT4, M.2 card, with embedded eSIM functionality
- Fibocom L860-GL-16, 4G LTE CAT16, M.2 card, with embedded eSIM functionality
- No support

SIM Card

No physical SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

[1], [2] Wi-Fi 6E full features might be limited by country-level restrictions.

6GHz Wi-Fi 6E operation is dependent on the support of the operating system, routers/APs/Gateways that support Wi-Fi 6E, and the regional regulatory certifications & spectrum allocation.

Bluetooth 5.3 operation requires Windows 11. For more information please see [General Bluetooth Support Information on Microsoft](#).

Ports^[1]

Standard Ports

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x USB-C 3.2 Gen 2 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x HDMI 2.1, up to 4K/60Hz
- 1x Headphone / microphone combo jack (3.5mm)
- 1x Ethernet (RJ-45)
- 1x microSD card reader

Optional Ports***

- 1x Smart card reader
- 1x Nano-SIM card slot (WWAN support models)

Notes:

[1] The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.

USB 2.0: 480 Mbit/s;

USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;

USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;

USB4[®] 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

ThinkPad L15 Gen 4 (AMD)

USB4 40Gbps (USB 40Gbps): 40 Gbit/s;
Thunderbolt™ 3/4: 40 Gbit/s.

Docking

Docking

Various docking solutions supported via USB-C.

For more compatible docking solutions, please visit [Docking for ThinkPad® L15 Gen 4 \(AMD\)](#)

Monitor Cable

Monitor Cable***

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to VGA Adapter
- Lenovo USB-C to DisplayPort Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified, FIPS 140-2 certified

Physical Locks

Kensington® Nano Security Slot™, 2.5 x 6 mm

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader integrated in power button, match-on-chip
- No fingerprint reader

BIOS Security

- Power-on password
- Supervisor password
- NVMe password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

DASH

SERVICE

Warranty

Base Warranty**

- 1-year courier or carry-in service
- 1-year courier or carry-in with 2-year system board service (Korea only)
- 1-year limited onsite service
- 3-year (1-yr battery) courier or carry-in service
- 3-year (1-yr battery) limited onsite service

ENVIRONMENTAL

Sustainability

Material

30% PCC recycled plastic used in top cover frame material
30% PCC recycled plastic used in bottom cover material
50% PCC recycled plastic used in speaker enclosure
90% PCC recycled plastic used in the battery pack
90% PCC recycled plastic used in standard adapter
45% PCC recycled plastic used in SIM tray
Low-temperature solder
90% recycled and/or sustainable packaging

Operating Environment

Temperature^[1]

- Operating: 5°C (41°F) to 35°C (95°F)
- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

[1] When you charge the battery, its temperature must be no lower than 10°C (50°F).

ACCESSORIES

Bundled Accessories

Bundled Accessories^[1]

None

Notes:

[1] For more compatible accessory solutions, please visit [Accessories for ThinkPad L15 Gen 4 \(AMD\)](#)

CERTIFICATIONS

Green Certifications^[1]

Green Certifications^[2]

- ENERGY STAR® 8.0
- EPEAT™ Gold Registered^[3]
- ErP Lot 6
- ErP Lot 26
- RoHS compliant
- TCO Certified 9.0

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration.

[2] EPEAT registration and ENERGY STAR certification are dependent on system OS. Please visit [epeat.net](#) and [energystar.gov](#) for more information.

[3] EPEAT is registered where applicable, please see [epeat.net](#) for registration status by country.

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed

- Feature with ** means that only one offering listed under the feature is configured on selected models.
- Feature with *** means that one or more offerings listed under the feature could be configured on selected models.
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AMD



AMD



AMD



AMD



AMD



AMD

OVERVIEW



1. Nano-SIM card slot *	6. HDMI
2. Thunderbolt 4	7. USB 3.2 Gen 1 (Always On)
3. USB 3.2 Gen 1	8. USB-C 3.2 Gen 2
4. Headphone / microphone combo jack (3.5mm)	9. Kensington Nano Security Slot
5. Pen slot *	10. Smart card reader *

Notes:

- Items with * are only available on selected models

PERFORMANCE

Processor

Processor Family

13th Generation Intel® U Series Core™ i3 / i5 / i7 Processor

Processor**

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Processor Graphics
Core i3-1315U	6 (2 P-core + 4 E-core)	8	P-core 1.2GHz / E-core 0.9GHz	P-core 4.5GHz / E-core 3.3GHz	10MB	Intel UHD Graphics
Core i5-1335U	10 (2 P-core + 8 E-core)	12	P-core 1.3GHz / E-core 0.9GHz	P-core 4.6GHz / E-core 3.4GHz	12MB	Intel Iris® Xe Graphics
Core i5-1345U	10 (2 P-core + 8 E-core)	12	P-core 1.6GHz / E-core 1.2GHz	P-core 4.7GHz / E-core 3.5GHz	12MB	Intel Iris Xe Graphics
Core i7-1355U	10 (2 P-core + 8 E-core)	12	P-core 1.7GHz / E-core 1.2GHz	P-core 5.0GHz / E-core 3.7GHz	12MB	Intel Iris Xe Graphics
Core i7-1365U	10 (2 P-core + 8 E-core)	12	P-core 1.8GHz / E-core 1.3GHz	P-core 5.2GHz / E-core 3.9GHz	12MB	Intel Iris Xe Graphics

Operating System

Operating System**

- Windows® 11 Pro
- Windows 11 Home
- Windows 11 Home Single Language
- Windows 11 DG Windows 10 Pro 64^[1]
- Ubuntu Linux^[2]
- No operating system

Notes:

[1] Windows 11 DG Windows 10 Pro 64 is for special bid only.

[2] Some features may not be supported on the system with Linux preload, including but not limited to Intel RST RAID, MIPI computer vision camera, WWAN, Human Presence Detection, etc.

Graphics

Graphics**

Graphics	Type	Memory	TGP	Key Features
Intel UHD Graphics	Integrated	Shared	Share CPU TDP	DirectX® 12.1
Intel Iris Xe Graphics	Integrated	Shared	Share CPU TDP	DirectX 12.1

Monitor Support

Monitor Support

Supports up to 4 independent displays (native display and 3 external monitors via HDMI®, USB-C® and Thunderbolt™)

- HDMI supports up to 3840x2160@60Hz
- USB-C supports up to 5120x3200@60Hz
- Thunderbolt supports up to 5120x3200@60Hz

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type^[1]

LPDDR5-4800

Notes:

[1] Installed memory is actually 6400MHz but run at 4800MHz due to platform limitation.

Storage**Storage Support^[1]**

One drive, up to 1TB M.2 2242 SSD

Storage Slot

One M.2 2242 PCIe® 4.0 x4 slot

Storage Type

Disk Type	Interface	Offering	Security
M.2 2242 SSD	PCIe NVMe®, PCIe 4.0 x4	256GB / 512GB / 1TB	Opal 2.0

Notes:

[1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.

Removable Storage**Card Reader**

No card reader

Multi-Media**Audio Chip**

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™ Premium

Microphone

Dual-microphone array, far-field, Dolby Voice

Camera**

- Front FHD 1080p + IR hybrid, with privacy shutter, fixed focus
- Front FHD 1080p + IR hybrid, with privacy shutter, fixed focus; rear 5.0-megapixel, autofocus
- Front FHD 1080p, with privacy shutter, fixed focus
- Front FHD 1080p, with privacy shutter, fixed focus; rear 5.0-megapixel, autofocus
- Front HD 720p, with privacy shutter, fixed focus
- Front HD 720p, with privacy shutter, fixed focus; rear 5.0-megapixel, autofocus

Battery**Battery**

Integrated Li-Polymer 46Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Battery Life^[1]

Configuration 1 (max battery life)

MobileMark® 25: up to 10.76 hr with 628 performance score @250nits

JEITA 2.0: up to 20.83 hr @150nits

Local video playback: up to 16.23 hr @150nits

Alternate configuration 2

MobileMark 25: up to 10.25 hr with 569 performance score @250nits

JEITA 2.0: up to 15.33 hr @150nits

Local video playback: up to 13.3 hr @150nits

Alternate configuration 3

MobileMark 25: up to 9.35 hr with 726 performance score @250nits

JEITA 2.0: up to 13.28 hr @150nits

Local video playback: up to 11.57 hr @150nits

Notes:

- [1] Configuration 1 (max battery life): WUXGA (touch), Intel i3-1315U, 8GB LPDDR5, Win 11, 46Wh battery, best power efficiency power mode
- Alternate configuration 2: WUXGA (touch), Intel i5-1345U, 16GB LPDDR5, Win 11, 46Wh battery, best power efficiency power mode
- Alternate configuration 3: WUXGA (touch), Intel i7-1365U, 32GB LPDDR5, Win 11, 46Wh battery, best power efficiency power mode

All battery life claims are approximate maximum and based on results using [MobileMark 25](#), JEITA 2.0, continuous 1080p local video playback (using default Media Player in Fullscreen mode with 150nits brightness and default volume level), or Google Power Load Test (PLT) battery-life benchmark tests. Actual battery life will vary depending on many factors such as product configuration, software, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time, ambient temperature and use. Refer to [Microsoft® link](#) for more information about the Windows Performance power slider.

Power Adapter

Power Adapter**[1]

- 45W USB-C (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 45W USB-C (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C slim (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C slim (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz

Notes:

- [1] AC adapter offerings depend on the country.

DESIGN

Display

Display**[1]

Size	Resolution	Touch	Type	Brightness	Surface	Aspect Ratio	Contrast Ratio	Color Gamut	Refresh Rate	Viewing Angle (L/R/U/D)	Key Features
13.3"	WUXGA (1920x1200)	Multi-touch	IPS	300nits	Anti-reflection, anti-smudge	16:10	1000:1	100% sRGB	60Hz	85°/85°/85°/85°	-
13.3"	WUXGA (1920x1200)	Multi-touch	IPS	400nits	Anti-glare, anti-smudge	16:10	1500:1	100% sRGB	60Hz	89°/89°/89°/89°	Low power, TÜV Low Blue Light

Touchscreen

OGS (One Glass Solution) multi-touch, supports 10-point touch

Notes:

- [1] IPS (in-plane switching) technology may refer to IPS, PLS, ADS, AHVA, AAS.

Multi-mode

Multi-mode

Laptop, tent, stand, and tablet modes supported by 360° hinge

Input Device

Pen

- Lenovo Integrated Pen, with built-in rechargeable battery, 4096 levels of pressure sensitivity, on-board garaged and

ThinkPad L13 Yoga Gen 4 (Intel)

- rechargeable
- No pen^[1]

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- Non-backlight

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad, 56 x 115 mm (2.24 x 4.53 inches)

Notes:

^[1] Customer needs to purchase an external pen separately.

Mechanical

Dimensions (WxDxH)^[1]

305 x 218 x 17.06 mm (12.0 x 8.58 x 0.67 inches)

Weight^[2]

Starting at 1.32 kg (2.92 lbs)

Case Color**

- Storm grey
- Thunder black

Case Material

Aluminium (top), GFRP (bottom)

Notes:

^[1] The system dimensions may vary depending on configurations.

^[2] The system weight is approximate and based on results in Lenovo lab, which varies depending on the source of component, variance of the distribution of each component, and manufacturing process. It may not be the exact weight for each specific model.

CONNECTIVITY

Network

Ethernet^[1]

No onboard Ethernet

WLAN + Bluetooth®**

- Intel Wi-Fi® 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2^[2]
- Intel Wi-Fi 6E AX211, 802.11ax 2x2 Wi-Fi + Bluetooth 5.3^[3]

WWAN**

- Wireless WAN upgradable to 4G (with antenna ready)
- Quectel EM05-G, 4G LTE CAT4, M.2 card, with embedded eSIM functionality
- Fibocom L860-GL-16, 4G LTE CAT16, M.2 card, with embedded eSIM functionality
- No support

SIM Card

No physical SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

^[1] Ethernet support via optional Lenovo USB-C to Ethernet Adapter.

^[2] Wi-Fi 6 full features might be limited by country-level restrictions.

Bluetooth 5.2 is hardware ready but may run at a lower version due to OS limitations.

^[3] Wi-Fi 6E full features might be limited by country-level restrictions.

ThinkPad L13 Yoga Gen 4 (Intel)

Wi-Fi 6E is only enabled on Windows 11 and operates as Wi-Fi 6 with Windows 10.
6GHz Wi-Fi 6E operation is dependent on the support of the operating system, routers/APs/Gateways that support Wi-Fi 6E, and the regional regulatory certifications & spectrum allocation.
Bluetooth 5.3 operation requires Windows 11. For more information please see [General Bluetooth Support Information on Microsoft](#).

Ports^[1]

Standard Ports

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x Thunderbolt 4 / USB4® 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort 1.4)
- 1x HDMI 2.1, up to 4K/60Hz
- 1x Headphone / microphone combo jack (3.5mm)

Optional Ports

- 1x Smart card reader
- 1x Nano-SIM card slot (WWAN support models)

Notes:

[1] The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.

USB 2.0: 480 Mbit/s;

USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;

USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;

USB4 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

USB4 40Gbps (USB 40Gbps): 40 Gbit/s;

Thunderbolt 3/4: 40 Gbit/s.

Docking

Docking

Various docking solutions supported via Thunderbolt or USB-C.

For more compatible docking solutions, please visit [Docking for ThinkPad® L13 Yoga® Gen 4 \(Intel\)](#)

Monitor Cable

Monitor Cable^{***}

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to VGA Adapter
- Lenovo USB-C to HDMI Adapter
- Lenovo USB-C to DisplayPort Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified, FIPS 140-2 certified

Physical Locks

Kensington® Nano Security Slot™, 2.5 x 6 mm

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader integrated in power button, match-on-chip
- No fingerprint reader

BIOS Security

- Power-on password
- Supervisor password

ThinkPad L13 Yoga Gen 4 (Intel)

- NVMe password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro® Enterprise^[1]
- Non-vPro

Notes:

^[1] Intel vPro offers a superset of DASH's defined capabilities.

SERVICE

Warranty

Base Warranty**

- 1-year courier or carry-in service
- 1-year courier or carry-in with 2-year system board service (Korea only)
- 1-year limited onsite service
- 3-year (1-yr battery) courier or carry-in service
- 3-year (1-yr battery) limited onsite service

ENVIRONMENTAL

Sustainability

Material

30% PCC recycled plastic used in top cover frame material
50% PCC recycled plastic used in speaker enclosure
90% PCC recycled plastic used in the battery pack
90% PCC recycled plastic used in standard adapter
Low-temperature solder
90% recycled and/or sustainable packaging

Operating Environment

Temperature^[1]

- Operating: 5°C (41°F) to 35°C (95°F)
- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

^[1] When you charge the battery, its temperature must be no lower than 10°C (50°F).

ACCESSORIES

Bundled Accessories

Bundled Accessories***^[1]

ThinkPad L13 Yoga Gen 4 (Intel)

- Lenovo USB-C to Ethernet Adapter (1Gbps)
- Lenovo USB-C to USB-A Adapter
- Lenovo USB-C to USB-C Cable 2m
- None

Notes:

[1] For more compatible accessory solutions, please visit [Accessories for ThinkPad L13 Yoga Gen 4 \(Intel\)](#)

CERTIFICATIONS

Green Certifications^[1]

Green Certifications^[2]

- ENERGY STAR® 8.0
- EPEAT™ Gold Registered^[3]
- ErP Lot 6
- ErP Lot 26
- RoHS compliant
- TCO Certified 9.0

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration.

[2] EPEAT registration and ENERGY STAR certification are dependent on system OS. Please visit [epeat.net](#) and [energystar.gov](#) for more information.

[3] EPEAT is registered where applicable, please see [epeat.net](#) for registration status by country.

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed

Other Certifications

(Optional) TÜV Rheinland® Low Blue Light (Hardware Solution)

- Feature with ** means that only one offering listed under the feature is configured on selected models.
- Feature with *** means that one or more offerings listed under the feature could be configured on selected models.
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OVERVIEW



1. Nano-SIM card slot *	6. HDMI
2. USB-C 3.2 Gen 2	7. USB 3.2 Gen 1 (Always On)
3. USB 3.2 Gen 1	8. USB-C 3.2 Gen 2
4. Headphone / microphone combo jack (3.5mm)	9. Kensington Nano Security Slot
5. Pen slot *	10. Smart card reader *

Notes:

- Items with * are only available on selected models

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor**

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Processor Graphics
AMD Ryzen 3 7330U	4	8	2.3GHz	4.3GHz	2MB L2 / 8MB L3	AMD Radeon™ Graphics
AMD Ryzen 5 PRO 7530U	6	12	2.0GHz	4.5GHz	3MB L2 / 16MB L3	AMD Radeon Graphics
AMD Ryzen 7 PRO 7730U	8	16	2.0GHz	4.5GHz	4MB L2 / 16MB L3	AMD Radeon Graphics

Operating System

Operating System**

- Ubuntu Linux^[1]
- Windows® 11 DG Windows 10 Pro 64^[2]
- Windows 11 Home
- Windows 11 Home Single Language
- Windows 11 Pro
- No operating system

Notes:

[1] Some features may not be supported on the system with Linux preload, including but not limited to Intel® RST RAID, MIPI computer vision camera, WWAN, Human Presence Detection, etc.

[2] Windows 11 DG Windows 10 Pro 64 is for special bid only.

Graphics

Graphics

Graphics	Type	Memory	TGP	Key Features
AMD Radeon Graphics	Integrated	Shared	Share CPU TDP	DirectX® 12

Monitor Support

Monitor Support

Supports up to 4 independent displays (native display and 3 external monitors via HDMI® and USB-C®)

- HDMI supports up to 3840x2160@60Hz
- USB-C supports up to 5120x2880@60Hz

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

DDR4-3200

Storage

Storage Support^[1]

One drive, up to 1TB M.2 2242 SSD

Storage Slot

One M.2 2242 PCIe® 3.0 x4 slot

Storage Type^[2]

Disk Type	Interface	Offering	Security
M.2 2242 SSD	PCIe NVMe®, PCIe 4.0 x4	256GB / 512GB / 1TB	Opal 2.0

Notes:

- [1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.
- [2] The SSD with PCIe 4.0x4 is downgraded to closer to PCIe 3.0 x4 due to AMD platform limitations.

Removable Storage

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™ Premium

Microphone

Dual-microphone array, far-field, Dolby Voice

Camera**

- Front FHD 1080p + IR hybrid, with privacy shutter, fixed focus
- Front FHD 1080p + IR hybrid, with privacy shutter, fixed focus; rear 5.0-megapixel, autofocus
- Front FHD 1080p, with privacy shutter, fixed focus
- Front FHD 1080p, with privacy shutter, fixed focus; rear 5.0-megapixel, autofocus
- Front HD 720p, with privacy shutter, fixed focus
- Front HD 720p, with privacy shutter, fixed focus; rear 5.0-megapixel, autofocus

Battery

Battery

Integrated Li-Polymer 46Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Battery Life^[1]

Configuration 1 (max battery life)
 MobileMark® 25: up to 10.91 hr with 572 performance score @250nits
 JEITA 2.0: up to 15.07 hr @150nits
 Local video playback: up to 13.57 hr @150nits

Alternate configuration 2
 MobileMark 25: up to 9.65 hr with 544 performance score @250nits
 JEITA 2.0: up to 13.05 hr @150nits
 Local video playback: up to 12.28 hr @150nits

Alternate configuration 3
 MobileMark 25: up to 9.29 hr with 508 performance score @250nits
 JEITA 2.0: up to 13.5 hr @150nits
 Local video playback: up to 12.71 hr @150nits

Notes:

- [1] Configuration 1 (max battery life): WUXGA (touch), AMD Ryzen 7 PRO 7730U, 16GB DDR4, Win 11, 46Wh battery, best power efficiency power mode
- Alternate configuration 2: WUXGA (touch), AMD Ryzen 5 7530U PRO, 16GB DDR4, Win 11, 46Wh battery, best power efficiency power mode
- Alternate configuration 3: WUXGA (touch), AMD Ryzen 3 7330U, 8GB DDR4, Win 11, 46Wh battery, best power efficiency power mode

All battery life claims are approximate maximum and based on results using [MobileMark 25](#), JEITA 2.0, continuous 1080p local video playback (using default Media Player in Fullscreen mode with 150nits brightness and default volume level), or Google Power Load Test (PLT) battery-life benchmark tests.

Actual battery life will vary depending on many factors such as product configuration, software, wireless functionality, power management settings, and screen brightness.

The maximum capacity of the battery will decrease with time, ambient temperature and use.

Refer to [Microsoft* link](#) for more information about the Windows Performance power slider.

Power Adapter

Power Adapter**^[1]

- 45W USB-C (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 45W USB-C (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C slim (2-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz
- 65W USB-C slim (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz

Notes:

^[1] AC adapter offerings depend on the country.

DESIGN

Display

Display**^[1]

Size	Resolution	Touch	Type	Brightness	Surface	Aspect Ratio	Contrast Ratio	Color Gamut	Refresh Rate	Viewing Angle (L/R/U/D)	Key Features
13.3"	WUXGA (1920x1200)	Multi-touch	IPS	300nits	Anti-reflection, anti-smudge	16:10	1000:1	100% sRGB	60Hz	85°/85°/85°/85°	-
13.3"	WUXGA (1920x1200)	Multi-touch	IPS	400nits	Anti-glare, anti-smudge	16:10	1500:1	100% sRGB	60Hz	89°/89°/89°/89°	Low power, TÜV Low Blue Light

Touchscreen

OGS (One Glass Solution) multi-touch, supports 10-point touch

Notes:

^[1] IPS (in-plane switching) technology may refer to IPS, PLS, ADS, AHVA, AAS.

Multi-mode

Multi-mode

Laptop, tent, stand, and tablet modes supported by 360° hinge

Input Device

Pen

- Lenovo Integrated Pen, with built-in rechargeable battery, 4096 levels of pressure sensitivity, on-board garaged and rechargeable
- No pen^[1]

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- Non-backlight

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad, 56 x 115 mm (2.24 x 4.53 inches)

Notes:

ThinkPad L13 Yoga Gen 4 (AMD)

[1] Customer needs to purchase an external pen separately.

Mechanical

Dimensions (WxDxH)^[1]

305 x 218 x 17.06 mm (12.0 x 8.58 x 0.67 inches)

Weight^[2]

Starting at 1.31 kg (2.89 lbs)

Case Color^{**}

- Storm grey
- Thunder black

Case Material

Aluminium (top), GFRP (bottom)

Notes:

[1] The system dimensions may vary depending on configurations.

[2] The system weight is approximate and based on results in Lenovo lab, which varies depending on the source of component, variance of the distribution of each component, and manufacturing process. It may not be the exact weight for each specific model.

CONNECTIVITY

Network

Ethernet^[1]

No onboard Ethernet

WLAN + Bluetooth^[2]

AMD Wi-Fi® 6E RZ616, 802.11ax 2x2 Wi-Fi + Bluetooth 5.3

WWAN^{**}

- Wireless WAN upgradable to 4G (with antenna ready)
- Quectel EM05-G, 4G LTE CAT4, M.2 card, with embedded eSIM functionality
- Fibocom L860-GL-T6, 4G LTE CAT16, M.2 card, with embedded eSIM functionality
- No support

SIM Card

No physical SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

[1] Ethernet support via optional Lenovo USB-C to Ethernet Adapter.

[2] Wi-Fi 6E full features might be limited by country-level restrictions.

Wi-Fi 6E is only enabled on Windows 11 and operates as Wi-Fi 6 with Windows 10.

6GHz Wi-Fi 6E operation is dependent on the support of the operating system, routers/APs/Gateways that support Wi-Fi 6E, and the regional regulatory certifications & spectrum allocation.

Bluetooth 5.3 operation requires Windows 11. For more information please see [General Bluetooth Support Information on Microsoft](#).

Ports^[1]

Standard Ports

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x USB-C 3.2 Gen 2 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x HDMI 2.1, up to 4K/60Hz
- 1x Headphone / microphone combo jack (3.5mm)

Optional Ports^{***}

- 1x Smart card reader

ThinkPad L13 Yoga Gen 4 (AMD)

- 1x Nano-SIM card slot (WWAN support models)

Notes:

[1] The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.

USB 2.0: 480 Mbit/s;

USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;

USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;

USB4® 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

USB4 40Gbps (USB 40Gbps): 40 Gbit/s;

Thunderbolt™ 3/4: 40 Gbit/s.

Docking

Docking

Various docking solutions supported via USB-C.

For more compatible docking solutions, please visit [Docking for ThinkPad® L13 Yoga® Gen 4 \(AMD\)](#)

Monitor Cable

Monitor Cable***

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to VGA Adapter
- Lenovo USB-C to HDMI Adapter
- Lenovo USB-C to DisplayPort Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified, FIPS 140-2 certified

Physical Locks

Kensington® Nano Security Slot™, 2.5 x 6 mm

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader integrated in power button, match-on-chip
- No fingerprint reader

BIOS Security

- Power-on password
- Supervisor password
- NVMe password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- DASH
- Non-DASH

SERVICE

ThinkPad L13 Yoga Gen 4 (AMD)

Warranty

Base Warranty**

- 1-year courier or carry-in service
- 1-year limited onsite service
- 3-year (1-yr battery) courier or carry-in service
- 3-year (1-yr battery) limited onsite service

ENVIRONMENTAL

Sustainability

Material

30% PCC recycled plastic used in top cover frame material
50% PCC recycled plastic used in speaker enclosure
90% PCC recycled plastic used in the battery pack
90% PCC recycled plastic used in standard adapter
Low-temperature solder
90% recycled and/or sustainable packaging

Operating Environment

Temperature^[1]

- Operating: 5°C (41°F) to 35°C (95°F)
- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without packaging: 5°C (41°F) to 43°C (109°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

[1] When you charge the battery, its temperature must be no lower than 10°C (50°F).

ACCESSORIES

Bundled Accessories

Bundled Accessories***^[1]

- Lenovo USB-C to Ethernet Adapter (1Gbps)
- Lenovo USB-C to USB-A Adapter
- Lenovo USB-C to USB-C Cable 2m
- None

Notes:

[1] For more compatible accessory solutions, please visit [Accessories for ThinkPad L13 Yoga Gen 4 \(AMD\)](#)

CERTIFICATIONS

Green Certifications^[1]

Green Certifications^[2]

- ENERGY STAR® 8.0
- EPEAT™ Gold Registered^[3]
- ErP Lot 6
- ErP Lot 26
- RoHS compliant
- TCO Certified 9.0

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration.

[2] EPEAT registration and ENERGY STAR certification are dependent on system OS. Please visit epeat.net and energystar.gov for more information.

[3] EPEAT is registered where applicable, please see epeat.net for registration status by country.

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed

Other Certifications

(Optional) TÜV Rheinland® Low Blue Light (Hardware Solution)

- Feature with ** means that only one offering listed under the feature is configured on selected models.
- Feature with *** means that one or more offerings listed under the feature could be configured on selected models.
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AMD



AMD



AMD



AMD

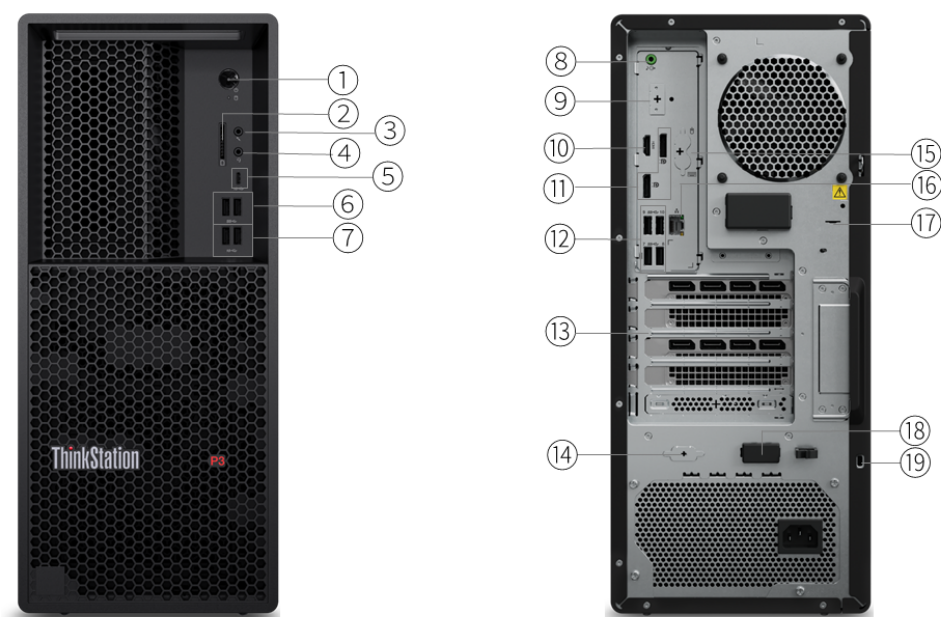


AMD



AMD

OVERVIEW



1. Power button	11. 2x DisplayPort
2. SD card reader *	12. 4x USB-A (USB 5Gbps)
3. Microphone (3.5mm)	13. Optional ports on expansion cards *
4. Headphone / microphone combo jack (3.5mm)	14. Serial (9-pin) *
5. USB-C (USB 10Gbps), data transfer only	15. 2x PS/2 ports (keyboard / mouse) *
6. 2x USB-A (USB 5Gbps)	16. Ethernet (GbE RJ-45)
7. 2x USB-A (USB 10Gbps)	17. E-lock slot
8. Audio line-out (3.5mm)	18. Cable lock slot
9. Flex IO *	19. Kensington Security Slot
10. HDMI	

- Notes:
- Items with * are only available on selected models
 - Flex IO supports one optional port from HDMI, VGA, USB-C (with DP function), and DP.

PERFORMANCE

Processor

Processor Family

Up to one 13th Gen Intel® Core™ i3 / i5 / i7 / i9 processor, supports up to 24 cores, up to 5.8GHz

Processor**^[1]

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics
Core i3-13100	4 (4 P-core + 0 E-core)	8	P-core 3.4GHz	P-core 4.5GHz	12MB	DDR5-4800	Intel UHD Graphics 730
Core i5-13400	10 (6 P-core + 4 E-core)	16	P-core 2.5GHz / E-core 1.8GHz	P-core 4.6GHz / E-core 3.3GHz	20MB	DDR5-4800	Intel UHD Graphics 730
Core i5-13500	14 (6 P-core + 8 E-core)	20	P-core 2.5GHz / E-core 1.8GHz	P-core 4.8GHz / E-core 3.5GHz	24MB	DDR5-4800	Intel UHD Graphics 770
Core i5-13600	14 (6 P-core + 8 E-core)	20	P-core 2.7GHz / E-core 2.0GHz	P-core 5.0GHz / E-core 3.7GHz	24MB	DDR5-4800	Intel UHD Graphics 770
Core i5-13600K	14 (6 P-core + 8 E-core)	20	P-core 3.5GHz / E-core 2.6GHz	P-core 5.1GHz / E-core 3.9GHz	24MB	DDR5-5600	Intel UHD Graphics 770
Core i7-13700	16 (8 P-core + 8 E-core)	24	P-core 2.1GHz / E-core 1.5GHz	Max Turbo up to 5.2GHz / P-core 5.1GHz / E-core 4.1GHz	30MB	DDR5-5600	Intel UHD Graphics 770
Core i7-13700K	16 (8 P-core + 8 E-core)	24	P-core 3.4GHz / E-core 2.5GHz	Max Turbo up to 5.4GHz / P-core 5.3GHz / E-core 4.2GHz	30MB	DDR5-5600	Intel UHD Graphics 770
Core i9-13900	24 (8 P-core + 16 E-core)	32	P-core 2.0GHz / E-core 1.5GHz	Max Turbo up to 5.6GHz / P-core 5.2GHz / E-core 4.2GHz	36MB	DDR5-5600	Intel UHD Graphics 770
Core i9-13900K	24 (8 P-core + 16 E-core)	32	P-core 3.0GHz / E-core 2.2GHz	Max Turbo up to 5.8GHz / P-core 5.4GHz / E-core 4.3GHz	36MB	DDR5-5600	Intel UHD Graphics 770

Processor Sockets

1x FCLGA1700

Notes:

^[1] Intel Max Turbo frequency will vary depending on application workload and the hardware and software configurations, see <http://www.intel.com/technology/turboboost/> for more information.

Operating System

Operating System**

- Windows® 11 Pro
- Windows 11 Home
- Windows 11 DG Windows 10 Pro 64
- Red Hat Enterprise Linux 9.2 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))
- Ubuntu Linux LTS
- No operating system

Graphics

Integrated Graphics**

- Intel UHD Graphics 730
- Intel UHD Graphics 770

Discrete Graphics Support^[1]

Supports up to one NVIDIA® RTX 5000 Ada Generation or two NVIDIA RTX A2000

Discrete Graphics Offering

Graphics	Memory	Power	Connector	Form Factor	SLI / NVLink
NVIDIA T400 4GB	4GB GDDR6	40W	3x miniDP 1.4	Single slot	None
NVIDIA T1000 8GB	8GB GDDR6	50W	4x miniDP 1.4	Single slot	None
NVIDIA RTX A2000 12GB	12GB GDDR6	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA RTX A4000	16GB GDDR6 with ECC	140W	4x DP 1.4a	Single slot	None
NVIDIA RTX A4500	20GB GDDR6 with ECC	200W	4x DP 1.4	Dual slot	None
NVIDIA RTX A5000	24GB GDDR6 with ECC	230W	4x DP 1.4a	Dual slot	None
NVIDIA RTX A5500	24GB GDDR6 with ECC	230W	4x DP 1.4a	Dual slot	None
NVIDIA RTX 4000 Ada Generation	20GB GDDR6 with ECC	130W	4x DP 1.4a	Single slot	-
NVIDIA RTX 4500 Ada Generation	24GB GDDR6 with ECC	210W	4x DP 1.4a	Dual slot	-
NVIDIA RTX 5000 Ada Generation	32GB GDDR6 with ECC	250W	4x DP 1.4a	Dual slot	-
NVIDIA RTX 2000 Ada Generation	20GB GDDR6	70W	4x miniDP 1.4a	Single slot	None

Notes:

[1] Discrete graphics support may vary by configurations such as processor selection or power supply wattage.

Monitor Support

Monitor Support

Supports multiple displays via onboard video ports and discrete graphics, the number of maximum monitors supported depends on the graphic card in use

Chipset

Chipset

Intel W680 chipset

Memory

Max Memory^[1]

Up to 128GB (4x 32GB DDR5 UDIMM)

Memory Type^{**[2]}

- DDR5-4400 UDIMM ECC
- DDR5-4400 UDIMM non-ECC

Memory Slots

4 DDR5 DIMM slots, 2 channels capable

Memory Protection

ECC on models with ECC DIMMs and ECC capable processor

Notes:

[1] The max memory is based on the test results with current Lenovo® memory offerings.

[2] Memory operating speed varies depending on memory configuration, maximum operating speed is DDR5-4400: 1x 8GB / 2x 8GB / 1x 16GB / 2x 16GB / 2x 32GB configurations run at DDR5-4400; 4x 8GB / 4x 16GB configurations run at DDR5-4000; 4x 32GB configuration runs at DDR5-3600.

Storage

Storage Support^{[1][2]}

Up to five drives (4x HDD + 1x M.2 SSD) or six drives (3x HDD + 3x M.2 SSD)

- 3.5" HDD up to 6TB each
- 2.5" HDD up to 1TB each
- M.2 SSD up to 4TB or 2TB each (see Storage Type)

Storage Type^[3]

Disk Type	Interface	RPM	Offering	Security
2.5" SATA HDD	SATA 6Gb/s	7.2K	1TB / 1TB FIPS	-

3.5" SATA HDD	SATA 6Gb/s	7.2K	1TB / 2TB / 4TB / 6TB	-
M.2 2280 SSD for single M.2 to PCIe® adapter	PCIe NVMe®, PCIe 4.0 x4	-	256GB	Opal 2.0
M.2 2280 SSD for Onboard	PCIe NVMe, PCIe 4.0 x4 Performance	-	512GB / 1TB / 2TB / 4TB	Opal 2.0
M.2 2280 SSD for single M.2 to PCIe adapter	PCIe NVMe, PCIe 4.0 x4 Performance	-	512GB / 1TB / 2TB	Opal 2.0

Storage Controllers

Storage Controller	Type	Interface	RAID	Cache
Integrated NVMe controller	Standard	PCIe NVMe	0/1	None
Integrated SATA controller	Standard	SATA 6.0Gb/s	0/1/10/5	None

- Notes:
- [1] The storage capacity supported is based on the test results with current Lenovo storage offerings.
- [2] For detailed storage bays infomation and how to upgrade optional drives for ThinkStation® products, please visit [ThinkStation Storage Upgrade Guide](#)
- [3] M.2 slot on single M.2 to PCIe adapter works at PCIe 3.0.

Removable Storage

Optical Support

Optional one 9.0mm optical drive, DVD-ROM, DVD±RW, and Blu-ray

Card Reader

- SD card reader
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC897Q-CG codec

Speakers

Single speaker, 2W x1

Power Supply

Power Supply**

Power	Type	Efficiency	Key Features
500W	Fixed	92%	Autosensing, 80 PLUS Platinum qualified
750W	Fixed	92%	Autosensing, 80 PLUS Platinum qualified
1100W	Fixed	92%	Autosensing, 80 PLUS Platinum qualified

DESIGN

Mechanical

Form Factor

Tower (27L)

Dimensions (WxDxH)^[1]

180 x 370 x 415 mm (7.09 x 14.57 x 16.34 inches)

Weight^[2]

13.61 kg (30.0. lbs, maximum configuration)

Bays^[3]

Up to four disk bays:

- Bay 1 supports one 3.5" / 2.5" drive, standard
- Bay 2 supports one 3.5" / 2.5" drive, optional
- Bay 3 supports one 3.5" / 2.5" drive, optional

- Bay 4 supports one 3.5" / 2.5" drive, optional
- Front Access HDD Bay supports one 3.5" / 2.5" drive, optional, occupies Bay 3 location

M.2 Slots

- Up to 3x M.2 SSD:
 - 2 via onboard slot, can't be available when 4th HDD is selected
 - 1 via Single M.2 to PCIe adapter
- One M.2 slot (for WLAN)

Expansion Slots

Supports four PCIe slots with two PCIe 4.0 x16 and two PCIe 3.0 x1.

- Slot 1: PCIe 4.0 x16, full height, full length, 75W, double-width
- Slot 2: PCIe 3.0 x1, full height, half length, 25W
- Slot 3: PCIe 4.0 x16 (x4 lanes), full height, half length, 25W
- Slot 4: PCIe 3.0 x1, full height, half length, 25W

Notes:

[1] The system dimensions may vary depending on configurations.

[2] The system weight is approximate and based on results in Lenovo lab, which varies depending on the source of component, variance of the distribution of each component, and manufacturing process. It may not be the exact weight for each specific model.

[3] Front access HDD bay can be selected when disk bays is equal or less that 2.

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ-45, supports Wake-on-LAN

Optional Ethernet

Up to two additional PCIe x1 Ethernet adapters or one PCIe x4 Ethernet adapter support, up to one additional 10 GbE ports

- Gigabit Ethernet, Intel I210-T1, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Intel I350-T2, 2x RJ-45, PCIe x4
- Gigabit Ethernet, Broadcom BCM5719, 4x RJ-45, PCIe x4
- Gigabit Ethernet, Broadcom BCM5720, 2x RJ-45, PCIe x1
- Gigabit Ethernet, Realtek RTL8168H, 1x RJ-45, PCIe x1
- 10 Gigabit Ethernet, Marvell AQtion AQN-107, 1x RJ-45, PCIe x4

WLAN + Bluetooth®

- Intel Wi-Fi® 6E AX211, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1 (Bluetooth 5.3 hardware ready), Intel vPro® technology support^[1]
- No WLAN and Bluetooth

Notes:

[1] Bluetooth 5.3 is hardware ready but may run at a lower version due to OS limitations.

Wi-Fi 6E is only enabled on Windows 11 and operates as Wi-Fi 6 with Windows 10.

Ports^[1]

Front Ports

- 1x USB-C® (USB 10Gbps / USB 3.2 Gen 2), data transfer only
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1)
- 2x USB-A (USB 10Gbps / USB 3.2 Gen 2)
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Rear Ports^[2]

- 1x HDMI® 2.1 TMDS
- 2x DisplayPort™ 1.4
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)
- 4x USB-A (USB 5Gbps / USB 3.2 Gen 1), one supports Smart Power On

Optional Rear Ports^[3]

- 1x USB-C (USB 5Gbps / USB 3.2 Gen 1), with DisplayPort function (Flex IO)

- 1x HDMI 2.1 TMDS (Flex IO)
- 1x DP 1.2 (Flex IO)
- 1x VGA (Flex IO)
- 1x parallel (via cable and PCIe bracket)
- 1x Thunderbolt™ 4 (via additional PCIe adapter)
- 1x USB-C (USB 20Gbps / USB 3.2 Gen 2x2), support data transfer, via USB-C PCIe x4 card
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), via additional PCIe adapter
- 2x USB-A (Hi-Speed USB / USB 2.0), via cable and PCIe bracket
- 1x serial (via cable)
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 2x PS/2 (via cable)

Notes:

[1] The transfer speed of the ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes, and other factors related to system configuration and your operating environment, will be slower than the theoretical speed.

[2] For video ports on discrete graphics, please see graphics section.

[3] 2x USB 2.0 and 1x parallel can not be chosen simultaneously.

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified, FIPS 140-2 certified

Physical Locks

- (Optional) Cable lock
- (Optional) E-lock
- Kensington® Security Slot™, 3 x 7 mm
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

BIOS Security

- Administrator password
- Power-on password
- UEFI Secure Boot
- Self-healing BIOS

MANAGEABILITY

System Management

System Management^[1]

- Intel vPro Enterprise with Intel AMT 16
- Non-vPro

Notes:

[1] Intel vPro offers a superset of DASH's defined capabilities.

SERVICE

Warranty^[1]

Base Warranty**

- 1-year limited onsite service
- 2-year limited onsite service
- 3-year limited onsite service
- No base warranty

Notes:

[1] The warranty upgrades may be bundled with some models, please check the "Included upgrade" column in the specific model's configurations. For more service extensions, please go to <https://smartfind.lenovo.com/>. To learn more details of warranty policy, please access <https://pcsupport.lenovo.com/warranty>.

ENVIRONMENTAL

Operating Environment

Temperature

- Operating: 10°C (50°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Altitude

- Operating: 0 m (0 ft) to 3048 m (10,000 ft)
- Storage: 0 m (0 ft) to 12192 m (40,000 ft)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

CERTIFICATIONS

Green Certifications^[1]

Green Certifications

- (Optional) ENERGY STAR® 8.0
- (Optional) EPEAT™ Gold Registered^[2]
- ErP Lot 3
- RoHS compliant
- TCO Certified 9.0

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration.

[2] EPEAT is registered where applicable, please see epeat.net for registration status by country.

ISV Certifications

ISV Certifications

Please visit [ISV certifications for Lenovo Workstations](#)

- Feature with ** means that only one offering listed under the feature is configured on selected models.
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Warranty



Protection



Factory
Services



Managed
Services



Asset Recovery
and Disposal



Lenovo™

LENOVO™ WARRANTY SERVICES

PROTECT YOUR INVESTMENT

Lenovo™ offers a comprehensive portfolio of services that support the full lifecycle of your Lenovo™ IT assets. At every stage from planning, deployment, support to asset recovery, we offer the expertise and services you need to more accurately budget for IT expenses, deliver better service level agreements and generate greater end-user satisfaction. Let Lenovo™ Services' unique offerings and expertise help you get the most out of your technology investment.

WHY LENOVO™?

- ▶ No one knows our products like we do. The best products deserve the best service.
- ▶ Certified Lenovo™ technicians use Lenovo™-Qualified parts for the highest quality repairs.
- ▶ Our global network of regional support centers offers consistent, local-language support to your organization and employees, wherever they are.

COST SAVINGS

Minimize unplanned operating and maintenance expenses.

GLOBAL COVERAGE

Consistent service levels for multinational organizations, with in-region and local-language support.

INCREASE UPTIME AND PRODUCTIVITY

Convenient On-site and Expedited Depot options.

CUSTOMIZE TO YOUR NEEDS

Lenovo's flexible warranty options are designed to fit the varying needs within an organization. Match service coverage duration with the expected lifecycle of your PCs.

OFFER DETAILS

- ▶ **Warranty Extensions** extend the term of the base warranty at the same service level, offering longer protection against unexpected repair or replacement costs. They are available for periods of up to five years for Think products and up to three years for Idea / Lenovo branded products.
- ▶ **Warranty Upgrades** enable customers to vary response time and level of service to match critical support needs. These options can be selected at the time of purchase or within the term of initial base warranty coverage. Depending on the initial base warranty of the system, service plans are available with the following service levels:

REPAIR AT LENOVO'S LOCATION

- ▶ **Mail-in** – Parts and labor repair coverage, where the customer is responsible for shipping (including packaging) to authorized warranty provider or repair center¹.
- ▶ **Carry-in** – Parts and labor repair coverage, where the customer is responsible for delivery to authorized warranty provider or repair center. After the product has been repaired or exchanged, it will be made available for collection at the designated Pick-up/Drop-off point (PUDO)¹.
- ▶ **Pick-up & Return Courier Service** – Parts and labor repair coverage, where shipping (including packaging) or delivery to the repair center is paid for by LenovoTM¹.
- ▶ **Expedited Pick-up & Return Courier Service**³ – Parts and labor coverage with expedited turnaround 3 business days.

REPAIR AT CUSTOMER'S LOCATION

- ▶ **On-site** – Parts and labor repair coverage, where labor is provided on-site at the customer's place of business or home. If LenovoTM determines your product problem is covered by the product warranty and cannot be resolved over the telephone, a technician will be dispatched to arrive on-site, typically the next day².
- ▶ **On-site + Technical Install CRU (Customer Replaceable Unit parts)** – With a base warranty, installation of self-service CRUs is typically the customer's responsibility, however with technician-installed CRU service Lenovo's on-site service includes installation of all needed CRUs².

INTERNATIONAL WARRANTY

- ▶ **International Warranty Services** – International Warranty Services (IWS) enables customers who travel with or relocate any IWS eligible LenovoTM product to receive warranty service in any country where that product is sold and serviced. The duration is based upon the originating warranty duration. Included on Think and selected Lenovo / Idea products under the standard warranty terms and conditions⁴.
- ▶ **International Service Entitlement** – The international service entitlement upgrade is purchased in addition to one or more applicable optional services that extends coverage to outside of the user's home country. International service entitlement upgrades are applicable to the following LenovoTM services: Sealed Battery Warranty, Keep Your Drive, Accidental Damage Protection. The service level will be provided at the same level as the user's home country or closest service level available in the outside country⁴.

OTHER WARRANTY UPGRADES

- ▶ **Premier Support** – LenovoTM Premier Support connects your organization directly with Lenovo's advanced technicians, who will provide hardware and software support with unscripted trouble-shooting, end-to-end case and relationship management, and prioritized parts and labor response when required¹.

Lenovo Services

LenovoTM Warranty Services are part of a comprehensive portfolio that supports the entire lifecycle of your PCs. For more information on this, or other service offerings, please contact your Lenovo Sales Representative.

¹] May not be available in all regions. ²] If Lenovo determines your product problem is covered by the product warranty and cannot be resolved over the telephone or through a customer replaceable part, repair will be made on-site. ³] Available for Think branded notebooks and tablets in Austria, Germany, Ireland and United Kingdom. ⁴] Available for Think branded products only. All products and offers are subject to availability. Lenovo reserves the right to alter product offerings and specifications at any time, without notice. Lenovo makes every effort to ensure accuracy of all information but is not liable or responsible for any editorial, photographic or typographic errors. All images are for illustration purposes only. For full Lenovo product, service and warranty specifications visit www.lenovo.com. The following are trademarks or registered trademarks of Lenovo: Lenovo, the Lenovo logo, ThinkPad, For Those Who Do and ThinkPlus. Other company, product and service name may be trademarks or service marks of others. ©2018 Lenovo. All rights reserved.

lenovo® **FOR**
THOSE™
WHO DO.

LENOVO KEEP YOUR DRIVE SERVICE WHEN DATA SECURITY MATTERS TO YOU

KEEP YOUR LENOVO DRIVE AND DATA WITHIN YOUR CUSTODY, IMPROVING SECURITY AND POTENTIALLY ALLEVIATING CIVIL LIABILITY RISKS. LENOVO'S KEEP YOUR DRIVE SERVICE LETS YOU DISPOSE OF BUSINESS DATA ON YOUR TERMS.¹

PREDICTABLE BUDGETS

Provides predictable upfront costs versus finding budget in the event of drive failure.

REGULATORY COMPLIANCE AND PROTECTION

Helps your organisation avoid the legal and monetary repercussions associated with a breach in data security.

DATA REMAINS SECURE

Eliminates the need for tracking failed drives in transit, giving IT staff the time to concentrate on mission-critical business activities.

Keep Your Drive (KYD) is available for all Lenovo ThinkPad®, ThinkCentre®, ThinkStation®, ThinkServer® and ThinkPad Tablet 2 products.

- KYD should be purchased at the time of system purchase
- Coverage continues for the duration of a system's limited warranty, even if the hard disk drive has been replaced
- KYD covers multiple drives in a system and multiple failures
- Both Solid State Drives (SSD) and hard disk drives are covered by KYD. Some models also require an upgrade to On-site service when the SSD is soldered to the system board

Lenovo offers a comprehensive portfolio of services supporting the entire lifecycle of your PC. For more information on Keep Your Drive or any of our service offerings, please call your Lenovo Sales Representative or visit:

AU – www.lenovo.com.au/services 1300 557 073

NZ – www.lenovo.com/nz/services 0800 446 833

Lenovo **Services**

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SEALED BATTERY WARRANTY EXTENSION

Battery availability and health is essential to ensure maximum productivity when and where you need it. Avoid the hassle of dealing with system unavailability and unplanned IT expenses by extending the 1-year base battery warranty on your notebook or tablet up to 3 years.

What`s in it for me?

Sealed Battery Warranty Extension is an extra warranty service offering designed especially for integrated (sealed) battery technology PCs.

Integrated battery is a non-CRU (non-Customer Replaceable Unit). This means the battery replacement involves sending the machine to a repair centre or Onsite servicing by a trained technician.

A one-year base battery warranty is the standard norm regardless of the system`s warranty. A low upfront cost of the Sealed Battery Warranty Extension provides significant savings relative to a non-covered replacement.

The extended battery warranty offers a one-time replacement in case the covered battery fails to meet the minimum performance standards.

The warranty service can be obtained in your country of purchase or abroad (if eligible for International Warranty Service) by calling Lenovo. Seek for local phone numbers here: www.lenovo.com/support/phone.

Special notes

Batteries degrade over time and variables such as temperature, usage and time affect battery life.

Battery health thresholds are determined by Lenovo`s built-in battery diagnostic tool that takes all these factors into consideration:

- "Good" (Green): Battery is OK
- "Fair" (Yellow): Battery is getting weaker due to normal wear
- "Poor" (Red): Battery has an error condition or capacity is lower than normal for its age / cycle count. (Eligible for warranty replacement if in the warranty period)

Sealed Battery Warranty Extension is available for ThinkPad notebooks and tablets with integrated (sealed) battery, as well as for selected Lenovo-branded products.

The battery service period must match the system warranty.

This service only covers internal batteries. External Battery Warranty Extension can be obtained as a separate offering for selected ThinkPad models.

The Lenovo logo, consisting of the word "Lenovo" in white sans-serif font on a red rectangular background.

Connect With Us

Lenovo`s Sealed Battery Warranty Extension is part of a comprehensive portfolio that supports the entire lifecycle of your PCs.

Services

For more information on this, or other service offerings, please contact your Lenovo Sales Representative or visit: www.lenovo.com/services.

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Configuration Summary	01-Mar-24	Lenovo
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Summary

Line NO.	1
CTO	12DMS41E00
Country/Region	US
Product Name	Standard Desktop M70s Gen 4 i5

Product Configuration Details

Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
Preload Language	Windows 11 Pro 64 English
Platform	Small Form Factor 90% Power 260W
Motherboard	RPL Q670
Processor	13th Generation Intel® Core™ i5-13400 Processor (E-cores up to 3.30 GHz P-cores up to 4.60 GHz)
DIMM Memory	16 GB DDR4-3200MHz (UDIMM) - (2 x 8 GB)
Storage Selection	None
Second Storage Selection	None
Third Storage Selection	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal
Fourth Storage Selection	None
Second Hard Drive Bracket	No Second Hard Drive Bracket
Optical Drive	No Optical Drive
Graphics	Integrated Graphics
Flexible I/O Port	No Flexible I/O Port
Graphic Dongle	No Graphic Dongle
Second Graphic Dongle	No Second Graphic Dongle
Third Graphic Dongle	No Third Graphic Dongle
Ethernet	Integrated Ethernet
Internal Speakers	Internal Speaker
Media Card Reader	No Media Card Reader
Smart Cable Clip	No Smart Cable Clip
Chassis E-Lock	No Chassis E-Lock
Vertical Stand	Vertical Stand
Intelligent Cable	No Intelligent Cable
Keyboard	USB, Traditional, Black - English (US)
Mouse	USB Calliope Mouse Black
Default USB Port	1 x USB-C, 4 x Front USB, 4 x Rear USB
Optional USB Port	No Optional USB Port
Second Optional USB	No Second Optional USB Port
Rear Com Port	No Rear Com Port
Second Rear Com Port	No Second Rear Com Port
Parallel Cable	No Parallel Cable
Wireless LAN	No Wireless LAN
Expansion Card	No Expansion Card
Education Sticker	No Education Sticker
Chassis Intrusion Switch	No Chassis Intrusion Switch
PS2 Port Cable	No PS2 Port Cable
TUV Low Noise Certificate	No TUV Low Noise Certificate
Dust Shield	No Dust Shield
EPEAT Gold Certificate	No EPEAT Gold Certificate
Recovery USB	No Recovery USB
CO2 Neutral Label	No CO2 Neutral Label
Publication	Publication - Polish/Portuguese/English
Bulk Package	No Bulk Package
Microsoft Office	No Microsoft Office
Adobe	No Adobe
Adobe Acrobat	No Adobe Acrobat
Security Software	No Security Software
Second Security Software	No Second Security Software
Cloud Security Software	No Cloud Security Software
Microsoft Managed Desktop	No Microsoft Managed Desktop
Absolute BIOS Selection	BIOS Absolute Enabled
ITC Custom Image Type	None
Microsoft Autopilot	NONE

Hard Drive Encryption	NONE
Custom Asset Tag	NONE
Premier Asset Tag	None
BIOS Customization	NONE
vPro Factory Pre-provi	NONE
Digital_Welcome	NONE
Future Services 2	NONE
Future Services 3	NONE
Future Services 4	NONE
ITC Drop in Box	None
Image Management	None
Cloud Recovery	None
Third Security Software	No Third Security Software
Endpoint Management	None
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
Warranty	3 Year On-site
Services	
Part Number	Description

Configuration Summary	01-Mar-24	
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Summary

Line NO.	2
CTO	12DMS41F00
Country/Region	US
Product Name	Standard Desktop M70s Gen 4 i7

Product Configuration Details

Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
Preload Language	Windows 11 Pro 64 English
Platform	Small Form Factor 90% Power 260W
Motherboard	RPL Q670
Processor	13th Generation Intel® Core™ i7-13700 vPro® Processor (E-cores up to 4.10 GHz P-cores up to 5.10 GHz)
DIMM Memory	16 GB DDR4-3200MHz (UDIMM)
Storage Selection	None
Second Storage Select	None
Third Storage Select	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal
Fourth Storage Select	None
Second Hard Drive Br	No Second Hard Drive Bracket
Optical Drive	No Optical Drive
Graphics	Integrated Graphics
Flexible I/O Port	No Flexible I/O Port
Graphic Dongle	No Graphic Dongle
Second Graphic Dongl	No Second Graphic Dongle
Third Graphic Dongle	No Third Graphic Dongle
Ethernet	Integrated Ethernet
Internal Speakers	Internal Speaker
Media Card Reader	No Media Card Reader
Smart Cable Clip	No Smart Cable Clip
Chassis E-Lock	No Chassis E-Lock
Vertical Stand	Vertical Stand
Intelligent Cable	No Intelligent Cable
Keyboard	USB, Traditional, Black - English (US)
Mouse	USB Calliope Mouse Black
Default USB Port	1 x USB-C, 4 x Front USB, 4 x Rear USB
Optional USB Port	No Optional USB Port
Second Optional USB	No Second Optional USB Port
Rear Com Port	No Rear Com Port
Second Rear Com Por	No Second Rear Com Port
Parallel Cable	No Parallel Cable
Wireless LAN	No Wireless LAN
Expansion Card	No Expansion Card
Education Sticker	No Education Sticker
Chassis Intrusion Swit	No Chassis Intrusion Switch
PS2 Port Cable	No PS2 Port Cable
TUV Low Noise Certific	No TUV Low Noise Certificate
Dust Shield	No Dust Shield
EPEAT Gold Certificat	No EPEAT Gold Certificate
Recovery USB	No Recovery USB
CO2 Neutral Label	No CO2 Neutral Label
Publication	Publication - Polish/Portuguese/English
Bulk Package	No Bulk Package
Microsoft Office	No Microsoft Office
Adobe	No Adobe
Adobe Acrobat	No Adobe Acrobat
Security Software	No Security Software
Second Security Softw	No Second Security Software
Cloud Security Softwar	No Cloud Security Software
Microsoft Managed De	No Microsoft Managed Desktop
Absolute BIOS Selecti	BIOS Absolute Enabled
ITC Custom Image Typ	None
Microsoft Autopilot	NONE

Hard Drive Encryption	NONE
Custom Asset Tag	NONE
BIOS Customization	NONE
vPro Factory Pre-provi	NONE
Digital_Welcome	NONE
Future Services 2	NONE
Future Services 3	NONE
Future Services 4	NONE
ITC Drop in Box	None
Image Management	None
Cloud Recovery	None
Third Security Software	No Third Security Software
Endpoint Management	None
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
MANJIMUP_MOTHER	NONE
Warranty	3 Year On-site
Services	
Part Number	Description

Configuration Summary	01-Mar-24	
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Summary

Line NO.	3
CTO	11R7S4BM00
Country/Region	US
Product Name	Standard Desktop M75s AMD R5

Product Configuration Details

Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
Preload Language	Windows 11 Pro 64 English
Platform	Small Form Factor 260W 85% Power Supply
Motherboard	AMD Cezanne Pro 565
Processor	AMD Ryzen™ 5 PRO 5650G Processor (3.90 GHz up to 4.40 GHz)
DIMM Memory	16 GB DDR4-3200MHz (UDIMM) - (2 x 8 GB)
Storage Selection	None
Second Storage Selection	None
Third Storage Selection	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal
Optical Drive	No Optical Drive
Graphics	Integrated Graphics
Graphic Dongle	No Graphic Dongle
Second Graphic Dongle	No Second Graphic Dongle
Ethernet	Integrated Ethernet
Internal Speakers	No Internal Speakers
Media Card Reader	No Media Card Reader
Smart Cable Clip	No Smart Cable Clip
Chassis E-Lock	No Chassis E-Lock
Vertical Stand	Vertical Stand Small Form Factor
Keyboard	USB, Traditional, Black - English (US)
Mouse	USB Calliope Mouse Black
Default USB Port	1 x USB-C, 4 x Front USB, 4 x Rear USB
Optional USB Port	No Optional USB Port
Second Optional USB	No Second Optional USB Port
USB-C Port	No USB-C Port
Second Rear Com Port	No Second Rear Com Port
Parallel Cable	No Parallel Cable
Wireless LAN	No Wireless LAN
Expansion Card	No Expansion Card
Chassis Intrusion Switch	No Chassis Intrusion Switch
TUV Low Noise Certificate	No TUV Low Noise Certificate
EPEAT Gold Certificate	No EPEAT Gold Certificate
Recovery USB	No Recovery USB
Publication	Publication-English
Bulk Package	No Bulk Package
Microsoft Office	No Microsoft Office
Adobe	No Adobe
Adobe Acrobat	No Adobe Acrobat
Security Software	No Security Software
Absolute BIOS Selection	BIOS Absolute Disabled
ITC Custom Image Type	None
Microsoft Autopilot	NONE
Hard Drive Encryption	NONE
Custom Asset Tag	NONE
BIOS Customization	NONE
vPro Factory Pre-provisioning	NONE
Digital Welcome	NONE
Future Services 2	NONE
Future Services 3	NONE
Future Services 4	NONE
ITC Drop in Box	None
Image Management	None
Cloud Recovery	None
Modern Standby	Modern Standby Disabled

Dust Shield	None
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
CO2 Neutral Label	None
DURHAM_MCZOTHEI	NONE
Second Hard Drive Bræ No Second Hard Drive Bracket	
Microsoft Managed De	None
Second Security Softw	None
Cloud Security Softwar	None
Third Security Softwaræ	None
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
Warranty	3 Year On-site
Services	
Part Number	Description

Configuration Summary	01-Mar-24	
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Summary	
Line NO.	4
CTO	11R7S4BN00
Country/Region	US
Product Name	Standard Desktops M75s AMD R7
Product Configuration Details	
Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
Preload Language	Windows 11 Pro 64 English
Platform	Small Form Factor 260W 85% Power Supply
Motherboard	AMD Cezanne Pro 565
Processor	AMD Ryzen™ 7 PRO 5750G Processor (3.80 GHz up to 4.60 GHz)
DIMM Memory	16 GB DDR4-3200MHz (UDIMM) - (2 x 8 GB)
Storage Selection	None
Second Storage Selection	None
Third Storage Selection	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal
Optical Drive	No Optical Drive
Graphics	Integrated Graphics
Graphic Dongle	No Graphic Dongle
Second Graphic Dongle	No Second Graphic Dongle
Ethernet	Integrated Ethernet
Internal Speakers	No Internal Speakers
Media Card Reader	No Media Card Reader
Smart Cable Clip	No Smart Cable Clip
Chassis E-Lock	No Chassis E-Lock
Vertical Stand	Vertical Stand Small Form Factor
Keyboard	USB, Traditional, Black - English (US)
Mouse	USB Calliope Mouse Black
Default USB Port	1 x USB-C, 4 x Front USB, 4 x Rear USB
Optional USB Port	No Optional USB Port
Second Optional USB	No Second Optional USB Port
USB-C Port	No USB-C Port
Second Rear Com Port	No Second Rear Com Port
Parallel Cable	No Parallel Cable
Wireless LAN	No Wireless LAN
Expansion Card	No Expansion Card
Chassis Intrusion Switch	No Chassis Intrusion Switch
TUV Low Noise Certificate	No TUV Low Noise Certificate
EPEAT Gold Certificate	No EPEAT Gold Certificate
Recovery USB	No Recovery USB
Publication	Publication-English
Bulk Package	No Bulk Package
Microsoft Office	No Microsoft Office
Adobe	No Adobe
Adobe Acrobat	No Adobe Acrobat
Security Software	No Security Software
Absolute BIOS Selection	BIOS Absolute Disabled
ITC Custom Image Type	None
Microsoft Autopilot	NONE
Hard Drive Encryption	NONE
Custom Asset Tag	NONE
BIOS Customization	NONE
vPro Factory Pre-provisioning	NONE
Digital Welcome	NONE
Future Services 2	NONE
Future Services 3	NONE
Future Services 4	NONE
ITC Drop in Box	None
Image Management	None
Cloud Recovery	None
Modern Standby	Modern Standby Disabled

Dust Shield	None
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
CO2 Neutral Label	None
DURHAM_MCZOTHEI	NONE
Second Hard Drive Bræ No Second Hard Drive Bracket	
Microsoft Managed De	None
Second Security Softw	None
Cloud Security Softwar	None
Third Security Softwaræ	None
DURHAM_MCZOTHEI	NONE
DURHAM_MCZOTHEI	NONE
Warranty	3 Year On-site
Services	
Part Number	Description

Configuration Summary	01-Mar-24	
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Summary

Line NO.	7
CTO	21H4SB4S00
Country/Region	US
Product Name	Standard Laptop L15 Gen 4 i5

Product Configuration Details

Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
vPro Certified Model	Non vPro
Processor	13th Generation Intel® Core™ i5-1335U Processor (E-cores up to 3.40 GHz P-cores up to 4.60 GHz)
Security Chip Setting	Enabled Discrete TPM2.0
Display	15.6" FHD (1920 x 1080), IPS, Anti-Glare, Non-Touch, 45%NTSC, 250 nits, 60Hz
Graphics	Integrated Intel® Iris® Xe Graphics
Camera	720P HD RGB with Microphone
Fingerprint Reader	No Fingerprint Reader
DIMM Memory	16 GB DDR4-3200MHz (SODIMM) - (2 x 8 GB)
Storage Selection	512 GB SSD M.2 2242 PCIe Gen4 TLC Opal
Wireless LAN	Intel® Wi-Fi 6 AX201 2x2 AX & Bluetooth® 5.1 or above
WWAN Selection	No WWAN
Wireless WAN	No Wireless WAN
WWAN SIM Card	No WWAN SIM Card
NFC	No NFC
System Expansion Slot	No Smart Card Reader
Battery	3 Cell Li-Polymer 46.5Wh
Rapid Charge	Rapid Charge
Power Adapter	65W USB-C Low Cost 90% PCC 2pin AC Adapter - US
Keyboard	Backlit, Black with Number Pad - English (US)
Publication	Publication - Polish/Portuguese/English
OS DPK	W11 Pro
Preload Language	Windows 11 Pro 64 English
System Unit	L15G4 i5-1335U IG
Display Shell	15.6" FHD (1920 x 1080), IPS, Anti-Glare, Non-Touch, 45%NTSC, 250 nits, 60Hz, 720P HD RGB with Dual Array
Pointing Device	No NFC, Integrated Graphics Card, No WWAN
Package Box Type	Single Standard Packaging
Graphic Dongle	No Graphic Dongle
Adobe Elements	None
Adobe Creative Cloud	None
Adobe Acrobat	None
Microsoft Office	None
Security Software	None
Cloud Security Software	No Cloud Security Software
Second Security Software	No Second Security Software
Third Security Software	None
Keyboard Patch	None
ProvisionNow	None
Microsoft 4KHH Repor	None
Digital Welcome	None
Absolute BIOS Selectio	BIOS Absolute Enabled
Microsoft Autopilot	None
CO2 Offset Label	No CO2 Offset Label
Custom Image Type	None
Image Management	None
Cloud Recovery	None
Hard Drive Encryption	None
Custom Asset Tag	None
Drop In Box	None
BIOS Customization	None
vPro Factory Pre-provi	None
Transparent Supply Ch	Transparent Supply Chain
Future Services 4	None
Endpoint Management	No Endpoint Management

Common2 2023	None
Common3 2023	None
Common4 2023	None
Common5 2023	None
L15G4 Others1	None
L15G4 Others2	None
L15G4 Others3	None
L15G4 Others4	None
L15G4 Others5	None
Ethernet	Wired Ethernet
Warranty	3 Year Courier or Carry-in

Services	
Part Number	Description
5WS0A23006	3Y Onsite upgrade from 3Y Courier/Carry-in

Configuration Summary	01-Mar-24	
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Summary

Line NO.	9
CTO	21H4SB4Q00
Country/Region	US
Product Name	LTE Standard Laptop L15 Gen 4 i5

Product Configuration Details

Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
vPro Certified Model	Non vPro
Processor	13th Generation Intel® Core™ i5-1335U Processor (E-cores up to 3.40 GHz P-cores up to 4.60 GHz)
Security Chip Setting	Enabled Discrete TPM2.0
Display	15.6" FHD (1920 x 1080), IPS, Anti-Glare, Non-Touch, 45%NTSC, 250 nits, 60Hz
Graphics	Integrated Intel® Iris® Xe Graphics
Camera	1080P FHD RGB with Microphone
Fingerprint Reader	No Fingerprint Reader
DIMM Memory	16 GB DDR4-3200MHz (SODIMM) - (2 x 8 GB)
Storage Selection	512 GB SSD M.2 2242 PCIe Gen4 TLC Opal
Wireless LAN	Intel® Wi-Fi 6 AX201 2x2 AX & Bluetooth® 5.1 or above
WWAN Selection	WWAN
Wireless WAN	Fibocom L860-GL-16 4G LTE CAT16
WWAN SIM Card	No WWAN SIM Card
NFC	No NFC
System Expansion Slot	No Smart Card Reader
Battery	3 Cell Li-Polymer 46.5Wh
Rapid Charge	Rapid Charge
Power Adapter	65W USB-C Low Cost 90% PCC 2pin AC Adapter - US
Keyboard	Backlit, Black with Number Pad - English (US)
Publication	Publication - Polish/Portuguese/English
OS DPK	W11 Pro
Preload Language	Windows 11 Pro 64 English
System Unit	L15G4 i5-1335U IG
Display Shell	15.6" FHD (1920 x 1080), IPS, Anti-Glare, Non-Touch, 45%NTSC, 250 nits, 60Hz, 1080P FHD with Dual array di
Pointing Device	No NFC, Integrated Graphics Card, WWAN
Package Box Type	Single Standard Packaging
Graphic Dongle	No Graphic Dongle
Adobe Elements	None
Adobe Creative Cloud	None
Adobe Acrobat	None
Microsoft Office	None
Security Software	None
Cloud Security Software	No Cloud Security Software
Second Security Software	No Second Security Software
Third Security Software	None
Keyboard Patch	None
ProvisionNow	None
Microsoft 4KHH Repor	None
Digital Welcome	None
Absolute BIOS Selectio	BIOS Absolute Enabled
Microsoft Autopilot	None
CO2 Offset Label	No CO2 Offset Label
Custom Image Type	None
Image Management	None
Cloud Recovery	None
Hard Drive Encryption	None
Custom Asset Tag	None
Drop In Box	None
BIOS Customization	None
vPro Factory Pre-provi	None
Transparent Supply Ch	Transparent Supply Chain
Future Services 4	None
Endpoint Management	No Endpoint Management

Common2 2023	None
Common3 2023	None
Common4 2023	None
Common5 2023	None
L15G4 Others1	None
L15G4 Others2	None
L15G4 Others3	None
L15G4 Others4	None
L15G4 Others5	None
Ethernet	Wired Ethernet
Warranty	3 Year Courier or Carry-in

Services	
Part Number	Description

5WS0A23006	3Y Onsite upgrade from 3Y Courier/Carry-in
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Configuration Summary	01-Mar-24	
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Summary

Line NO.	11
CTO	21H4SB4R00
Country/Region	US
Product Name	Standard Laptop L15 Gen 4 i7 Intel

Product Configuration Details

Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
vPro Certified Model	Non vPro
Processor	13th Generation Intel® Core™ i7-1355U Processor (E-cores up to 3.70 GHz P-cores up to 5.00 GHz)
Security Chip Setting	Enabled Discrete TPM2.0
Display	15.6" FHD (1920 x 1080), IPS, Anti-Glare, Non-Touch, 45%NTSC, 250 nits, 60Hz
Graphics	Integrated Intel® Iris® Xe Graphics
Camera	720P HD RGB with Microphone
Fingerprint Reader	No Fingerprint Reader
DIMM Memory	16 GB DDR4-3200MHz (SODIMM) - (2 x 8 GB)
Storage Selection	512 GB SSD M.2 2242 PCIe Gen4 TLC Opal
Wireless LAN	Intel® Wi-Fi 6 AX201 2x2 AX & Bluetooth® 5.1 or above
WWAN Selection	No WWAN
Wireless WAN	No Wireless WAN
WWAN SIM Card	No WWAN SIM Card
NFC	No NFC
System Expansion Slot	No Smart Card Reader
Battery	3 Cell Li-Polymer 46.5Wh
Rapid Charge	Rapid Charge
Power Adapter	65W USB-C Low Cost 90% PCC 2pin AC Adapter - US
Keyboard	Backlit, Black with Number Pad - English (US)
Publication	Publication - Polish/Portuguese/English
OS DPK	W11 Pro
Preload Language	Windows 11 Pro 64 English
System Unit	L15G4 i7-1355U IG
Display Shell	15.6" FHD (1920 x 1080), IPS, Anti-Glare, Non-Touch, 45%NTSC, 250 nits, 60Hz, 720P HD RGB with Dual Array
Pointing Device	No NFC, Integrated Graphics Card, No WWAN
Package Box Type	Single Standard Packaging
Graphic Dongle	No Graphic Dongle
Adobe Elements	None
Adobe Creative Cloud	None
Adobe Acrobat	None
Microsoft Office	None
Security Software	None
Cloud Security Software	No Cloud Security Software
Second Security Software	No Second Security Software
Third Security Software	None
Keyboard Patch	None
ProvisionNow	None
Microsoft 4KHH Repor	None
Digital Welcome	None
Absolute BIOS Selectio	BIOS Absolute Enabled
Microsoft Autopilot	None
CO2 Offset Label	No CO2 Offset Label
Custom Image Type	None
Image Management	None
Cloud Recovery	None
Hard Drive Encryption	None
Custom Asset Tag	None
Drop In Box	None
BIOS Customization	None
vPro Factory Pre-provi	None
Transparent Supply Ch	Transparent Supply Chain
Future Services 4	None
Endpoint Management	No Endpoint Management

Common2 2023	None
Common3 2023	None
Common4 2023	None
Common5 2023	None
L15G4 Others1	None
L15G4 Others2	None
L15G4 Others3	None
L15G4 Others4	None
L15G4 Others5	None
Ethernet	Wired Ethernet
Warranty	3 Year Courier or Carry-in

Services	
Part Number	Description

5WS0A23006	3Y Onsite upgrade from 3Y Courier/Carry-in
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Configuration Summary	01-Mar-24	
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Summary

Line NO.	13
CTO	21H8S3EB00
Country/Region	US
Product Name	Standard Laptop L15 Gen 4 R5 AMD

Product Configuration Details

Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
Dash Manageability	Dash Manageability
Ethernet	Wired Ethernet
Processor	AMD Ryzen™ 5 PRO 7530U Processor (2.00 GHz up to 4.50 GHz)
Security Chip Setting	Enabled Discrete TPM2.0
Display	15.6" FHD (1920 x 1080), IPS, Anti-Glare, Non-Touch, 45%NTSC, 250 nits, 60Hz
Graphics	Integrated Graphics
Camera	720P HD RGB with Microphone
Fingerprint Reader	No Fingerprint Reader
DIMM Memory	16 GB DDR4-3200MHz (SODIMM)
Storage Selection	512 GB SSD M.2 2242 PCIe Gen4 TLC Opal
Wireless LAN	Wi-Fi 6E RZ616 2x2 AX & Bluetooth® 5.1 or above
WWAN Selection	No WWAN
Wireless WAN	No Wireless WAN
WWAN SIM Card	No WWAN SIM Card
NFC	No NFC
System Expansion Slot	No Smart Card Reader
Battery	3 Cell Li-Polymer 46.5Wh
Rapid Charge	Rapid Charge
Power Adapter	65W USB-C Low Cost 90% PCC 2pin AC Adapter - US
Keyboard	Backlit, Black with Number Pad - English (US)
Publication	Publication - Polish/Portuguese/English
OS DPK	W11 Pro
Preload Language	Windows 11 Pro 64 English
System Unit	L15G4 AMD R5 PRO 7530U IG PL
Display Shell	15.6" FHD (1920 x 1080), IPS, Anti-Glare, Non-Touch, 45%NTSC, 250 nits, 60Hz, 720P HD RGB with Integrated
Pointing Device	ClickPad, No NFC
Package Box Type	Single Standard Packaging
Graphic Dongle	No Graphic Dongle
Adobe Elements	None
Adobe Creative Cloud	None
Adobe Acrobat	None
Microsoft Office	None
Security Software	None
Cloud Security Software	No Cloud Security Software
Second Security Software	No Second Security Software
Third Security Software	None
Keyboard Patch	None
ProvisionNow	None
Microsoft 4KHH Repor	None
Absolute BIOS Selectio	BIOS Absolute Enabled
Microsoft Autopilot	None
CO2 Offset Label	No CO2 Offset Label
Custom Image Type	None
Image Management	None
Cloud Recovery	None
Hard Drive Encryption	None
Custom Asset Tag	None
Premier Asset Tag	None
Drop In Box	None
BIOS Customization	None
vPro Factory Pre-provi	None
Trusted Supply Chain	Trusted Supply Chain
Digital Welcome	None

Future Services 4	None
Endpoint Management	No Endpoint Management
Common2 2023	None
Common3 2023	None
Common4 2023	None
Common5 2023	None
L15G4 AMD Others1	None
L15G4 AMD Others2	None
L15G4 AMD Others3	None
L15G4 AMD Others4	None
L15G4 AMD Others5	None
Warranty	3 Year Courier or Carry-in
Services	
Part Number	Description
5WS0A23006	3Y Onsite upgrade from 3Y Courier/Carry-in

Configuration Summary	01-Mar-24	
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Summary

Line NO.	15
CTO	21H8S3E900
Country/Region	US
Product Name	LTE Standard Laptop L15 Gen 4 R5 AMD

Product Configuration Details

Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
Dash Manageability	Dash Manageability
Ethernet	Wired Ethernet
Processor	AMD Ryzen™ 5 PRO 7530U Processor (2.00 GHz up to 4.50 GHz)
Security Chip Setting	Enabled Discrete TPM2.0
Display	15.6" FHD (1920 x 1080), IPS, Anti-Glare, Non-Touch, 45%NTSC, 250 nits, 60Hz
Graphics	Integrated Graphics
Camera	1080P FHD RGB with Microphone
Fingerprint Reader	No Fingerprint Reader
DIMM Memory	16 GB DDR4-3200MHz (SODIMM)
Storage Selection	512 GB SSD M.2 2242 PCIe Gen4 TLC Opal
Wireless LAN	Wi-Fi 6E RZ616 2x2 AX & Bluetooth® 5.1 or above
WWAN Selection	WWAN
Wireless WAN	Fibocom L860-GL-16 4G LTE CAT16
WWAN SIM Card	No WWAN SIM Card
NFC	No NFC
System Expansion Slot	No Smart Card Reader
Battery	3 Cell Li-Polymer 46.5Wh
Rapid Charge	Rapid Charge
Power Adapter	65W USB-C Low Cost 90% PCC 2pin AC Adapter - US
Keyboard	Backlit, Black with Number Pad - English (US)
Publication	Publication - Polish/Portuguese/English
OS DPK	W11 Pro
Preload Language	Windows 11 Pro 64 English
System Unit	L15G4 AMD R5 PRO 7530U IG PL
Display Shell	15.6" FHD (1920 x 1080), IPS, Anti-Glare, Non-Touch, 45%NTSC, 250 nits, 60Hz, 1080P FHD with Integrated M
Pointing Device	ClickPad, No NFC
Package Box Type	Single Standard Packaging
Graphic Dongle	No Graphic Dongle
Adobe Elements	None
Adobe Creative Cloud	None
Adobe Acrobat	None
Microsoft Office	None
Security Software	None
Cloud Security Software	No Cloud Security Software
Second Security Software	No Second Security Software
Third Security Software	None
Keyboard Patch	None
ProvisionNow	None
Microsoft 4KHH Repor	None
Absolute BIOS Selectio	BIOS Absolute Enabled
Microsoft Autopilot	None
CO2 Offset Label	No CO2 Offset Label
Custom Image Type	None
Image Management	None
Cloud Recovery	None
Hard Drive Encryption	None
Custom Asset Tag	None
Premier Asset Tag	None
Drop In Box	None
BIOS Customization	None
vPro Factory Pre-provi	None
Trusted Supply Chain	Trusted Supply Chain
Digital Welcome	None

Future Services 4	None
Endpoint Management	No Endpoint Management
Common2 2023	None
Common3 2023	None
Common4 2023	None
Common5 2023	None
L15G4 AMD Others1	None
L15G4 AMD Others2	None
L15G4 AMD Others3	None
L15G4 AMD Others4	None
L15G4 AMD Others5	None
Warranty	3 Year Courier or Carry-in
Services	
Part Number	Description
5WS0A23006	3Y Onsite upgrade from 3Y Courier/Carry-in

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Summary

Line NO.	17
CTO	21H8S3EA00
Country/Region	US
Product Name	Standard Laptop L15 Gen 4 R7 AMD

Product Configuration Details

Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
Dash Manageability	Dash Manageability
Ethernet	Wired Ethernet
Processor	AMD Ryzen™ 7 PRO 7730U Processor (2.00 GHz up to 4.50 GHz)
Security Chip Setting	Enabled Discrete TPM2.0
Display	15.6" FHD (1920 x 1080), IPS, Anti-Glare, Non-Touch, 45%NTSC, 250 nits, 60Hz
Graphics	Integrated Graphics
Camera	720P HD RGB with Microphone
Fingerprint Reader	No Fingerprint Reader
DIMM Memory	16 GB DDR4-3200MHz (SODIMM)
Storage Selection	512 GB SSD M.2 2242 PCIe Gen4 TLC Opal
Wireless LAN	Wi-Fi 6E RZ616 2x2 AX & Bluetooth® 5.1 or above
WWAN Selection	No WWAN
Wireless WAN	No Wireless WAN
WWAN SIM Card	No WWAN SIM Card
NFC	No NFC
System Expansion Slot	No Smart Card Reader
Battery	3 Cell Li-Polymer 46.5Wh
Rapid Charge	Rapid Charge
Power Adapter	65W USB-C Low Cost 90% PCC 2pin AC Adapter - US
Keyboard	Backlit, Black with Number Pad - English (US)
Publication	Publication - Polish/Portuguese/English
OS DPK	W11 Pro
Preload Language	Windows 11 Pro 64 English
System Unit	L15G4 AMD R7 PRO 7730U IG PL
Display Shell	15.6" FHD (1920 x 1080), IPS, Anti-Glare, Non-Touch, 45%NTSC, 250 nits, 60Hz, 720P HD RGB with Integrated
Pointing Device	ClickPad, No NFC
Package Box Type	Single Standard Packaging
Graphic Dongle	No Graphic Dongle
Adobe Elements	None
Adobe Creative Cloud	None
Adobe Acrobat	None
Microsoft Office	None
Security Software	None
Cloud Security Software	No Cloud Security Software
Second Security Software	No Second Security Software
Third Security Software	None
Keyboard Patch	None
ProvisionNow	None
Microsoft 4KHH Repor	None
Absolute BIOS Selectio	BIOS Absolute Enabled
Microsoft Autopilot	None
CO2 Offset Label	No CO2 Offset Label
Custom Image Type	None
Image Management	None
Cloud Recovery	None
Hard Drive Encryption	None
Custom Asset Tag	None
Drop In Box	None
BIOS Customization	None
vPro Factory Pre-provi	None
Trusted Supply Chain	Trusted Supply Chain
Digital Welcome	None
Future Services 4	None

Endpoint Management No Endpoint Management	
Common2 2023	None
Common3 2023	None
Common4 2023	None
Common5 2023	None
L15G4 AMD Others1	None
L15G4 AMD Others2	None
L15G4 AMD Others3	None
L15G4 AMD Others4	None
L15G4 AMD Others5	None
Warranty	3 Year Courier or Carry-in
Services	
Part Number	Description
5WS0A23006	3Y Onsite upgrade from 3Y Courier/Carry-in

Configuration Summary	01-Mar-24	Lenovo
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Summary

Line NO.	19
CTO	21FKS4RW00
Country/Region	US
Product Name	Conversion Laptop i5 Intel L13 Yoga Gen 4

Product Configuration Details

Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
vPro Certified Model	Non vPro
Processor	13th Generation Intel® Core™ i5-1335U Processor (E-cores up to 3.40 GHz P-cores up to 4.60 GHz)
Security Chip Setting	Enabled Discrete TPM2.0
Color	Black
Ethernet	No Wired Ethernet
Display	13.3" WUXGA (1920 x 1200), IPS, Anti-Reflection, Anti-Smudge, Touch, 100%sRGB, 300 nits, 60Hz
Camera	720P HD RGB with Microphone
Second Camera	No Second Camera
Fingerprint Reader	No Fingerprint Reader
Onboard Memory	16 GB LPDDR5-6400MHz (Soldered)
Storage Selection	512 GB SSD M.2 2242 PCIe Gen4 TLC Opal
Wireless LAN	Intel® Wi-Fi 6 AX201 2x2 AX & Bluetooth® 5.1 or above
WWAN Selection	No WWAN
Wireless WAN	No Wireless WAN
WWAN SIM Card	No WWAN SIM Card
NFC	No NFC
System Expansion Slot	No Smart Card Reader BK
Battery	4 Cell Li-Polymer 46Wh
Power Adapter	65W USB-C Low Cost 90% PCC 2pin AC Adapter - US
Keyboard	Backlit, Black - English (US)
Publication	Publication - Polish/Portuguese/English
OS DPK	W11 Pro
Preload Language	Windows 11 Pro 64 English
System Unit	L13G4&S2G8 i5-1335U+16G+201 NE
Display Shell	13.3" WUXGA (1920 x 1200), IPS, Anti-Reflective, Anti-Smudge, Touch, 100%sRGB, 300 nits, 60Hz, 720P HD F
Pointing Device	No NFC, No World Facing Camera
Package Box Type	Single Standard Packaging
Graphic Dongle	No Graphic Dongle
Graphic Dongle 2	No Graphic Dongle
Ethernet Dongle	USB-C to RJ45
USB Cable	No USB Cable
USB Cable 2	No USB Cable
Lenovo Pen	Lenovo Integrated Pen
Adobe Elements	None
Adobe Creative Cloud	None
Adobe Acrobat	None
Microsoft Office	None
Security Software	None
Cloud Security Softwar	No Cloud Security Software
Second Security Softw	No Second Security Software
Third Security Software	None
Keyboard Patch	None
ProvisionNow	None
Microsoft 4KHH Repor	None
Absolute BIOS Selecti	BIOS Absolute Enabled
Microsoft Autopilot	None
CO2 Offset Label	No CO2 Offset Label
Custom Image Type	None
Image Management	None
Cloud Recovery	None
Hard Drive Encryption	None
Custom Asset Tag	None
Premier Asset Tag	None

Drop In Box	None
BIOS Customization	None
vPro Factory Pre-provi	None
Transparent Supply Ch	Transparent Supply Chain
Digital Welcome	None
Future Services 4	None
Endpoint Management	No Endpoint Management
Common2 2023	None
Common3 2023	None
Common4 2023	None
Common5 2023	None
NBL13G4 S2G8 Other	None
NBL13G4 S2G8 Other	None
NBL13G4 S2G8 Other	None
NBL13G4 S2G8 Other	None
NBL13G4 S2G8 Other	None
NBL13 Y G4 Others1	None
NBL13 Y G4 Others2	None
NBL13 Y G4 Others3	None
NBL13 Y G4 Others4	None
NBL13 Y G4 Others5	None
Graphics	Integrated Intel® Iris® Xe Graphics
Warranty	3 Year Courier or Carry-in

Services

Part Number	Description
5WS0A23006	3Y Onsite upgrade from 3Y Courier/Carry-in

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Summary

Line NO.	21
CTO	21FKS4RX00
Country/Region	US
Product Name	LTE Conversion Laptop i5 Intel L13 Yoga Gen 4

Product Configuration Details

Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
vPro Certified Model	Non vPro
Processor	13th Generation Intel® Core™ i5-1335U Processor (E-cores up to 3.40 GHz P-cores up to 4.60 GHz)
Security Chip Setting	Enabled Discrete TPM2.0
Color	Black
Ethernet	No Wired Ethernet
Display	13.3" WUXGA (1920 x 1200), IPS, Anti-Reflection, Anti-Smudge, Touch, 100%sRGB, 300 nits, 60Hz
Camera	720P HD RGB with Microphone
Second Camera	No Second Camera
Fingerprint Reader	No Fingerprint Reader
Onboard Memory	16 GB LPDDR5-6400MHz (Soldered)
Storage Selection	512 GB SSD M.2 2242 PCIe Gen4 TLC Opal
Wireless LAN	Intel® Wi-Fi 6 AX201 2x2 AX & Bluetooth® 5.1 or above
WWAN Selection	WWAN
Wireless WAN	Fibocom L860-GL-16 4G LTE CAT16
WWAN SIM Card	No WWAN SIM Card
NFC	No NFC
System Expansion Slot	No Smart Card Reader BK
Battery	4 Cell Li-Polymer 46Wh
Power Adapter	65W USB-C Low Cost 90% PCC 2pin AC Adapter - US
Keyboard	Backlit, Black - English (US)
Publication	Publication - Polish/Portuguese/English
OS DPK	W11 Pro
Preload Language	Windows 11 Pro 64 English
System Unit	L13G4&S2G8 i5-1335U+16G+201 NE
Display Shell	13.3" WUXGA (1920 x 1200), IPS, Anti-Reflective, Anti-Smudge, Touch, 100%sRGB, 300 nits, 60Hz, 720P HD F
Pointing Device	No NFC, No World Facing Camera
Package Box Type	Single Standard Packaging
Graphic Dongle	No Graphic Dongle
Graphic Dongle 2	No Graphic Dongle
Ethernet Dongle	USB-C to RJ45
USB Cable	No USB Cable
USB Cable 2	No USB Cable
Lenovo Pen	Lenovo Integrated Pen
Adobe Elements	None
Adobe Creative Cloud	None
Adobe Acrobat	None
Microsoft Office	None
Security Software	None
Cloud Security Software	No Cloud Security Software
Second Security Software	No Second Security Software
Third Security Software	None
Keyboard Patch	None
ProvisionNow	None
Microsoft 4KHH Repor	None
Absolute BIOS Select	BIOS Absolute Enabled
Microsoft Autopilot	None
CO2 Offset Label	No CO2 Offset Label
Custom Image Type	None
Image Management	None
Cloud Recovery	None
Hard Drive Encryption	None
Custom Asset Tag	None
Premier Asset Tag	None

Drop In Box	None
BIOS Customization	None
vPro Factory Pre-provi	None
Transparent Supply Ch	Transparent Supply Chain
Digital Welcome	None
Future Services 4	None
Endpoint Management	No Endpoint Management
Common2 2023	None
Common3 2023	None
Common4 2023	None
Common5 2023	None
NBL13G4 S2G8 Other	None
NBL13G4 S2G8 Other	None
NBL13G4 S2G8 Other	None
NBL13G4 S2G8 Other	None
NBL13G4 S2G8 Other	None
NBL13 Y G4 Others1	None
NBL13 Y G4 Others2	None
NBL13 Y G4 Others3	None
NBL13 Y G4 Others4	None
NBL13 Y G4 Others5	None
Graphics	Integrated Intel® Iris® Xe Graphics
Warranty	3 Year Courier or Carry-in

Services

Part Number	Description
5WS0A23006	3Y Onsite upgrade from 3Y Courier/Carry-in

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Summary

Line NO.	23
CTO	21FKS4RV00
Country/Region	US
Product Name	Conversion Laptop i7 Intel L13 Yoga Gen 4

Product Configuration Details

Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
vPro Certified Model	vPro Enterprise
Processor	13th Generation Intel® Core™ i7-1365U vPro® Processor (E-cores up to 3.90 GHz P-cores up to 5.20 GHz)
Security Chip Setting	Enabled Discrete TPM2.0
Color	Black
Ethernet	No Wired Ethernet
Display	13.3" WUXGA (1920 x 1200), IPS, Anti-Reflection, Anti-Smudge, Touch, 100%sRGB, 300 nits, 60Hz
Camera	720P HD RGB with Microphone
Second Camera	No Second Camera
Fingerprint Reader	No Fingerprint Reader
Onboard Memory	16 GB LPDDR5-6400MHz (Soldered)
Storage Selection	512 GB SSD M.2 2242 PCIe Gen4 TLC Opal
Wireless LAN	Intel® Wi-Fi 6E AX211 2x2 AX vPro® & Bluetooth® 5.1 or above
WWAN Selection	No WWAN
Wireless WAN	No Wireless WAN
WWAN SIM Card	No WWAN SIM Card
NFC	No NFC
System Expansion Slot	No Smart Card Reader BK
Battery	4 Cell Li-Polymer 46Wh
Power Adapter	65W USB-C Low Cost 90% PCC 2pin AC Adapter - US
Keyboard	Backlit, Black - English (US)
Publication	Publication - Polish/Portuguese/English
OS DPK	W11 Pro
Preload Language	Windows 11 Pro 64 English
System Unit	L13G4S2G8 i7-1365UVP+16G+211NE
Display Shell	13.3" WUXGA (1920 x 1200), IPS, Anti-Reflective, Anti-Smudge, Touch, 100%sRGB, 300 nits, 60Hz, 720P HD F
Pointing Device	No NFC, No World Facing Camera
Package Box Type	Single Standard Packaging
Graphic Dongle	No Graphic Dongle
Graphic Dongle 2	No Graphic Dongle
Ethernet Dongle	USB-C to RJ45
USB Cable	No USB Cable
USB Cable 2	No USB Cable
Lenovo Pen	Lenovo Integrated Pen
Adobe Elements	None
Adobe Creative Cloud	None
Adobe Acrobat	None
Microsoft Office	None
Security Software	None
Cloud Security Software	No Cloud Security Software
Second Security Software	No Second Security Software
Third Security Software	None
Keyboard Patch	None
ProvisionNow	None
Microsoft 4KHH Repor	None
Absolute BIOS Selectio	BIOS Absolute Enabled
Microsoft Autopilot	None
CO2 Offset Label	No CO2 Offset Label
Custom Image Type	None
Image Management	None
Cloud Recovery	None
Hard Drive Encryption	None
Custom Asset Tag	None
Drop In Box	None

BIOS Customization	None
vPro Factory Pre-provi	None
Transparent Supply Ch	Transparent Supply Chain
Digital Welcome	None
Future Services 4	None
Endpoint Management	No Endpoint Management
Common2 2023	None
Common3 2023	None
Common4 2023	None
Common5 2023	None
NBL13G4 S2G8 Other	None
NBL13G4 S2G8 Other	None
NBL13G4 S2G8 Other	None
NBL13G4 S2G8 Other	None
NBL13G4 S2G8 Other	None
NBL13 Y G4 Others1	None
NBL13 Y G4 Others2	None
NBL13 Y G4 Others3	None
NBL13 Y G4 Others4	None
NBL13 Y G4 Others5	None
Graphics	Integrated Intel® Iris® Xe Graphics
Warranty	3 Year Courier or Carry-in
Services	
Part Number	Description
5WS0A23006	3Y Onsite upgrade from 3Y Courier/Carry-in

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Summary

Line NO.	25
CTO	21FSS1WM00
Country/Region	US
Product Name	Conversion Laptop R5 L13 Yoga Gen4 AMD

Product Configuration Details

Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
Dash Manageability	Dash Manageability
Processor	AMD Ryzen™ 5 PRO 7530U Processor (2.00 GHz up to 4.50 GHz)
Security Chip Setting	Enabled Discrete TPM2.0
Color	Black
Display	13.3" WUXGA (1920 x 1200), IPS, Anti-Reflection, Anti-Smudge, Touch, 100%sRGB, 300 nits, 60Hz
Graphics	Integrated Graphics
Camera	720P HD RGB with Microphone
Second Camera	No Second Camera
Fingerprint Reader	No Fingerprint Reader
Onboard Memory	16 GB DDR4-3200MHz (Soldered)
Storage Selection	512 GB SSD M.2 2242 PCIe Gen4 TLC Opal
Wireless LAN	Wi-Fi 6E RZ616 2x2 AX & Bluetooth® 5.1 or above
WWAN Selection	No WWAN
Wireless WAN	No Wireless WAN
WWAN SIM Card	No WWAN SIM Card
NFC	No NFC
System Expansion Slot	No Smart Card Reader BK
Battery	4 Cell Li-Polymer 46Wh
Power Adapter	65W USB-C Low Cost 90% PCC 2pin AC Adapter - US
Keyboard	Backlit, Black - English (US)
Publication	Publication - Polish/Portuguese/English
OS DPK	W11 Pro
Preload Language	Windows 11 Pro 64 English
System Unit	L13G4S2G8 R5PRO7530U+16G+616NE
Display Shell	13.3" WUXGA (1920 x 1200), IPS, Anti-Reflective, Anti-Smudge, Touch, 100%sRGB, 300 nits, 60Hz, 720P HD v
Pointing Device	No NFC, No World Facing Camera
Adobe Elements	None
Package Box Type	Single Standard Packaging
Adobe Creative Cloud	None
Adobe Acrobat	None
Microsoft Office	None
Graphic Dongle	No Graphic Dongle
Graphic Dongle 2	No Graphic Dongle
Ethernet Dongle	USB-C to RJ45
USB Cable	No USB Cable
USB Cable 2	No USB Cable
Lenovo Pen	Lenovo Integrated Pen
Security Software	None
Cloud Security Softwar	No Cloud Security Software
Second Security Softw	No Second Security Software
Third Security Software	None
Keyboard Patch	None
ProvisionNow	None
Microsoft 4KHH Repor	None
Absolute BIOS Selecti	BIOS Absolute Enabled
Microsoft Autopilot	None
CO2 Offset Label	No CO2 Offset Label
Custom Image Type	None
Image Management	None
Cloud Recovery	None
Hard Drive Encryption	None
Custom Asset Tag	None
Premier Asset Tag	None

Drop In Box	None
BIOS Customization	None
vPro Factory Pre-provi	None
Trusted Supply Chain	Trusted Supply Chain
Digital Welcome	None
Future Services 4	None
Endpoint Management	No Endpoint Management
Common2 2023	None
Common3 2023	None
Common4 2023	None
Common5 2023	None
L13G4 S2G8 AMD Oth	None
L13G4 S2G8 AMD Oth	None
L13G4 S2G8 AMD Oth	None
L13G4 S2G8 AMD Oth	None
L13G4 S2G8 AMD Oth	None
L13Y G4 AMD Others1	None
L13Y G4 AMD Others2	None
L13Y G4 AMD Others3	None
L13Y G4 AMD Others4	None
L13Y G4 AMD Others5	None
Ethernet	No Wired Ethernet
Warranty	3 Year Courier or Carry-in

Services

Part Number	Description
5WS0A23006	3Y Onsite upgrade from 3Y Courier/Carry-in

Configuration Summary	01-Mar-24	
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Summary

Line NO.	27
CTO	21FSS1WN00
Country/Region	US
Product Name	LTE Conversion Laptop R5 L13 Yoga Gen4 AMD

Product Configuration Details

Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
Dash Manageability	Dash Manageability
Processor	AMD Ryzen™ 5 PRO 7530U Processor (2.00 GHz up to 4.50 GHz)
Security Chip Setting	Enabled Discrete TPM2.0
Color	Black
Display	13.3" WUXGA (1920 x 1200), IPS, Anti-Reflection, Anti-Smudge, Touch, 100%sRGB, 300 nits, 60Hz
Graphics	Integrated Graphics
Camera	720P HD RGB with Microphone
Second Camera	No Second Camera
Fingerprint Reader	No Fingerprint Reader
Onboard Memory	16 GB DDR4-3200MHz (Soldered)
Storage Selection	512 GB SSD M.2 2242 PCIe Gen4 TLC Opal
Wireless LAN	Wi-Fi 6E RZ616 2x2 AX & Bluetooth® 5.1 or above
WWAN Selection	WWAN
Wireless WAN	Fibocom L860-GL-16 4G LTE CAT16
WWAN SIM Card	No WWAN SIM Card
NFC	No NFC
System Expansion Slot	No Smart Card Reader BK
Battery	4 Cell Li-Polymer 46Wh
Power Adapter	65W USB-C Low Cost 90% PCC 2pin AC Adapter - US
Keyboard	Backlit, Black - English (US)
Publication	Publication - Polish/Portuguese/English
OS DPK	W11 Pro
Preload Language	Windows 11 Pro 64 English
System Unit	L13G4S2G8 R5PRO7530U+16G+616NE
Display Shell	13.3" WUXGA (1920 x 1200), IPS, Anti-Reflective, Anti-Smudge, Touch, 100%sRGB, 300 nits, 60Hz, 720P HD v
Pointing Device	No NFC, No World Facing Camera
Adobe Elements	None
Package Box Type	Single Standard Packaging
Adobe Creative Cloud	None
Adobe Acrobat	None
Microsoft Office	None
Graphic Dongle	No Graphic Dongle
Graphic Dongle 2	No Graphic Dongle
Ethernet Dongle	USB-C to RJ45
USB Cable	No USB Cable
USB Cable 2	No USB Cable
Lenovo Pen	Lenovo Integrated Pen
Security Software	None
Cloud Security Softwar	No Cloud Security Software
Second Security Softw	No Second Security Software
Third Security Software	None
Keyboard Patch	None
ProvisionNow	None
Microsoft 4KHH Repor	None
Absolute BIOS Selecti	BIOS Absolute Enabled
Microsoft Autopilot	None
CO2 Offset Label	No CO2 Offset Label
Custom Image Type	None
Image Management	None
Cloud Recovery	None
Hard Drive Encryption	None
Custom Asset Tag	None
Premier Asset Tag	None

Drop In Box	None
BIOS Customization	None
vPro Factory Pre-provi	None
Trusted Supply Chain	Trusted Supply Chain
Digital Welcome	None
Future Services 4	None
Endpoint Management	No Endpoint Management
Common2 2023	None
Common3 2023	None
Common4 2023	None
Common5 2023	None
L13G4 S2G8 AMD Oth	None
L13G4 S2G8 AMD Oth	None
L13G4 S2G8 AMD Oth	None
L13G4 S2G8 AMD Oth	None
L13G4 S2G8 AMD Oth	None
L13Y G4 AMD Others1	None
L13Y G4 AMD Others2	None
L13Y G4 AMD Others3	None
L13Y G4 AMD Others4	None
L13Y G4 AMD Others5	None
Ethernet	No Wired Ethernet
Warranty	3 Year Courier or Carry-in

Services

Part Number	Description
5WS0A23006	3Y Onsite upgrade from 3Y Courier/Carry-in

Configuration Summary	01-Mar-24	
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Summary

Line NO.	29
CTO	21FSS1WL00
Country/Region	US
Product Name	Conversion Laptop R7 L13 Yoga Gen4 AMD

Product Configuration Details

Characteristics	VALUES
Country/Region	USA
Preload Type	Standard Image (Preload)
Preload OS	Windows 11 Pro 64
Dash Manageability	Dash Manageability
Processor	AMD Ryzen™ 7 PRO 7730U Processor (2.00 GHz up to 4.50 GHz)
Security Chip Setting	Enabled Discrete TPM2.0
Color	Black
Display	13.3" WUXGA (1920 x 1200), IPS, Anti-Reflection, Anti-Smudge, Touch, 100%sRGB, 300 nits, 60Hz
Graphics	Integrated Graphics
Camera	720P HD RGB with Microphone
Second Camera	No Second Camera
Fingerprint Reader	No Fingerprint Reader
Onboard Memory	16 GB DDR4-3200MHz (Soldered)
Storage Selection	512 GB SSD M.2 2242 PCIe Gen4 TLC Opal
Wireless LAN	Wi-Fi 6E RZ616 2x2 AX & Bluetooth® 5.1 or above
WWAN Selection	No WWAN
Wireless WAN	No Wireless WAN
WWAN SIM Card	No WWAN SIM Card
NFC	No NFC
System Expansion Slot	No Smart Card Reader BK
Battery	4 Cell Li-Polymer 46Wh
Power Adapter	65W USB-C Low Cost 90% PCC 2pin AC Adapter - US
Keyboard	Backlit, Black - English (US)
Publication	Publication - Polish/Portuguese/English
OS DPK	W11 Pro
Preload Language	Windows 11 Pro 64 English
System Unit	L13G4S2G8 R7PRO7730U+16G+616NE
Display Shell	13.3" WUXGA (1920 x 1200), IPS, Anti-Reflective, Anti-Smudge, Touch, 100%sRGB, 300 nits, 60Hz, 720P HD v
Pointing Device	No NFC, No World Facing Camera
Adobe Elements	None
Package Box Type	Single Standard Packaging
Adobe Creative Cloud	None
Adobe Acrobat	None
Microsoft Office	None
Graphic Dongle	No Graphic Dongle
Graphic Dongle 2	No Graphic Dongle
Ethernet Dongle	USB-C to RJ45
USB Cable	No USB Cable
USB Cable 2	No USB Cable
Lenovo Pen	Lenovo Integrated Pen
Security Software	None
Cloud Security Softwar	No Cloud Security Software
Second Security Softw	No Second Security Software
Third Security Software	None
Keyboard Patch	None
ProvisionNow	None
Microsoft 4KHH Repor	None
Absolute BIOS Selecti	BIOS Absolute Enabled
Microsoft Autopilot	None
CO2 Offset Label	No CO2 Offset Label
Custom Image Type	None
Image Management	None
Cloud Recovery	None
Hard Drive Encryption	None
Custom Asset Tag	None
Premier Asset Tag	None

EXHIBIT D
AN AGREEMENT BETWEEN THE CITY OF ARVADA AND
DHE COMPUTER SYSTEMS, LLC. FOR GOODS AND
PROFESSIONAL SERVICES RELATING TO CITYWIDE
WORKSTATION REPLACEMENT IN AN AMOUNT NOT TO
EXCEED \$1,800,000.00

		Absolute Resilience - Software Options									
4L1M24806	Absolute Resilience - 36 Month Term - 500-999 Unit Volume - For Government	\$	89.00								
4L1M24842	Absolute Resilience - 48 Month Term - 500-999 Unit Volume - For Government	\$	105.00								
4L1M24808	Absolute Resilience - 60 Month Term - 500-999 Unit Volume - For Government	\$	129.00								

Lenovo Laptops										
Part Number	Product Name	Processor	Dimm Memory	Storage		Base Warranty	Device Price	Warranty Uplift		Add On's
21HASDGH00	Standard Laptop - L15 Gen 4 i5	Intel® Core™ i5-1335U Processor	16 GB DDR4-3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	57WH Battery/FPR/iR CAM	3 Year On-site	\$ 890.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00	External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00	
21HASDGF00	Standard Laptop - L15 Gen 4 i5	Intel® Core™ i5-1335U Processor	16 GB DDR4-3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	63WH Battery/FPR/iR CAM	3 Year On-site	\$ 905.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00	External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 IR Camera - Windows Hello Ready - \$16.50	
21HASDGL00	Standard Laptop - L15 Gen 4 i5 with LTE	Intel® Core™ i5-1335U Processor	16 GB DDR4-3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	57WH Battery/FPR/iR CAM	3 Year On-site	\$ 990.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00	External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00	
21HASDGG00	Standard Laptop - L15 Gen 4 i5 with LTE	Intel® Core™ i5-1335U Processor	16 GB DDR4-3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	63WH Battery/FPR/iR CAM	3 Year On-site	\$ 1,005.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00	External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00	
21HASDGK00	Standard Laptop - L15 Gen 4 i7	Intel® Core™ i7-1355U Processor	16 GB DDR4-3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	57WH Battery/FPR/iR CAM	3 Year On-site	\$ 1,072.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00	External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00	
21HASDGM00	Standard Laptop - L15 Gen 4 i7	Intel® Core™ i7-1355U Processor	16 GB DDR4-3200MHz (SODIMM) - (2 x 8 GB)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	63WH Battery/FPR/iR CAM	3 Year On-site	\$ 1,087.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00 4Y Sealed Battery Replacement - \$66.00	External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00	
21HASDGJ00	Standard Laptop - L15 Gen 4 i7 Intel with LTE	13th Generation Intel® Core™ i7- 16 GB DDR4-3200MHz (SODIMM) - (2 x 8 GB) 1355U Processor	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	57WH Battery/FPR/iR CAM	3 Year On-site	\$ 1,192.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00	External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00		
21FKS5T500	Conversion Laptop - L13 Gen 4 Yoga i5 with LTE	13th Generation Intel® Core™ i5- 16 GB DDR5-6400MHz 1355U Processor	512 GB SSD M.2 2242 PCIe Gen4 TLC Opal	AX201/iR CAM/FPR	3 Year On-site	\$ 1,177.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00	External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00		
21FKS5TP00	Conversion Laptop- L13 Gen 4 Yoga i5	Intel® Core™ i5-1335U Processor	16 GB DDR5-6400MHz (SODIMM)	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal	AX201/iR CAM/FPR	3 Year On-site	\$ 1,060.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00	External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00	
21FKS5TQ00	Conversion Laptop- L13 Gen 4 Yoga i7	Intel® Core™ i7-1365U vPro® Processor	16 GB DDR5-6400MHz	512 GB SSD M.2 2242 PCIe Gen4 TLC Opal	AX211/iR CAM/FPR	3 Year On-site	\$ 1,326.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00	External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00	
21FKS5TR00	Conversion Laptop- L13 Gen 4 Yoga i7 with LTE	Intel® Core™ i7-1365U vPro® Processor	16 GB DDR5-6400MHz	512 GB SSD M.2 2242 PCIe Gen4 TLC Opal	AX211/iR CAM/FPR	3 Year On-site	\$ 1,436.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$139.00 3Y Sealed Battery Replacement - \$25.00	External Optical Drive - \$35.00 3M Privacy Screen Protector - \$41.00 Upgrade to 32gb - \$99.00	
30GUSA1Y00	High Performance Desktop - P3 Tower (NVIDIA RTX A2000 12GB GDDR6 4mDP GFX)	Intel® Core™ i7-13700 vPro® Processor	32 GB DDR4-3200MHz (SODIMM) 2 x 16GB	512 GB SSD M.2 2280 PCIe Gen4 TLC Opal		3 Year On-site	\$ 1,795.00	3Y Keep Your Drive Add On - \$13.50 5Y Keep Your Drive Add On - \$18.00 5Y Onsite upgrade from 3Y Onsite - \$59.00	External Optical Drive - \$35.00 Upgrade to Bluetooth / AX 6 Intel combo Module - \$15.00	

Lenovo Products Monitor Options

63CFMAT1US	ThinkVision T24i-30	LCD Monitor - Flat - 1920 x 1080 - 23.8Inch - 6Ms - 60 Hz - 0.275Mm - 1000:1 - 250 nits - 178/178 -16:9 - Coverage Ratio: 99% sRGB, Color Area Ratio: 99%	3 Year Warranty	\$149.96
63A4MAT1US	ThinkVision T27i-30	FHD (1920 X 1090) 3-SIDE NEAR- EDGELESS DISPLAY; EYE-CARING DISPLAY WITH NATURAL LOW BLUE LIGHT; USB HUB FOR CONVENIENT EXTENSION; ERGONOMIC STAND	3 Year Warranty	\$235.12
12NAGAR1US	ThinkVision T1024 Gen5	Tiny-In-One 24 Gen 5 - Flat - 23.8 Inch - 1920 x 1080 - 16:9 - 60Hz - 1000:1 - Anti-glare - 16.7 Million - 4 Ms - 250 nits - 178/178 - 3Wx2 - 14W - Black - Tilt, Swivel, Pivot, Height Adjust Stand - Supports VESA mount 100mm - TUV	3 Year Warranty	\$236.50
63A1GAR1US	ThinkVision P27h-30	QHD (2560 x 1440) 4-side Near- edgeless display; Eye-caring display with Natural Low Blue Light; 95% DCI-P3, 99% sRGB with factory calibrated accuracy Daisy chain capability; Built-in RJ45; Ergonomic stand	3 Year Warranty	\$418.00
63B3GAR6US	ThinkVision P24h-30	HDMI/Docking monitor 2560 x 1440 - 16:9 - 60Hz - 1000:1 - Anti-glare - 99% sRGB, 99% BT, 709 - 16.7 Million - 4 Ms - 300 nits - 178 / 178 - 27W - Raven Black - Tilt, Swivel, Pivot, Height Adjust Stand - Supports VESA mount 100mm - TUV	3 Year Warranty	\$330.00
Lenovo Products Docking Station				
40B00135US	ThinkPad Universal Thunderbolt 4 Dock - US	Dock - Black/Red - Power Supply - 20V - 3.5mm Audio combo Jack, Thunderbolt Port, USB, HDMI, DP 1.4, Gigabit Ethernet	3 Year Warranty	\$285.00
40AY0090US	ThinkPad Universal USB-C Docking Station	ThinkPad Universal USB-C Docking Station,Black, OS Requirements: Windows 10, Windows 7, GigabitE; DP; HDMI ; USB	3 Year Warranty	\$179.00

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EXHIBIT E
AN AGREEMENT BETWEEN THE CITY OF ARVADA AND
DHE COMPUTER SYSTEMS, LLC. FOR GOODS AND
PROFESSIONAL SERVICES RELATING TO CITYWIDE
WORKSTATION REPLACEMENT IN AN AMOUNT NOT TO
EXCEED \$1,800,000.00

FEDERAL BUREAU OF INVESTIGATION
CRIMINAL JUSTICE INFORMATION SERVICES
SECURITY ADDENDUM

The goal of this document is to augment the CJIS Security Policy to ensure adequate security is provided for criminal justice systems while (1) under the control or management of a private entity or (2) connectivity to FBI CJIS Systems has been provided to a private entity (contractor). Adequate security is defined in Office of Management and Budget Circular A-130 as “security commensurate with the risk and magnitude of harm resulting from the loss, misuse, or unauthorized access to or modification of information.”

The intent of this Security Addendum is to require that the Contractor maintain a security program consistent with federal and state laws, regulations, and standards (including the CJIS Security Policy in effect when the contract is executed), as well as with policies and standards established by the Criminal Justice Information Services (CJIS) Advisory Policy Board (APB).

This Security Addendum identifies the duties and responsibilities with respect to the installation and maintenance of adequate internal controls within the contractual relationship so that the security and integrity of the FBI's information resources are not compromised. The security program shall include consideration of personnel security, site security, system security, and data security, and technical security.

The provisions of this Security Addendum apply to all personnel, systems, networks and support facilities supporting and/or acting on behalf of the government agency.

1.00 Definitions

1.01 Contracting Government Agency (CGA) - the government agency, whether a Criminal Justice Agency or a Noncriminal Justice Agency, which enters into an agreement with a private contractor subject to this Security Addendum.

1.02 Contractor - a private business, organization or individual which has entered into an agreement for the administration of criminal justice with a Criminal Justice Agency or a Noncriminal Justice Agency.

2.00 Responsibilities of the Contracting Government Agency.

2.01 The CGA will ensure that each Contractor employee receives a copy of the Security Addendum and the CJIS Security Policy and executes an acknowledgment of such receipt and the contents of the Security Addendum. The signed acknowledgments shall remain in the possession of the CGA and available for audit purposes. The acknowledgement may be signed by hand or via digital signature (see glossary for definition of digital signature).

3.00 Responsibilities of the Contractor.

3.01 The Contractor will maintain a security program consistent with federal and state laws, regulations, and standards (including the CJIS Security Policy in effect when the contract is executed and all subsequent versions), as well as with policies and standards established by the Criminal Justice Information Services (CJIS) Advisory Policy Board (APB).

4.00 Security Violations.

4.01 The CGA must report security violations to the CJIS Systems Officer (CSO) and the Director, FBI, along with indications of actions taken by the CGA and Contractor.

4.02 Security violations can justify termination of the appended agreement.

4.03 Upon notification, the FBI reserves the right to:

- a. Investigate or decline to investigate any report of unauthorized use;
- b. Suspend or terminate access and services, including telecommunications links. The FBI will provide the CSO with timely written notice of the suspension. Access and services will be reinstated only after satisfactory assurances have been provided to the FBI by the CGA and Contractor. Upon termination, the Contractor's records containing CHRI must be deleted or returned to the CGA.

5.00 Audit

5.01 The FBI is authorized to perform a final audit of the Contractor's systems after termination of the Security Addendum.

6.00 Scope and Authority

6.01 This Security Addendum does not confer, grant, or authorize any rights, privileges, or obligations on any persons other than the Contractor, CGA, CJA (where applicable), CSA, and FBI.

6.02 The following documents are incorporated by reference and made part of this agreement: (1) the Security Addendum; (2) the NCIC 2000 Operating Manual; (3) the CJIS Security Policy; and (4) Title 28, Code of Federal Regulations, Part 20. The parties are also subject to applicable federal and state laws and regulations.

6.03 The terms set forth in this document do not constitute the sole understanding by and between the parties hereto; rather they augment the provisions of the CJIS Security Policy to provide a minimum basis for the security of the system and contained information and it is understood that there may be terms and conditions of the appended Agreement which impose more stringent requirements upon the Contractor.

6.04 This Security Addendum may only be modified by the FBI, and may not be modified by the parties to the appended Agreement without the consent of the FBI.

6.05 All notices and correspondence shall be forwarded by First Class mail to:

Information Security Officer

Criminal Justice Information Services Division, FBI

1000 Custer Hollow Road

Clarksburg, West Virginia 26306

**FEDERAL BUREAU OF INVESTIGATION
CRIMINAL JUSTICE INFORMATION SERVICES
SECURITY ADDENDUM**

CERTIFICATION

I hereby certify that I am familiar with the contents of (1) the Security Addendum, including its legal authority and purpose; (2) the NCIC Operating Manual; (3) the CJIS Security Policy; and (4) Title 28, Code of Federal Regulations, Part 20, and agree to be bound by their provisions.

I recognize that criminal history record information and related data, by its very nature, is sensitive and has potential for great harm if misused. I acknowledge that access to criminal history record information and related data is therefore limited to the purpose(s) for which a government agency has entered into the contract incorporating this Security Addendum. I understand that misuse of the system by, among other things: accessing it without authorization; accessing it by exceeding authorization; accessing it for an improper purpose; using, disseminating or re-disseminating information received as a result of this contract for a purpose other than that envisioned by the contract, may subject me to administrative and criminal penalties. I understand that accessing the system for an appropriate purpose and then using, disseminating or re-disseminating the information received for another purpose other than execution of the contract also constitutes misuse. I further understand that the occurrence of misuse does not depend upon whether or not I receive additional compensation for such authorized activity. Such exposure for misuse includes, but is not limited to, suspension or loss of employment and prosecution for state and federal crimes.

Printed Name/Signature of Contractor Employee

Date

Printed Name/Signature of Contractor Representative

Date

Organization and Title of Contractor Representative



REPORT TO CITY COUNCIL RESOLUTION

AGENDA ITEM
8.A.4.

TO: THE HONORABLE CITY COUNCIL

DATE: August 19, 2024

SUBJECT: R24-085, A Resolution Authorizing an Agreement By and Between the City of Arvada and SMH West, LLC for the 12-Inch Water Main – (Zone 5) Indiana Street, Project No. 23-WA-20, In an Amount Not to Exceed \$2,961,361.00

Report in Brief

Council action is requested in the attached resolution authorizing an agreement with SMH West, LLC., for an amount not to exceed \$2,961,361.00. This is a capital improvement project involving water line installation of approximately 5,880 linear feet of 12-inch water main in Indiana Street.

The Arvada team recommends that the City Council approve R24-085, A Resolution Authorizing an Agreement By and Between the City of Arvada and SMH West, LLC for the 12-Inch Water Main – (Zone 5) Indiana Street, Project No. 23-WA-20, In an Amount Not to Exceed \$2,961,361.00.

Financial Impact

CIP Project: 23WA20 - 12-inch Water Main – (Zone 5) Indiana Street

Financial Impact: \$2,961,361.00

JCMD Contribution: capped at \$2,015,000.00

City Contribution: \$946,361.00

This is a one-time request for Project Construction costs.

Funding Source: UT Water Capital Projects (41)

Water Project Account Numbers. 41.734010

Background

The 12-inch Water Main – (Zone 5) Indiana Street project will address infrastructure resiliency within the pumped zones, generally all areas west of Indiana.

Discussion

Bids for this project were opened at 2:00 p.m. on July 9, 2024, and six (6) bids were received. Detailed bid tabulations are attached, and the bids are summarized here as follows:

1. Colorado Civil Infrastructure	\$3,300,000.00
2. Elevated Excavating	\$3,379,658.64
3. Native Sun Construction	\$3,861,070.93
4. R&D Pipeline Construction	\$3,746,762.00
5. Reynolds Construction	\$3,416,575.00
6. SMH West	\$2,961,361.00

SMH West was the lowest qualified bidder. This work is expected to take 270 days to complete with construction completion expected by June 2025.

Funds for this project will be partially paid for by JCMD, \$2,015,000.00. The remaining funds for this project will be covered by the previously approved 2024 water budget.

Public Contact

Posting of the City Council agenda.

Commission Recommendation

Not Applicable

Strategic Alignment

The recommended action aligns with the Infrastructure Work System Services within the City Council Strategic Plan. Specifically, the recommended action is consistent with INF1: Provides the community with a safe, resilient, high-quality water supply, drainage system, wastewater disposal, and solid waste management services for full city build-out, as defined by the Comprehensive Plan. This includes maintaining utility rates at lowest practical levels with accurate billing that supports robust and reliable infrastructure.

Alternative Courses of Action

Not Applicable

Recommendation for Action

The Arvada team recommends that the City Council approve R24-085, A Resolution Authorizing an Agreement By and Between the City of Arvada and SMH West, LLC for the 12-Inch Water Main – (Zone 5) Indiana Street, Project No. 23-WA-20, In an Amount Not to Exceed \$2,961,361.00.

Suggested Motion:

I move that R24-085, A Resolution Authorizing an Agreement By and Between the City of Arvada and SMH West, LLC for the 12-Inch Water Main – (Zone 5) Indiana Street, Project No. 23-WA-20, In an Amount Not to Exceed \$2,961,361.00, be (approved) (rejected).

Prepared by:
Jessica Metcalf, Civil Engineer

Reviewed by:

Approved by:

Jenny Wolfschlag, City Engineer	7/29/2024
Mary Stahl, Senior Civil Engineer	7/29/2024
Jacqueline Rhoades, Public Works Director	7/31/2024
Bryan Archer, Director of Finance	8/1/2024
Tammy Hedlund, Legal Specialist	8/2/2024

SUBJECT: R24-085, A Resolution Authorizing an Agreement By and Between the City of Arvada and SMH West, LLC for the 12-Inch Water Main – (Zone 5) Indiana Street, Project No. 23-WA-20, In an Amount Not to Exceed \$2,961,361.00

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ITEM: 8.A.4.

Jessica Morales, Assistant City Attorney	8/2/2024
Don Wick, Deputy City Manager	8/5/2024
Rachel Morris, City Attorney	8/6/2024
Linda Haley, Deputy City Manager	8/7/2024
Debra Nielson, Deputy Director of Finance	8/8/2024
Bryan Archer, Director of Finance	8/8/2024

Enclosure, exhibits & attachments required to support the report

RESOLUTION NO. R24-085

A RESOLUTION AUTHORIZING AN AGREEMENT BY AND BETWEEN THE CITY OF ARVADA AND SMH WEST, LLC FOR THE 12-INCH WATER MAIN – (ZONE 5) INDIANA STREET, PROJECT NO. 23-WA-20, IN AN AMOUNT NOT TO EXCEED \$2,961,361.00

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ARVADA, COLORADO:

Section 1. The Mayor or Mayor Pro Tem is authorized to sign and the City Clerk to attest, in form approved by the City Attorney, an Agreement by and between the City of Arvada and SMH West, LLC for the 12-Inch Water Main – (Zone 5) Indiana Street, Project No. 23-WA-20, that is in substantially the same form as that attached hereto.

Section 2. This resolution shall be effective upon its approval by the City Council.

APPROVED AND ADOPTED this 19th day of August, 2024.

Lauren Simpson, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:
Rachel A. Morris, City Attorney:

BY: _____

**AN AGREEMENT BY AND BETWEEN THE CITY OF ARVADA AND
SMH WEST, LLC FOR THE 12-INCH WATER MAIN – (ZONE 5) INDIANA
STREET, PROJECT NO. 23-WA-20, IN AN AMOUNT NOT TO EXCEED
\$2,961,361.00**

This Agreement made this _____ day of _____, 2024, by and between the City of Arvada, a Colorado home rule municipal corporation (“Arvada” and/or “City”) and SMH West, LLC, a Colorado limited liability company (“Contractor”). Arvada and Contractor may be referred to collectively as the “Parties”.

WITNESSETH: That for and in consideration of the covenants, promises, and payments hereinafter mentioned:

WITNESSETH:

WHEREAS, Arvada solicited proposals from interested construction professionals for the provision of construction services related to its 12-Inch Water Main – (Zone 5) Indiana Street, Project No. 23-WA-20, as described in the Contract Documents (the “Project” or the “Work”); and

WHEREAS, based on Contractor’s submissions, Arvada has selected Contractor for the Project; and

WHEREAS, Arvada and Contractor desire to enter into this Agreement regarding the construction of the Project.

NOW, THEREFORE, for and in consideration of the covenants, promises, and payments hereinafter mentioned, the Parties agree as follows:

ARTICLE 1. GENERAL DESCRIPTION OF SERVICES

- 1.1. **The Services.** Contractor agrees to furnish or arrange for the construction services set forth in the Contract Documents and required for the completion of the Project within the timeframe provided in the Contract Documents. Contractor represents that it is thoroughly familiar with, and understands, the requirements of the Project’s scope and is experienced in the construction of projects of the type and scope contemplated by the Contract Documents. Contractor represents to Arvada that Contractor has all necessary education, skill, knowledge, expertise and experience required for construction of the Project, and will maintain, at all times during the term of this Agreement, such personnel on its staff to provide the services contemplated hereby within the time periods required hereby. In addition, Contractor represents that it or Arvada-approved subcontractors or subconsultants performing services under this Agreement have all applicable licenses required by the State of Colorado to perform such services and all required insurance coverage as required by this Agreement and by law.

- 1.2. **Cooperation.** The Contractor shall endeavor to develop, implement and maintain, a spirit of cooperation, collegiality, and open communication with Arvada, Arvada's Consultants, and Arvada's residents so that the goals and objectives of each are clearly understood, potential problems are resolved promptly, and upon completion, the Project is deemed a success by all interested parties.
- 1.3. **Preparation/Sufficiency of Site.** Before commencing the Project, the Contractor shall (i) visit and thoroughly inspect the Project Site and any structure(s) or other man-made features to be modified and become familiar with local conditions under which the Project will be constructed and operated; (ii) familiarize itself with the survey, including the location of all existing buildings, utilities, conditions, streets, equipment, components and other attributes having or likely to have an impact on the Project; (iii) familiarize itself with Arvada's engineering and design requirements, design objectives, and budget for the Project; (iv) familiarize itself with pertinent Project dates and programming needs, including the Project schedule; (v) review and analyze all Project geotechnical, environmental, and construction materials tests, investigations and recommendations, (vi) review all specifications; and (vii) gather any other information necessary for a thorough understanding of the Project. Claims by Contractor resulting from Contractor's failure to familiarize itself with the Site or pertinent documents shall be deemed waived.
- 1.4. **Contract Documents.** The Contract Documents are incorporated herein by reference. The term "Contract Documents" means and includes this Agreement, together with the following:
- A. Arvada's solicitation entitled Competitive Sealed Bid No. 24-ENG-050, 12-Inch Water Main – (Zone 5) Indiana Street, Project No. 23-WA-20 ("CSB"), including all exhibits and/or addenda;
 - B. Contractor's Response to the CSB, Advertisement for Bid, Bid Proposal, Bid Schedule, Bid Bond ("Contractor's Response");
 - C. Notice of Award;
 - D. Performance and Payment Bond;
 - E. Notice(s) to Proceed;
 - F. Change Orders (if any);
 - G. City of Arvada Engineering Code of Standards and Specifications for the Design and Construction of Public Improvements dated October 23, 2023;
 - H. Requests for Information and Responses (if any);
 - I. All supplementary requirements regarding wage rates, E.E.O., affirmative action and all other Federal-State requirements as outlined in the specifications (if applicable).
- 1.5. **Interpretation of Contract Documents.** In the event of conflicts or discrepancies among the Contract Documents, the documents shall govern in the following order: (1) the Agreement; (2) Arvada's CSB; (3) City of Arvada Engineering Code of Standards and Specifications for the Design and Construction of Public Improvements; (4) Contractor's Response; (5) Change Orders; (6) Requests for Information and Response.

ARTICLE 2. ARVADA'S DUTIES, OBLIGATIONS AND RESPONSIBILITIES

- 2.1. **Project Information.** Contractor acknowledges that Arvada has provided Contractor with information regarding Arvada's requirements for the Project as set forth in the Contract Documents, including Project Specifications.
- 2.2. **Arvada's Budget.** Arvada has established, and will update, an overall budget for the Project, including amounts allocated for construction, Arvada's other costs, and reasonable contingencies related to these costs as appropriate.
- 2.3. **Arvada's Representative.** Arvada will designate a representative authorized to act on Arvada's behalf with respect to the Project.
- 2.4. **Purpose of Arvada's Review.** Arvada's review, inspection, or approval of any work, Testing Documents, Applications for Payment, or other submittals shall be solely for the purpose of determining whether the same are generally consistent with Arvada's standards, policies and requirements. No review, inspection, or approval by Arvada of such work or documents shall relieve Contractor of its responsibility for the performance of its obligations under the Agreement or the accuracy, adequacy, fitness, suitability, or coordination of its construction services. Approval by any governmental or other regulatory agency or other governing body of any work, Testing Document, or the Construction Documents shall not relieve Contractor of responsibility for the performance of its obligations under this Agreement. Payment by Arvada pursuant to the Agreement shall not constitute waiver of any of Arvada's rights under the Agreement or at law, and Contractor expressly accepts the risk that defects in its performance, if any, may not be discovered until after payment, including final payment, is made by Arvada. Notwithstanding the foregoing, reasonable notice shall be given by Arvada to the Contractor if Arvada becomes aware of any fault or defect in the Project or non-conformance with the Contract Documents.

ARTICLE 3. CONSTRUCTION SERVICES REQUIREMENTS AND STANDARDS

- 3.1. **Quality of Construction Services.** Contractor shall be responsible for the quality, completeness, accuracy, and coordination of the Work. Contractor shall provide construction services that meet all industry standards, including all environmental and regulatory requirements. Arvada will provide and be responsible for all material testing and all other testing if needed.
- 3.2. **Arvada's Right to Carry Out the Work.** If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-calendar day period after written notice from Arvada to commence and continue correction of such default or neglect with diligence and promptness, Arvada may after such seven-day period, without prejudice to other remedies Arvada may have, correct such deficiencies. In such a case, an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for any consultant's additional services and expenses made necessary by

such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to Arvada within ten days of receipt of an invoice for such amounts from Arvada.

- 3.3. **Legal Standard.** Contractor shall furnish construction services in accordance with industry standards currently practiced by construction professionals on projects similar in size, complexity and cost to the Project.
- 3.4. **Construction Standards.** Contractor shall perform all services in accordance with requirements of governmental agencies having jurisdiction over the Project, City of Arvada Engineering Code of Standards and Specifications for the Design and Construction of Public Improvements, and the requirements set forth in the Contract Documents. In addition, the Contractor's work shall comply with all applicable building codes, accessibility laws and regulations, environmental regulations, and other applicable legal requirements in effect at the time of the work. To the extent Arvada's standards exceed applicable legal requirements, such standards shall be met unless Contractor obtains a variance from Arvada in writing.
- 3.5. **Permits.** Contractor shall be responsible for obtaining all necessary permits and other governmental approvals necessary for the development of the Project and shall obtain the same at the times necessary to meet the Project schedule. Contractor's responsibility includes providing environmental services and permitting coordination as further described in the Contract Documents.
- 3.6. **Notice of Non-Compliance.** Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by Arvada, and shall at once report to Arvada any errors, inconsistencies or omissions discovered as well as any foreseeable constructability issues arising from the project specifications and/or site conditions. If the Contractor performs any construction activity knowing or should have known it involves an error, inconsistent, omission or constructability issue in the Contract Documents without such notice to Arvada, the Contractor shall assume full responsibility for such performance and shall bear the full costs for correction, including reimbursement for any delay caused to the Project.

ARTICLE 4. CHANGES TO THE WORK

- 4.1. **Field Engineered Changes.** Arvada may modify the construction plans including changing the slope and alignment of flow lines and appurtenances or modifying other improvements as necessary to accommodate construction around existing utilities or other field conditions. No additional compensation shall be made for minor costs and inconveniences incurred while performing field engineering changes as directed by Arvada or its Consultant. No additional compensation shall be made for any down time encountered while Arvada determines what field engineered changes would be appropriate to accommodate construction around existing utilities or other field conditions. Reasonable time must be allowed for Arvada or its Consultant to design field engineered changes. Any additional costs for performing field engineered construction changes to

accommodate existing utilities or other field conditions and for also allowing Arvada reasonable time to design field engineered changes as necessary to complete the work shall be considered a subsidiary obligation of the contract.

- 4.2. **Pre-Construction Meetings.** Contractor agrees to assist in the preparation for and to participate in any pre-construction meetings with Arvada.
- 4.3. **Arvada Change Orders.** Arvada may, by written order signed by Arvada, at any time, and without notice to any surety, and subject to all appropriate adjustments, make changes within the general scope of this Contract in any one or more of the following: (a) changes in scope of services; (b) completion date; (c) contract amount; (d) any applicable material modifications; and, (e) any other matters that the parties deem necessary.
- 4.4. **Contractor Requested Change Orders.** The Contractor may request a Change in the Work ("Requested Change Order"), including one or more of the following: (a) changes in scope of services; (b) completion date; (c) contract amount; (d) any applicable material modifications; and, (e) any other matters that the parties deem necessary.
- 4.5. **Change Order Contents.** Any Requested Change Order shall include (a) a detailed description of the requested change to the original contract; (b) itemized documentation of any subcontractor costs; (c) the total costs associated with the proposed change; (d) the impact on the project completion date, if any, associated with the proposed change; and (e) a statement of the contractual basis for the requested change.
- 4.6. **Basis for Change Order Requests.** The following may be considered a valid basis for requesting a Change Order: (a) Contract Document error or omission; (b) Arvada induced enhancement; (c) unforeseeable constructability issue; (d) unforeseeable geotechnical issue. The following will not be considered a valid basis for requesting a Change Order absent extraordinary circumstances: (a) utility relocation; (b) utility conflicts; (c) foreseeable geotechnical issue; (d) foreseeable constructability issue; (e) defective construction.
- 4.7. **Written Authorization Required.** The Contractor shall not proceed with any change in the Work without the appropriate written authorization.

ARTICLE 5. SUPERVISION AND CONSTRUCTION PROCEDURES

- 5.1. **Supervision.** The Contractor shall supervise and direct the Work using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work under this Contract, unless Contract Documents give other specific instructions concerning these matters.
- 5.2. **Acts and Omissions of Subcontractors and Agents.** The Contractor shall be responsible to Arvada for acts and omission of the Contractor's employees, Subcontractors, and their

agents and employees, and other persons performing portions of the Work under a contract with the Contractor

- 5.3. **Inspection and Subsequent Work.** The Contractor shall be responsible for inspection or portions of Work already performed under this Contract to determine that such portions are in proper condition to receive subsequent Work.

ARTICLE 6. COMPENSATION.

- 6.1. **Completion of Services.** Contractor will furnish all material, supplies, tools, equipment, labor, and other services necessary for the completion of the Work within Arvada's timeframe and monetary limitations set forth below:
- 6.1.1. Contractor shall commence the Work required by the Contract Documents within seven calendar days after the date of the Notice to Proceed unless otherwise mutually agreed-upon by the Parties in writing;
 - 6.1.2. Contractor shall complete the Work required by the Contract Documents within 270 days after the date of the Notice to Proceed, unless the period for completion is extended otherwise by the Contract Documents; and
 - 6.1.3. Compensation Amount. Contractor agrees to perform the Work for an amount not to exceed \$2,961,361.00.
- 6.2. **Term.** This contract shall commence on the date of Arvada's execution of the Agreement and shall remain in effect until such time as the commodities, equipment and/or services acquired in conjunction with this Agreement have been accepted by Arvada's authorized representative, unless otherwise agreed to in writing by the parties, subject to availability of funds, or Arvada's termination for convenience under the Contract Documents. Any required warranty period which exceeds this term shall remain in full force for the duration of the warranty period.
- 6.3. **Additional Services.** While Arvada has listed its major requirements for its solicitation in the Contract Documents, Arvada may, during the term of this Agreement, wish to purchase other related services identified and offered by Contractor, based upon the Bid Schedule amounts contained in Contract Documents. Arvada reserves the right to award these ancillary items to Contractor. This option, if exercised, in no way obligates Arvada to pursue additional services with Contractor.
- 6.4. **Payment for Services.** At least twenty (20) calendar days before the date established for each monthly progress payment, the Contractor shall submit to Arvada an itemized Application for Payment for construction completed in accordance with the Bid Schedule. Such application shall be supported by such data substantiating the Contractor's right to payment as Arvada may require, such as copies of invoices or requisitions from subcontractors and material suppliers and reflecting retainage. Arvada shall pay NET 30 days for services performed in accordance with the Bid Schedule and with this Agreement, but in no event shall the total Contract Amount exceed \$2,961,361.00 absent a properly

executed Change Order. Measurement of the work performed and monthly payment shall be made in accordance with requirements of the Measurement and Payment Section in the Contract Documents unless otherwise specifically provided herein.

- 6.5. **Non-Conforming Materials or Construction.** Where materials installed or the finished product fails to meet minimum requirements of the Contract Documents, the basis of determining final payment to the Contractor shall be determined by the Arvada Project Manager.
- 6.6. **Retainage Requirements.** Contractor agrees to submit monthly invoices together with any retainage requirements as prescribed by Colorado state statutes (*see e.g.*, C.R.S. § 24-91-101 *et seq.*). Payment from Arvada will be paid NET 30 days. Invoices will accurately reflect actual work completed by Contractor and its subconsultants or subcontractors.

ARTICLE 7. MISCELLANEOUS.

- 7.1. **Waiver.** No provision of this Agreement may be waived except by written agreement of the parties. A waiver of any provision on one occasion shall not be deemed a waiver of that provision on any subsequent occasion, unless specifically stated in writing. A waiver of any provision shall not affect or alter the remaining provisions of this Agreement.
- 7.2. **Strict Compliance.** No failure of Arvada to insist upon strict compliance by the Contractor with any provision of the Contract Documents shall operate to release, discharge, modify, change or affect any of the Contractor's obligations.
- 7.3. **Successors and Assigns.** Arvada and Contractor, respectively, bind themselves, their partners, successors, assigns and legal representatives to the other party to this Agreement and to the partners, successors and assigns of such other parties with respect to all covenants of this Agreement. Contractor shall not assign (whether partially or wholly) this Agreement whether by operation of law or otherwise, without the written consent of Arvada. If Contractor makes an assignment in accordance with this provision, Contractor shall nevertheless remain legally responsible for all obligations arising under the Agreement, unless otherwise agreed in writing by Arvada.
- 7.4. **Additional Documents.** The parties agree to execute any additional documents and to take any additional action that is necessary to carry out this Agreement.
- 7.5. **Binding Effect.** This Agreement shall inure to the benefit of, and be binding upon, the parties, their respective legal representatives, successors, heirs, and assigns; provided, however, that nothing in this paragraph shall be construed to permit the assignment of this Agreement except as otherwise expressly authorized herein. All provisions of this Agreement which contain continuing obligations shall survive its expiration or termination.
- 7.6. **Paragraph Captions.** The paragraph captions in this Agreement are set forth only for the convenience and reference of the parties and are not intended in any way to define, limit, or describe the scope or intent of this Agreement.

- 7.7. **Integration, Amendment, and Severability.** This Agreement represents the entire agreement between the parties, and there are no oral or collateral agreements or understandings. This Agreement may be amended only by an instrument in writing signed by the parties. If any other provision of this Agreement is held invalid or unenforceable, no other provision shall be affected by such holding, and all of the remaining provisions of this Agreement shall continue in full force and effect if the essential terms and conditions of this Agreement for both parties remain valid, legal, and enforceable.
- 7.8. **Notices.** Any notice or notification required or permitted by the Agreement shall be in writing and shall be deemed to have been sufficiently given for all purposes if sent electronically, or by certified mail or registered mail, postage and fees prepaid, addressed to the party to whom such notice is to be given at the address set forth on the signature page below, or at such other address as has been previously furnished in writing, to the other party or parties. Such notice or notification shall be deemed to have been given when electronically sent or when deposited in the United States mail.
- 7.9. **Binding Authority.** Contractor represents and affirms that the signature page hereof accurately states the full legal name of Contractor (whether as a corporation, partnership, limited liability company, sole proprietorship, or other), contains all requisite signature(s) on behalf of Contractor, and in all other respects is effective to bind Contractor, in accordance with all applicable statutes, regulations, resolutions, rules, bylaws, agreements, or similar sources of authority or limitation. This Agreement may be executed in counterpart(s), each of which shall be deemed to be an original, and all of which, taken together, shall constitute one instrument.
- 7.10. **Preferences in Employment of Colorado Labor.** To the extent that obligations and responsibilities may be established by C.R.S. § 8-17-101 *et seq.*, as amended, with respect to certain public entities and those contracting therewith as to the procurement of services:
- 7.10.1. Colorado labor shall be employed to perform eighty percent (80%) of the work.
- 7.10.2. Any waiver of this requirement must comply with C.R.S. § 8-17-101 *et seq.*, as amended.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement which shall be deemed an original on the date first above written.

(Signatures on next page.)

CITY OF ARVADA, a Colorado home
rule municipal corporation

Lauren Simpson
Mayor
8101 Ralston Road
Arvada, CO 80002

ATTEST:

City Clerk

APPROVED AS TO FORM:
Rachel A. Morris

By: _____

SMH WEST, LLC, a Colorado Limited
Liability Company

Robert J. Richardson
Division Leader
900 Castleton Rd.
Suite 125
Castle Rock, CO 80109
rob.richardson@smhwest.com

Arvada's CSB

**An Agreement By And Between The City Of Arvada And
SMH West, LLC For The 12-Inch Water Main – (Zone 5)
Indiana Street, Project No. 23-WA-20, In An Amount Not To
Exceed \$2,961,361.00**



BID #: 24-ENG-050

Title: 12-inch Water Main – (Zone 5) Indiana Street

Issue Date: 6/13/2024

Pre-bid Meeting: 6/18/2024 - 10:00 am MT
Location: **Virtual – Mandatory**
Google Meet joining info
Video call link: <https://meet.google.com/jrf-qkjf-den>
Or dial: (US) +1 518-620-7304 PIN: 396 158 361#

Questions Deadline: 6/25/2024 2:00 pm MT
Questions must be submitted through BidnetDirect.com. Responses will be posted on Bidnet via addendum.

Bid Due Date: 7/9/2024 2:00 pm MT
Virtual Opening Information Join Zoom Meeting
<https://arvadaco-gov.zoom.us/j/88210560197?pwd=qwvAg34Sb9Oid5qVTB6r3s4EbKe7Pv.1>

Meeting ID: 882 1056 0197
Passcode: 819990

Bid Delivery address: Electronic Submissions must be submitted online at BidNetDirect.com by the above date and time. Late responses will not be considered for award.

Project Delivery Date: 270 days after notice to proceed.

For additional administrative information not related to the project, contact: Doreen Mazza, dmazza@arvada.org
Contact with the requesting department may result in vendor disqualification.

Documents included in this Request:

Cover Page	page 1
Advertisement for Bidders	page 2
General Terms and Conditions	page 3
Special Terms and Conditions for Bidders	page 5
Insurance Requirements	page 7
Project Special Provisions / Project Manual	page 9
Submittal Forms to be completed and returned	
• Bid Bond	page 90
• Bid Proposal	page 91
• Sample Bid Schedule	page 92
• Required Contractor Submittal Form	page 94
• page	
Preview of Documents if Awarded	page 95

ADVERTISEMENT FOR BIDS

Submit bids electronically on Bidnetdirect.com for the construction of City of Arvada, Project No. 23-WA-20 Project Title: 12-inch Water Main – (Zone 5) Indiana Street

The BID DOCUMENTS, consisting of Advertisement for Bids, General Terms and Conditions, Special Terms and Conditions, Insurance Requirements, Project Special Provisions, Addendum when issued, Bid Bond, Bid Proposal, Bid Schedule, Performance and Payment Bond, Submittal Checklist and References, Sample documents, and the Project Drawings may be examined at the following location: www.bidnetdirect.com

No cost bid documents may be obtained at www.bidnetdirect.com on or after **June 13, 2024**.

ESTIMATED QUANTITIES OF THE MAJOR ITEMS OF WORK ARE:

Furnish and Install 12" Dia. Water Main, C909 PVCO PC 235 psi	5,440 LF
Furnish and Install 12" Dia. Water Main, C900 DR 14 Fusible, PVC, Horizontal Directional Drill	440 LF
Furnish and Install 12" Gate Valve & Box	14 EA
Furnish and Install 18" Butterfly Valve	1 EA
Furnish and Install 2" Air Release and Vacuum	11 EA
Install 12" Dia. Water Line Casing	110 LF
Install 2" Blow-off	3 EA
Asphalt Removal and Replacement	3107 SY

Miscellaneous items include citizen notification, traffic control, and other appurtenances – See Bid Tab for complete bid item list.

Bidders, subcontractors and suppliers must be familiar with the current City of Arvada Engineering Code of Standards and Specifications, dated **October 2, 2023**, which will be combined with the Bid Documents to form the Contract Documents for the Project. A copy of the Standards may be obtained from the office of the City Engineer upon a non-refundable payment of \$50.00. Holders will be notified when supplemental revisions and additions are available as they are adopted. The Standards are also available at no cost on the City's web site at <https://www.arvadaco.gov/167/Engineering-Code>. Holders are responsible for keeping current their City of Arvada Engineering Code of Standards and Specifications.

Date: 6/10/24

CITY OF ARVADA



Jenny Wolfschlag
City Engineer
8101 Ralston Road
Arvada, Colorado 80002

GENERAL TERMS AND CONDITIONS

1. PAYMENTS TO CONSTITUTE CURRENT EXPENDITURES. Financial obligations of the City of Arvada, if any, after the current fiscal year are contingent on funds for that purpose being appropriated, budgeted and otherwise made available by the City Council for the City of Arvada. The City of Arvada's obligations under the Agreement shall be from year to year only and shall not constitute a multiple-fiscal year direct or indirect debt or other financial obligation of the City of Arvada within the meaning of Article X, Section 20 of the Colorado Constitution.

2. TAXES. The City of Arvada is not subject to taxation. Contractor shall not invoice Arvada for any state, federal or local taxes whatsoever. Upon written notification by the City of Arvada, Contractor shall reimburse the City of Arvada in a timely manner for any taxes erroneously paid by the City of Arvada. The Colorado Department of Revenue, Certification of Exemption for Colorado State Sales/Use Tax account number for the City of Arvada is 98-01789-0000. An exemption certificate will be provided, where applicable, upon request.

3. NO INDEMNIFICATION BY ARVADA. The City of Arvada is prohibited by Article XI, Section 1, Colorado Constitution, from indemnifying anyone. Therefore, notwithstanding any provision in the response to solicitation or proposed contract, lease, escrow agreement or any other type of agreement to the contrary, the City of Arvada does not indemnify Contractor or anyone else under this Agreement.

4. INDEMNIFICATION OF CITY.

A. Contractor: Notwithstanding any provision in the response to solicitation or proposed contract, lease, escrow agreement or any other type of agreement to the contrary, Contractor agrees to investigate, defend, indemnify and hold harmless Arvada, its elected officials, officers, employees, agents, insurers, and representatives from and against any claims, costs, losses, expenses, demands, actions, or causes of action, including reasonable attorney fees and other costs and expenses of litigation, which may be asserted against or incurred by Arvada or for which Arvada may be liable, arising from the negligence, willful misconduct, or other fault of Contractor or its employees, agents, or subcontractors in performance of the Agreement. Nothing herein is intended to constitute a covenant, promise, or agreement to indemnify and hold harmless Arvada from any liability or damages directly caused by or attributable to Arvada's own negligence. Nothing herein intended to be nor may be construed as a waiver of the immunities, protections, or limitations on damages provided to Arvada by the Colorado Governmental Immunity Act, C.R.S. §§ 24-10-101 *et seq.*, as it may from time to time be amended.

(or)

B. Architect, Engineer, Surveyor Services for Public Works Construction: Contractor agrees to hold harmless and indemnify Arvada, its officers and employees, from and against any liability or any claims, suits, or actions arising out of, made, or asserted for any damage to persons or property resulting from errors, omissions or fault of Contractor in connection with the performance by Contractor of obligations under this solicitation and any subsequent Agreement with Arvada. Nothing herein is intended to constitute a covenant, promise, or agreement to indemnify and hold harmless Arvada from any liability or damages directly caused by or attributable to Arvada's own negligence. Nothing herein is intended to be nor construed as a waiver of the immunities, protections, or limitations on damages provided to Arvada by the Colorado Governmental Immunity Act, C.R.S. §§24-10-101 *et seq.*, as it may from time to time be amended.

5. NO OPINION OF COUNSEL LETTERS. Pursuant to Section 8.1 of the Arvada City Charter, the City Attorney provides advice to the City Council and City Officials in matters relating to their official powers and duties, and will perform such other duties as City Council may prescribe by ordinance or resolution. The City Attorney will not issue opinion of counsel letters, memoranda or statements to third parties, including, but not limited to that any contract or lease is binding on the public entity, enforceable, etc.

6. CONFIDENTIAL DOCUMENTS. Contractors may designate specific pages or sections within their submission as trade secret or confidential commercial information or as otherwise protected by law ("Confidential Information"). Documents and data that are considered Confidential Information shall be clearly marked as such and separated from the rest of the solicitation submission documents. Comingling is not acceptable. The City does not favor blanket assertions of Confidential Information. Please note that blanket assertions that merely classify and/or broadly claim information is confidential are insufficient as a matter of law. See, *International Brotherhood of Electrical Workers Local 68 v. Denver Metropolitan Major League Baseball Stadium District*, 880 P.2d 160 (Colo. App. 1994). Any information that will be included in any resulting contract cannot be considered Confidential. Under no circumstances may submission pricing information be considered Confidential. In the event a formal contract is entered into with the City and a portion of the Proposal/Response carries a designation indicating the Contractor believes it is Confidential Information, then the City agrees that it will use its best efforts to forward any request for the disclosure of the Confidential Information to the Contractor. By its submission of the Proposal/Response, Contractor agrees to promptly respond to the request for disclosure with any objections and reasons therefor in accordance with the Colorado Open Records Act C.R.S. §§24-72-101 *et seq.* and any other applicable law. Further, Contractor agrees to assume the obligation to defend, hold harmless, and indemnify the City in any legal proceeding that arises from non-disclosure of documents or data pursuant to the Contractor's objection.

7. OWNERSHIP OF WORK PRODUCT. The originals of all plans, reports, studies, data, or other materials or information relating to the Work that are produced by Contractor shall be delivered to and become the property of Arvada. Contractor may retain copies of any originals; however, no plans, reports, studies, data, or other materials or information relating to the Work shall be released to any person or entity without the prior written consent of Arvada. Nothing in this clause is intended to affect Contractor's right to use generic know-how learned in the course of providing services under the Agreement for the future benefit of the City of Arvada or others.

8. ASSIGNMENT. Contractor shall not assign the Agreement without the prior written consent of the City of Arvada, which will not be unreasonably withheld, conditioned, or delayed. Contractor may assign the Agreement to any successor to the business of the party by merger, consolidation, or sale of assets. No assignment shall be permitted that enlarges any duty, responsibility or obligation of the City of Arvada, or that limits, curtails, or diminishes any right or privilege of the City of Arvada without the City of Arvada's express written consent.

9. NO THIRD PARTY BENEFICIARIES. It is expressly understood and agreed that enforcement of the terms and conditions of the Agreement, and all rights of action relating to such enforcement, shall be strictly reserved to Arvada and Contractor and nothing contained in the Agreement shall give or allow any such claim or right of action to any other third party on the Agreement. It is the express intention of Arvada and Contractor that any person other than Arvada or Contractor receiving services or benefits under the Agreement shall be deemed to be an incidental beneficiary only.

10. INDEPENDENT CONTRACTOR. Contractor and Arvada hereby represent that Contractor is an independent contractor for all purposes hereunder. As such, Contractor is not covered by any worker's compensation insurance or any other insurance maintained by Arvada except as would apply to members of the general public. Contractor shall not create any indebtedness on behalf of Arvada.

11. SUBCONTRACTING. Contractor shall not award work to subcontractor(s) in excess of fifty percent of the total contract price without Arvada's prior written approval. Contractor shall be responsible for any failure by any subcontractor or subcontractor personnel to perform in accordance with the Agreement or to comply with any duties or obligations imposed on Contractor under the Agreement to the same extent as if such failure to perform or comply was committed by Contractor or Contractor's personnel. Contractor shall be Arvada's sole point of contact regarding the services, including with respect to payment.

12. NO WAIVER OF GOVERNMENTAL IMMUNITY. Nothing contained in this or any of the exhibits attached thereto shall be construed as a waiver of any of the immunities, limitations, privileges, rights, procedures, or requirements contained in the Colorado Governmental Immunity Act, C.R.S. §§24-10-101 *et seq.*

13. RIGHT TO TERMINATE. The City of Arvada shall have the right to terminate, without cause, the Agreement. Any such termination shall not be considered a breach of the Agreement or any extension thereof. In the event of termination by the City of Arvada for convenience, Contractor will be paid for requested work performed up until the time of termination by the City of Arvada, not to exceed the total amount of the contract price agreed upon by the parties.

14. COMPLIANCE WITH ALL LAWS. All of the services performed under this Agreement by Contractor shall comply with all applicable laws, rules, regulations and codes of the United States and State of Colorado, and with the charter, ordinances, rules and regulations of the City of Arvada.

15. WAIVER OF BREACH. A waiver by any party to the Agreement or the breach of any term or provision of the Agreement shall not operate or be construed as a waiver of any subsequent breach by either party.

16. GOVERNING LAW AND VENUE. Notwithstanding any provision in the response to solicitation or proposed contract, lease, escrow agreement or any other type of agreement to the contrary, the Agreement shall be governed by the laws of the State of Colorado. Venue for any action arising under the Agreement or for the enforcement of the Agreement shall be in the appropriate court for Jefferson County, Colorado.

17. FORCE MAJEURE. Any delays in or failure of performance by any party of its obligations under the Agreement shall be excused if such delays or failure are a result of acts of God, fires, floods, strikes, labor disputes, accidents, regulations or orders of civil or military authorities, shortages of labor or materials, or other causes, similar or dissimilar, which are beyond the control of such party.

18. BINDING ARBITRATION PROHIBITED. The City of Arvada does not agree to binding arbitration by any extra-judicial body or person. Any provision to the contrary in response to the solicitation, or incorporated by reference, shall be null and void.

19. EQUAL EMPLOYMENT OPPORTUNITY. Contractor shall not refuse to hire, discharge, promote or demote, or discriminate in matters of compensation against any person otherwise qualified solely because of race, creed, sex, color, national origin or ancestry, religion, disability, age, sexual orientation, gender identity, veteran status, or any other basis prohibited by federal, state, or local law.

20. BINDING AUTHORITY. Contractor represents and affirms that the signature page hereof accurately states the full legal name of Contractor (whether as a corporation, partnership, limited liability company, sole proprietorship, or other), contains all requisite signature(s) on behalf of Contractor, has been properly acknowledged by attestation, notary acknowledgment, or both, and in all other respects is effective to bind Contractor, in accordance with all applicable statutes, regulations, resolutions, rules, bylaws, agreements, or similar sources of authority or limitation.

21. PREFERENCES IN EMPLOYMENT OF COLORADO LABOR. To the extent that obligations and responsibilities may be established by C.R.S. § 8-17-101 *et seq.*, as amended, with respect to certain public entities and those contracting therewith as to the procurement of services:

- a. Colorado labor shall be employed to perform eighty percent (80%) of the work.
- b. Any waiver of this requirement must comply with C.R.S. § 8-17-101 *et seq.*, as amended.

22. RETAINAGE REQUIREMENTS. Contractor agrees to submit monthly invoices together with any retainage requirements as prescribed by Colorado state statutes (see e.g., C.R.S. §§24-91-101 *et seq.*). Payment from Arvada will traditionally be paid NET (15)

days but no later than NET thirty (30) days. Invoices will accurately reflect actual work completed by Contractor.

23. ACCESSIBILITY COMPLIANCE.

- 23.1 Arvada is obligated to comply with the Colorado Anti-Discrimination Act (C.R.S. §§24-34-300 *et seq.*)("CADA"), which requires all digital and online platform and content providers to comply with the minimum *Accessibility Standards for Individuals with a Disability*, adopted by the Colorado Office of Information Technology ("OIT") under C.R.S §24-85-103(2.5). Contractor has been advised to familiarize itself with CADA.
- 23.2 To the extent the Work or any of Contractor's services provided under the Agreement involves digital, technological components, including but not limited to software, websites, applications, digital documents (the "Material"), all Material shall comply with the OIT's currently adopted minimum *Accessibility Standards for Individuals with a Disability* at all times.
- 23.3 Contractor shall indemnify, save, and hold harmless Arvada, its employees, agents and assignees (the "Indemnified Parties") against any and all costs, expenses, claims, damages, liabilities, court awards and other amounts (including attorneys' fees and related costs) incurred by any of the Indemnified Parties in relationship to Contractor's failure to comply with Section (23.2) above.
- 23.4 Upon Arvada's request, Contractor shall certify to Arvada that its service(s) and digital documents are compliant with Section (23.2) above. Arvada may require Contractor's compliance to the OIT's currently adopted minimum standards of accessibility to be determined by a third party selected by Arvada to attest to Contractor's compliance.

SPECIAL TERMS AND CONDITIONS FOR BIDDERS

1. MINIMUM REQUIREMENTS: Evidence of the following minimum qualifications must be submitted.

- 1. Successful installation of 5,000 LF or more of 10-16 inch diameter waterline for each of the last three years located in the Front Range of Colorado.
- 2. The General Contractor shall submit resumes and references for the Project Manager and Foreman.
- 3. Resumes and References for the Drilling Subcontractor shall also be submitted for the Project Manager and Foreman verifying successful installation of Horizontal Directional Drilling (HDD) with a minimum depth of 15 feet within the past 3 years.
- 4. Any changes to personnel for the General Contractor and any associated subcontractors must be submitted and approved by the City.

2. RECEIPT AND OPENING OF BIDS. Bids submitted electronically on the BidnetDirect.com website only become available to the City of Arvada after the bid closes. Bidder shall assume full responsibility for timely upload of bid to the BidnetDirect website. The City reserves the right, where its best interest will be served, to accept or reject any conditional or qualified bid.

3. QUANTITY AND NATURE OF THE WORK. Bidders must satisfy themselves of the accuracy of the estimated quantities in the Bid Schedule by examination of the site and a review of the drawings and specifications including Addendum. After Bids have been submitted the Bidder shall not assert that there was a misunderstanding concerning the quantities of work or of the nature of the work to be done.

4. CONTENTS OF BID. Contractors are required to submit Bids with the following conditions:

- 1) Contractors shall make all investigations necessary to inform themselves of the sites affected and the work required by the Solicitation.
- 2) Any official interpretation of the Solicitation may only be issued by an authorized agent of the City. The City shall not be responsible for other interpretations offered by employees not authorized.
- 3) The City shall issue Addenda if substantial changes are required which may impact the content and submission of Bids. A copy of such addenda will be publicly posted with the original CSB posting.
- 4) The apparent silence or omissions within this Solicitation regarding a detailed description of the materials or services shall be interpreted to mean that only the best commercial practices are to prevail and that only materials and workmanship of first quality are to be provided.

5. BID SECURITY. Each Bid must be accompanied by a PHOTO of the Bid Bond, on the form attached to these contract documents, payable to the City for five (5) percent of the total amount of the Bid. As soon as the bid Prices have been compared, the City will issue intent to award on the Bidnetdirect.com web site. The vendor who is named as the intent to award Contractor must submit the physical Bid Bond within 10 days or the intent to award may be revoked. The Bid Bond of the successful Bidder will be retained until the Payment and Performance Bond has been executed and approved after which it will be returned. A certified check may be used in lieu of a Bid Bond.

6. POWER OF ATTORNEY. Attorneys-in-fact who sign Bid Bonds or Payment and Performance Bonds must file with each bond a certified and effective dated copy of their power of attorney.

7. QUALIFICATION OF BIDDER. The City may make such investigation as it deems necessary to determine the ability of the Bidder to perform the work. The City reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the City that such Bidder is properly qualified to carry out the obligation of the Contract Agreement and to complete the work contemplated therein. The City reserves the right, before awarding the contract, to require a Contractor to submit evidence of its qualifications including, but not limited to, financial, technical, and other qualifications, as well as past performance with the City, for

consideration in making the award in the best interest of the City.

8. AWARD OF CONTRACT. A contract/s shall be awarded to the lowest-priced responsible and most responsive bidder/s whose bid meets the requirements and criteria set forth in the CSB within the limits of funds available and that best serves the City's interest. The City, within seven (7) calendar days of receipt of acceptable Contract Security and the Contract Agreement, signed by the Bidder to whom the Contract was awarded, shall sign the Contract Agreement and return to the Bidder an executed copy of the Contract Agreement. Should the City not execute the Contract Agreement within such period, the Bidder may, by written notice, withdraw their signed Contract Agreement. Such notice of withdrawal shall be effective upon receipt of the written notice by the City.

9. NOTICE OF AWARD AND FAILURE TO ENTER INTO CONTRACT. The party to whom the Contract is to be awarded will be required to execute the Contract Agreement, obtain Certificates of Insurance and a Performance and Payment Bond, as Contract security, within five (5) calendar days from the date the Notice of Award is delivered to the Bidder. The Notice of Award shall be accompanied by the Contract Agreement and the necessary Performance and Payment Bond forms. In case of failure of the bidder to execute the Contract Agreement and provide satisfactory Insurance and Contract Security, the City may at its option, consider the Bidder in default, in which case the Bid Bond accompanying the Proposal shall become the property of the City.

10. CONTRACT DOCUMENTS. The Contract Documents consisting of the Bid Documents, which include the Advertisement for Bids, Information for Bidders, General Terms and Conditions, Special Terms and Conditions, Insurance Requirements, Project Special Provisions, Addendum, Bid Bond, Bid Proposal, Bid Schedule, Vendor Submittal Form, Construction Drawings, Supplemental Specifications and the City of Arvada "Engineering Code of Standards and Specifications for the Design and Construction of Public Improvements", dated **October 2, 2023**, which include the Measurement and Payment specifications, and the attached Notice of Award form, Contract Agreement form, Performance and Payment Bond form, Notice to Proceed form, and Change Order form, when combined, contain the provisions required for the construction of the Project. Information obtained from an agent or employee of the City or any other person shall not affect the risks or obligations assumed by the Contractor or relieve him from fulfilling any of the conditions of the contract.

11. TERM OF CONTRACT. This contract shall commence on the date of the purchase order or contract execution and shall remain in effect until such time as the commodities, equipment and/or services acquired in conjunction with this Bid have been accepted by the City's authorized representative. Any required warranty period which exceeds this term shall remain in full force for the duration of the warranty period.

12. PRICING SHALL BE FIXED AND FIRM. The prices offered by the Contractor shall remain fixed and firm for at least 90 ninety days. No changes in the Bid shall be allowed after the date and time of the Bid deadline due to error by the Contractor.

13. CONTRACT SECURITY. A Performance and Payment Bond, on the form attached to these contract documents, in the amount of 100% of the Contract price, with a corporate surety approved by the City, will be required for the faithful performance of the Contract.

14. NOTICE TO PROCEED. The Notice to Proceed shall be issued within seven (7) calendar days of the execution of the Contract Agreement by the City. Should there be reason why the Notice to Proceed cannot be issued within such period, the time may be extended by mutual agreement between the City and the Contractor. In the event the Notice to Proceed has not been issued within the seven day period or within the period mutually agreed upon the Contractor may terminate the Contract Agreement without further liability on the part of either party.

15. MODIFICATION OR WITHDRAWAL OF BIDS BY CONTRACTOR.

Modifications to Bids- Changes to the Bid after the submission deadline shall be allowed only when the Contractor can show convincing evidence that an unintentional factual mistake was made. Modification requests must be made in writing. Any modification submitted to the City must have the Contractor's name, address, Solicitation Number and title included.

Withdrawal of Bids- If a Bid is withdrawn by Contractor after the Bid Opening, the City may, at its option, suspend the Contractor for a six (6) month period following the withdrawal. Withdrawal of the Bid after the Bid Opening will result in the Contractor forfeiting the provided Bid Bond.

16. REJECTION OF OFFERS BY CITY.

The City may reject a Bid, in whole or in part, for reasons including, but not be limited to:

1. The Contractor misstates or conceals any material fact in its Bid.
2. The Contractor's Bid does not strictly conform to the law or requirements of the Solicitation.
3. The Bid expressly requires or implies a conditional award that conflicts with the method of award stipulated in the Special Conditions.
4. The Bid does not include documents which are required for submission with the Bid; or
5. The Bid has not been executed by the Contractor through an authorized signature.
6. The City may, at its sole and absolute discretion:
 - Reject all or parts of Bids submitted by prospective Contractors;
 - Re-advertise this Solicitation;
 - Postpone or cancel the Solicitation;
7. Bids may not be accepted from, nor any contract be awarded to, any person or firm which is in arrears to the City for any debt or

Contract, or is a defaulter as surety for any obligation to the City, has failed to perform faithfully any previous contract with the City, State or Federal government for a minimum period of one (1) year after this previous Contract was terminated for cause has pending litigation against the City on the date and time that the Solicitation is due.

17. CLARIFICATION AND MODIFICATIONS. The contract resulting from this solicitation will be subject to the Solicitation materials, City Ordinance, State and Federal Statutes. When conflicts occur, the highest authority shall prevail. Contractors are required to indicate any variances to the terms, conditions, requirements and specifications of this Solicitation; no matter how slight. If variations are not stated in the Contractor's Bid, it shall be agreed that the Contractor's Bid fully complies with all conditions identified in this Solicitation.

18. ELIGIBILITY OF CONTRACTORS: MUST BE ENGAGED IN SUPPLYING PRODUCTS OR SERVICES RENDERED. Bids will only be considered from firms which have been engaged in the business of manufacturing or distributing the goods and/or performing services described in this Solicitation. Contractors must be able to produce evidence that they have an established satisfactory record of performance for at least two (2) years and have sufficient finances and structure to ensure that they can satisfactorily execute the Contract requirements, as determined by authorities of the City. The City reserves the right, before awarding the contract, to require a Contractor to submit evidence of its qualifications including, but not limited to, financial, technical and other qualifications, as well as past performance with the City, for consideration in making the award in the best interest of the City.

19. ELECTRONIC PAYMENT METHODS - CITY OF ARVADA SINGLE USE ACCOUNT.

Contractors are encouraged to consider the following method of payment.

Single Use Account: The City incorporates the use of Single User Accounts as an option to seamlessly process payment of larger dollar purchase orders and contracts to vendors/contractors/providers. A secure, one-time payment transaction account processes to pay invoices via the Contractor's merchant bank. Invoice payments have an enhanced speed-of-pay cycle that can significantly benefit cash flow.

20. CONDITIONS OF WORK AND OBLIGATION OF BIDDER. Each Bidder is responsible for independently inspecting the site and for reading and being thoroughly familiar with the Contract Documents and for providing the names of major suppliers and sub-contractors in the space provided on the Bid Proposal form. The failure or omission of any Bidder to do any of the foregoing shall in no way relieve the Bidder from any obligation in respect to their Bid Proposal.

21. CONTRACTOR LICENSE. The Contractor to whom the contract is awarded and any subcontractors employed by the Contractor must have or acquire the appropriate Contractor's license issued by the City of Arvada Engineering Division, including submittal of license bond, necessary insurance certificate, and license fee before initiating any work. The Contractor and any subcontractors will also be required to obtain a no charge Public Improvements Permit from the City of Arvada Engineering Division prior to initiating any and all work on this project.

22. PERFORMANCE MEASUREMENTS FOR SERVICES MORE THAN \$15,000.

The City has incorporated Performance Management into its organizational culture. The City will monitor and report on the following performance measures. These measures will determine, in part, renewals and eligibility for future awards. Measures include: (a) safety as defined by observation and OSHA reportable injuries, (b) quality of contracted work, (c) work completed within required schedule, (d) administration and coordination of estimates, RFIs, ASIs, change orders, pay requests and close out documents, (e) fair and justifiable change orders, (f) responsiveness and follow through on requests.

SERVICES means: the furnishing of labor, time, effort, maintenance, etc., by a vendor/contractor/consultant, with an initial contract amount of more than \$15,000.

23. PREPARATION AND SUBMISSION.

Bids will be prepared as follow:

- 1) A blank shall be construed as "No Bid/not offered". Where there is a discrepancy between the unit price and the extension of prices, the unit price shall prevail.
- 2) Contractors will not knowingly participate in solicitations where there exists a conflict of interest with their firm and a member of City staff or their immediate family.
- 3) The only authorized version of this Bid is posted on WWW.BIDNETDIRECT.COM. Registration is available to receive email notification of new solicitations, addenda, and communications.

INSURANCE REQUIREMENTS

The following listed insurance requirements shall be carried by the selected Contractor for the entirety of the contract. Applicable requirements for this solicitation are identified by completed check boxes.

1. ☒ **Commercial General Liability**, written on an occurrence form, for limits not less than \$1,000,000 for bodily injury and property damage for each occurrence and not less than \$2,000,000 aggregate. Coverage shall include premises and operations liability, blanket contractual, broad form property damage, products and completed operations and personal injury endorsements.

2. ☒ **Workers' Compensation and Employers Liability** as required by statute. Employers Liability coverage is to be carried for a minimum limit of \$1,000,000 each accident/disease and \$2,000,000 aggregate.
3. ☒ **Automobile Liability** for limits not less than \$1,000,000 combined single limit for bodily injury and property damage for each occurrence. Coverage shall include owned, non-owned and hired automobiles.
4. ☒ **Umbrella Liability** of \$5,000,000.00, following form to the Commercial General Liability.
5. ☐ **Builders Risk or Course of Construction** Purchased by contractor to cover physical damage to property in construction or rehab. Contractors will ensure that City and subcontractors will be covered as additional insureds, excluding their own machinery, tools and equipment.
6. ☐ **Professional Liability** Professional Liability insurance in an amount of not less than \$1,000,000 per occurrence, covering the professional work contemplated under this proposal. The coverage shall have an extended reporting period of three (3) years following the date of substantial completion of the work for reporting of claims.
7. ☐ **Pollution Legal Liability Insurance** for limits not less than \$1,000,000 per occurrence (or claims made) and not less than \$1,000,000 aggregate for bodily Injury, personal Injury and property Damage.
8. ☐ **Privacy/Network/Cyber Liability Insurance** for limits not less than \$1,000,000 for any firm providing product or services associated with IT, software, communication, or network.

Additional Insurance Requirements:

- Contractor will be required to, at its own expense, keep in full force and effect during the term of the Agreement, and during the term of any extension or amendment of the Agreement, insurance reasonably sufficient to insure against the liability assumed by Contractor pursuant to the provisions of the solicitation sent by the City of Arvada or as determined by the City of Arvada Risk Manager.
- All coverage must be written with carriers holding a minimum A.M. Best rating of A-VII, and authorized to do business in Colorado. Coverage shall be primary, and any insurance held by the City of Arvada is excess and non-contributory.
- Issuance of a Purchase Order/Contract is contingent upon the receipt of the insurance documents. Work shall not commence before this requirement is met. If the Contractor fails to submit the required insurance documents within 15 calendar days after notice to submit such policies is given to the Contractor by a City representative, the Contractor may be in default of the Award.
- Except for Workers Compensation, Employer's Liability insurance, Automobile Liability and Professional Liability insurance, the City of Arvada must be endorsed as an additional insured on a Certificate of Insurance.
- The City, through its Risk Manager, reserves the right to require additional insurance coverage and other requirements.

SPECIAL PROVISIONS

City of Arvada Project No. 23-WA-20, Project Title: 12-inch Water Main – (Zone 5) Indiana Street

Conditions peculiar, but essential, to the successful performance and acceptance of the work on this project are itemized below. As such, they shall take precedence over the City of Arvada Engineering Code of Standards and Specifications (latest edition).

***See the Specifications Booklet below.**

ISSUED FOR BID

PROJECT MANUAL

ZONE 5 WATER LINE PROJECT CITY PROJECT NO. 23-WA-20

MAY 2024

PREPARED FOR:



8101 RALSTON ROAD
ARVADA, COLORADO 80002

PREPARED BY:



J&T Consulting, Inc.

305 DENVER AVENUE – SUITE D
FORT LUPTON, CO 80621
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Appendix

A	CMT Technical Geotechnical Exploration Memo
B	City of Arvada Traffic Control Guidelines

SECTION 01000
SPECIAL CONDITIONS TO THE CONSTRUCTION CONTRACT

PART 1 GENERAL

1.01 SPECIFICATIONS

Specifications for the project shall be as specified the City's *Engineering Code of Standards and Specifications*, 2023 Edition, as published on the City website unless modified in this project manual.

1.02 PROJECT SIGNS

The Contractor shall provide and install two (2) portable project signs with the name of the project and other information as supplied by the City, to be placed at the areas where construction is active on the street at any given time at locations as determined by the City.

1.03 EXISTING CONDITIONS

The bidder represents that he has carefully examined the contract documents and the site where the work is to be performed in accordance with the provisions of the General Conditions, and that he has familiarized himself with all local conditions and federal, state, and local laws, ordinances, rules, and regulations that may affect the performance of the work. The bidder further represents that he has studied all documents pertaining to the job site, that he has performed such additional surveys and investigations as he deems necessary to assure himself of his ability to complete the work at this bid price, and that he has correlated the results of all such data with the requirements of the contract documents.

The submittal of a bid shall be conclusive evidence that the bidder has investigated and is satisfied as to the conditions to be encountered, including locality, uncertainty of weather and all other contingencies, and as to the character, quality quantities, and scope of work.

The plans and specifications for the work show subsurface conditions or otherwise hidden conditions as they might be expected to exist; but it is not intended nor is it to be inferred that showing said conditions constitute a representation that such conditions are accurate or complete.

Where the City or the Engineer or their consultants have made investigations of subsurface conditions in areas where the work is to be performed, such investigations were made only for the purpose of study and design. The conditions indicated by such investigations apply only at the specific location of each boring or excavation at the time the borings or excavations were made.

Where such investigations have been made, bidders or Contractors may inspect the records as to such investigations subject to the above limitations. The record of such investigations is not a part of the contract and is provided solely for the convenience of the bidder or Contractor.

No information derived from such inspection of records of investigation or compilation thereof made by the City, the Engineer, or their consultant will in any way relieve the bidder or Contractor from any risk or from properly fulfilling the terms of the contract nor entitle the Contractor to any additional compensation.

1.04 MOBILIZATION

The Contractor shall limit storage equipment and supplies and remain within the staging areas.

The Contractor shall supply portable sanitary facilities for the site.

1.05 SURVEYING

Survey shall comply with Section 342 Staking and Grade Control of *Engineering Code of Standards and Specifications*, 2023 Edition. The Contractor shall obtain surveying services for the staking of the project. The surveyor employed will be a Colorado Registered Licensed Surveyor and have the expertise to perform such services. All costs associated with surveying shall be included in the price of the project.

1.06 CONTRACTOR'S WORK HOURS

CONTRACTOR (and Subcontractor) regular working hours shall comply with Section 129.01 Working Hours of *Engineering Code of Standards and Specifications*, 2023 Edition. Indiana Street is an arterial street. Any work outside of the regular working hours must be requested as outlined in the same Section.

City of Arvada's Water Operations Division has different work hours and limitations to perform work as listed in Section 400 of *Engineering Code of Standards and Specifications*, 2023 Edition.

1.07 CONNECTIONS TO EXISTING MAINS

It shall be the Contractor's responsibility to verify the location of all existing sanitary and/or water mains, which are to be connected, prior to the start of construction; and also verify the horizontal and vertical locations of all other utilities, sanitary sewers or water mains that may be affected by work. Procedures for connecting to existing mains shall follow those outlined in the City of Arvada's *Engineering Code of Standards and Specifications*, 2023 Edition.

1.08 MAINTENANCE OF ACCESS TO RESIDENCES AND BUSINESSES

Access to residences and business shall comply with Section 149 Traffic Control, Barricades, and Warning Signs of *Engineering Code of Standards and Specifications*, 2023 Edition.

1.09 COORDINATION AND NOTIFICATION OF SERVICE DISRUPTION

Coordination and notification of service disruption shall comply with Section 146 Interruption of Services of *Engineering Code of Standards and Specifications*, 2023 Edition. Residents and businesses shall also be notified when service has been restored.

1.10 COMMUNICATION WITH THE PUBLIC

The City will send out letters to the impacted residences, businesses regarding the construction. The Contractor should plan on continuous communication with residents regarding work schedule for the duration of the project. The Engineer will help facilitate the efforts, but his responsibilities are not a substitute for an adequate communication plan and implementation of that plan by the Contractor.

1.11 COORDINATION WITH CITY STAFF

City Utility Department personnel are familiar with the project and the system, and are a valuable resource for information. However, they have many responsibilities, are not available at all times, and individuals may not have all the information available that is needed to make a field decision. The Contractor will only receive direction in the field from the Engineer and/or the City Project Manager.

1.12 LOCATING AND MARKING EXISTING UTILITIES

The Contractor shall have all existing utilities marked prior to construction and verify their location. Existing utility information shown on the Drawings has been confirmed by only limited locate and potholing data, and may not reflect the exact position of existing utilities, and may not show all the utility lines present.

The City will mark City-owned utilities, but other utilities will need to be located. Coordinate utility locates through the Utility Notification Center of Colorado, 811.

City-located utilities will be marked only one time. The Contractor shall be responsible for maintaining the locate marks. The Contractor must request the locates of City-owned utilities periodically as the work progresses rather than as a single event. Requests for locates shall not precede the construction activity in any given area by more than 2 weeks.

Utility potholing for location of existing utilities is required. All potholing must be completed and the information provided to the Project Engineer prior to installing any pipe.

1.13 CONSTRUCTION MATERIAL STOCKPILE REQUIREMENTS

Construction stockpiles for earth, bedding materials and pipe materials should be placed in off-street areas where possible, with prior arrangement with property owners and approval by the City. Limited stockpiling in street areas is permitted, but only in small quantities, limited to two days worth of work on any street. Street stockpiling shall be on the same side of the street as the trenching where practical. Contractor shall coordinate and review stockpiling with the City prior to the work.

Excavated material and imported backfill material that is not scheduled to be placed as backfill within two days shall be removed from the street stockpile. Stockpiles shall not block the gutter flowline. Measures to control migration of sediment from stockpiles should be put in place, especially if left overnight or over a weekend or other break in the work.

Manhole riser and cone sections, manhole frames and covers, pipe fittings and valves should not be stored in the street, but should be stored in an off-site area until the day it is to be installed. Asphalt millings shall be stored in offsite areas and kept covered.

1.14 CONSTRUCTION EQUIPMENT

The City has expressed the need to maintain the condition of the existing pavement and concrete infrastructure outside the project work areas, and along equipment and material haul routes. The use of appropriate construction equipment that is adequate to complete the required work for this project while

minimizing pavement and concrete damage outside the defined work areas shall be required. The Contractor shall be held responsible for damages outside the defined work areas created by his activities.

1.15 PROTECTION OF EXISTING UTILITIES

Existing utilities that are not scheduled for replacement, removal or relocation shall be protected to avoid disruption of service. Adequate shoring, bracing and blocking shall be put in place to avoid damage or shifting of the utility lines and trench materials. All repairs required due to the work of the Contractor shall be the responsibility of the Contractor.

1.16 OPERATING EXISTING VALVES AND HYDRANTS

Existing valves and hydrants are to be operated by City Utility Department personnel only. Contractor may operate new valves installed on the line segment they are installed on prior to acceptance by the City. Coordinate with City personnel and the Engineer when operating any new valve adjacent to an existing water line.

1.17 CONSTRUCTION WATER

Use of a fire hydrant to supply construction water will require the Contractor to obtain a hydrant meter using the City's eTRAKiT system. There is no charge for water usage on City projects. The Contractor must not waste water.

1.18 PROTECTION OF EXISTING LANDSCAPING

Existing landscaping in the vicinity of the work areas shall be protected from damage, including lawns, shrubs and trees. Landscaping that interferes with the work may be removed after discussions with the property owner and approval from the City and must be replaced in a manner satisfactory to the property owner and the Engineer. Damaged landscaping shall be replaced in-kind at the expense of the Contractor.

1.19 END OF WORKDAY SITE CONDITIONS

Pipe trenches shall be backfilled to within a maximum of 5 feet from the end of the pipe at the end of each work day. A solid traffic-duty cover shall be placed over any open trench.

Streets where there is active work and/or stockpiles placed shall be swept daily at the end of the work shift. All backfilled and stabilized trenches shall be checked daily and repaired as required by the Engineer.

Erosion control measures shall be checked for correct placement and good condition, and repaired as needed, at the end of each day.

All loose materials, packaging, waste, trash and similar items shall be cleaned up at the end of the day and placed in proper storage location or receptacles.

END OF SECTION

**SECTION 01010
SUMMARY OF WORK**

PART 1 GENERAL

1.01 LOCATION

- A. All work to be performed under this Contract is located at the areas shown on the attached drawings

1.02 DESCRIPTION OF WORK

- A. The work of this Contract consists of furnishing all labor, materials, equipment, and incidentals required and performing all construction, installation, and testing of all improvements, modifications, and additions, as shown on the Drawings and specified in these specifications. The work includes, but is not necessarily limited to: new piping and appurtenances; excavation, dewatering, and backfilling; connections to existing facilities and facilities constructed by others; pavement patching, pavement replacement, curb and gutter replacement, sidewalk replacement, bypass pumping, miscellaneous work and cleanup.

1.03 CONTRACTOR'S USE OF PREMISES

- A. Contractor will not have complete and exclusive use of the premises for construction of the work.
- B. Contractor shall limit the use of the premises for their work and for storage to allow for through traffic and operation of existing facilities during construction. The Contractor shall keep in mind that the Owner will continue to operate the existing facilities throughout construction.
- C. Contractor shall coordinate the use of the premises with the Owner. Areas requiring shutdown of the existing facilities shall be coordinated with the Owner 48 business hours prior to taking those facilities out of service.
- D. Contractor shall assume full responsibility for security of all their, and their subcontractor's, materials and equipment stored on the site.
- E. Contractor, if directed by the Owner and/or Engineer, shall move any stored items that interfere with the operations of the Owner.
- F. Contractor shall obtain and pay for use of additional storage if needed to perform the work.

1.04 OWNER OCCUPANCY

- A. Owner will occupy premises during performance of the work for their normal operations. Coordinate all operations with the Owner to minimize conflict and to facilitate Owner usage.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTIONS (NOT USED)

END OF SECTION
01010-1

SECTION 01200
MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Measurement and payment shall be as specified the City's *Engineering Code of Standards and Specifications*, latest edition, as published on the City website unless modified in this Section.
- B. Work to be performed under this contract will be paid for on a unit cost or lump sum basis under the appropriate unit cost or lump sum Bid Items shown on the Bid Form. No item of Work shown on the Drawings or in the Specifications will be considered for extra compensation due to a claim that it does not fall within the scope of one of the Bid items.
- C. Contractor shall, within 10 days of receipt of Notice to Proceed, submit a complete breakdown of lump sum and unit cost bid items (Schedule of Values) showing value assigned to each part of Work. Payment for materials delivered but not fully incorporated in Work will be made only if such materials are listed and assigned a value in Contractor's Schedule of Values.
- D. The work of this Contract consists of furnishing all labor, materials, equipment and incidentals required and performing all construction, installation and testing of all improvements, modifications and additions, all as shown on the Drawings and as specified in these Specifications.

1.02 BID ITEMS

- 1. Mobilization, Demobilization, Permits, Fees, Licenses, Administration
Shall include all labor, materials, equipment, and incidentals required for the Contractor to mobilize. Shall include all costs for Contractor's insurance and bonds, construction permits and fees, job trailers and site administration expenses, utilities including power, telephone, etc. This item shall not exceed more than ten (10) percent of the Base Bid. This item will be paid as defined in the City of Arvada *Engineering Code of Standards and Specifications*, latest edition.
- 2. Traffic and Pedestrian Control
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as a lump sum.
- 3. Sediment and Erosion Control
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as a lump sum.
- 4. Utility Locate Potholing
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as a lump sum.
- 5. Construction Survey
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as a lump sum.

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6. Landscape Restoration, including Topsoil, Seeding, Sod, and Fence
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lump.
7. Irrigation System Restoration
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lump sum.
8. Excavation Dewatering
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lump sum.
9. Owner Controlled Minor Contract Revisions
Owner controlled allowance of \$200,000.00 to be applied to address minor work required to provide a fully functioning water transmission line. Use of allowance will be documented.
10. Connect to Existing 18" Waterline
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lump sum.
11. Connect to Existing 12" Waterline
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lump sum.
12. 12" Waterline, C909 PVCO PC 235 psi, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lineal foot.
13. 12" Waterline, C909 PVCO PC 235 psi Restrained Joint, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lineal foot.
14. 12" Waterline, C900 DR 14 Fusible PVC, Horizontal Direction Drill, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lineal foot.
15. 12" 45° Bend w/ TB and Restrained, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each.
16. 12" 22.5° Bend w/ TB and Restrained, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each.
17. 12" 11.25° Bend w/ TB and Restrained, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each.

18. 12" Tee w/ TB and Restrained, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each.
19. 18" x 12" Tee w/ TB and Restrained, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each
20. 12" MJ Gate Valve, Restrained, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each.
21. 18" MJ Butterfly Valve, Restrained, Direct Bury, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each.
22. 12" Plug, Restrained, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each.
23. 12" Solid Sleeve, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each
24. 12" Waterline Lowering, Restrained, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each.
25. 12" Waterline Casing, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lineal foot.
26. 2" Air Release and Vacuum, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each.
27. 2" Blow-off, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each.
28. Flowfill Cut-off Wall, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each.
29. Flowfill, as Directed by City
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as cubic yard.

30. 2" Thick Layer of Extruded Polystyrene Insulation Foam, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as square foot.
31. Removal and Disposal of Asphalt Pavement with Full Depth Sawcut
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as square yard.
32. Asphalt Patch, Hwy 72, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as square yard.
33. 2" Mill
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as square yard.
34. 4" HBP Grade SG, (75) PG 64-22, 20% RAP Asphalt
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as ton.
35. 3" HBP Grade S, (75) PG 64-22, 20% RAP Asphalt
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as ton.
36. 2" HBP Grade Sx, (75) PG 64-22 Asphalt
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as ton.
37. 4" HBP Grade S, (75) PG 58-28, 20% RAP Asphalt
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as ton.
38. 2" HBP Grade Sx, (75) PG 58-28 Asphalt
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as ton.
39. 4" White Line, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lineal foot.
40. 6" White Line, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lineal foot.
41. Double Yellow Line, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lineal foot.

42. Right Turn Arrow, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each.
43. 24" Stop Bar, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lineal foot.
44. 2 ft x 8 ft Crosswalk Bar, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each.
45. Bike Lane Arrow Symbol, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each.
46. 2.5' Curb and Gutter Removal and Replacement, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lineal foot.
47. Remove and Replace ADA Ramp, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as each.
48. Remove and Replace Concrete Apron, Complete in Place
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as square yard.
49. Hauling, Drying, Mixing, and Disposal of Drilling Mud
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lump sum.
50. Stabilization Material – Class 6 Road base, as Needed
Shall include all labor, materials, equipment, and incidentals required for construction. This item will be paid as lineal foot.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

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SECTION 01310
CONSTRUCTION SCHEDULES

PART 1 GENERAL

1.01 CONTRACTOR REQUIREMENTS INCLUDED

- A. The Contractor shall submit his/her proposed Schedule of Work in accordance with the provisions and time frames stated in this Section and in the Contract. Three copies of all Schedules and Schedule updates shall be submitted initially and monthly thereafter.
- C. Contractor shall submit updated Schedule of Work monthly or more frequently when required and acceptable to the Engineer. Progress payment shall not be made unless the Contractor submits the monthly schedule update.
- D. Contractor's Schedule is to be considered and used as a working tool, and will not become part of Contract or Contract Documents.

1.02 RELATED REQUIREMENTS

- A. Conditions of Contract
- B. Section 01010: Summary of Work

1.03 FORM OF SCHEDULES

- A. The Schedule of Work shall utilize a Critical Path Method (CPM). Contractor shall prepare, maintain, and furnish current detailed progress and schedule charts using the CPM schedule, which shall support the Contract performance dates. Schedule shall identify Work in Contract in sufficient detail to ensure compliance with Contract dates, schedules, and sequences of construction.
- B. CPM schedule shall be maintained throughout life of Contract. Contractor shall designate an authorized representative within its firm who will be responsible for preparation of the CPM network plan and schedule and for monitoring progress of Project.
 - 1. Schedule submittal: In accordance with the Contract. Contractor shall submit to the Engineer complete CPM. A schedule of estimated monthly progress payments shall be developed by Contractor and submitted with CPM network plan. Contractor shall also submit Schedule of Values and schedule of Shop Drawings and sample submittals.
 - 2. Acceptance of Contractor's Schedule by Engineer will not relieve Contractor from compliance with all conditions of the Contract. Errors and omissions in accepted Contractor's Schedule will not be cause for future claims by Contractor for extra costs or increased Contract Time.
 - 3. Schedule is Contractor's schedule, prepared by him and he remains solely responsible for adherence thereto.

4. Changes to Schedule: Contractor may make changes to its current plan and schedule upon notification to Engineer and City with five (5) business days of notice. Contractor shall submit changes schedule for any of the following reasons:
 - a. When delay in completion of any activity or group of activities indicates an extension of scheduled Project completion including delays which may be involved with change orders, strikes, unusual weather, etc.
 - b. Delays in submittals or deliveries or work stoppage are encountered which make re-planning or rescheduling of Work necessary.
 - c. Schedule does not represent actual prosecution and progress of Project.
5. Engineer and City's acceptance of changes to Schedule and all relevant data is contingent upon compliance with all other paragraphs of this Section and any other previous agreements or requirements by Engineer and five (5) business days for the City to review.
6. Contractor's cost of revisions to Schedule due to any cause shall be responsibility of Contractor.
7. Adjustment of Contract Completion: Contract Time will be adjusted only by Change Order for causes specified in this Contract. In the event Contractor requests an extension of Contract Time, he shall furnish such justification, CPM data, and supporting evidence as follows for a determination as to whether or not Contractor is entitled to an extension of Time under provisions of Contract: all CPM logic revisions, duration changes, and cost changes for Work in question and its relationship to other activities on accepted, current network plan.
8. Contractor shall submit a brief narrative report as part of monthly update. Narrative report shall include a description of problem areas; current and anticipated delaying factors and their estimated impact on performance of other activities and completion dates; and an explanation of corrective action taken or proposed.

C. Contractor failure to comply with this Section shall be a material breach of this Contract.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01600
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Engineer will determine which products shall be used.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
 - 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger Project structure.
 - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 - 4. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
 - 5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 6. Protect stored products from damage and liquids from freezing.
 - 7. Provide a secure location and enclosure at Project site for storage of materials and equipment by the Town's construction forces. Coordinate location with the Town.

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 - 1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to the Town.
 - 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for the Town.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 - 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.

2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. The Town reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Engineer will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
 6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
 1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 3. Products:
 - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered.
 - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
 4. Manufacturers:
 - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered.

- b. Non-restricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
- 5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
- C. Visual Matching Specification: Where Specifications require "match Engineer's sample", provide a product that complies with requirements and matches Engineer's sample. Engineer's decision will be final on whether a proposed product matches.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Engineer from manufacturer's full range" or similar phrase, select a product that complies with requirements. Engineer will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Engineer will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Engineer may return requests without action, except to record noncompliance with these requirements:
 - 1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - 3. Evidence that proposed product provides specified warranty.
 - 4. List of similar installations for completed projects with project names and addresses and names and addresses of Engineers and the Towns, if requested.
 - 5. Samples, if requested.

END OF SECTION

SECTION 02448
HORIZONTAL DIRECTIONAL DRILLING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Excavation for approach trenches and pits.
 - 2. Horizontal directional drilling.
 - 3. Pipe.
- B. Related sections include, but are not necessarily limited to:
 - 1. *Engineering Code of Standards and Specifications*, 2023 Edition
 - a. Section 300 – Soils and Earthwork
 - b. Section 420 – Potable and Raw Water Main Construction
 - c. Section 800 – Concrete Mix Design and Construction

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. American Association of State Highway and Transportation Officials:
 - a. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
 - 2. ASTM International:
 - a. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
 - b. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
 - c. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - d. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
 - e. ASTM F1962 - Standard Guide for Use of Maxi-Horizontal Directional Drilling for Placement of Polyethylene Pipe or Conduit Under Obstacles, Including River Crossings.
 - 3. National Utility Contractors Association:
 - a. NUCA - HDD Installation Guidelines.

1.3 DESIGN REQUIREMENTS

- A. Design Criteria:
 - 1. Drilling Steering System: Remote with continuous electronic monitoring of boring depth and location.
 - 2. Ratio of Reaming Diameter to Pipe Outside Diameter:
 - a. Nominal Pipe Diameter of 6 Inches and Smaller: 1.5 maximum.
 - b. Nominal pipe diameter larger than 6 Inches: Submit recommended ratio and reaming procedures for review.

1.4 SUBMITTALS

- A. Shop Drawings:
 - 1. See Specification Section 418.07 of *Engineering Code of Standards and Specifications*, 2023 Edition for requirements for the mechanics and administration of the submittal process.
 - 2. Submit technical data for equipment, method of installation, and proposed sequence of construction.
 - 3. Include information pertaining to pits, dewatering, method of spoils removal, equipment size and capacity, equipment capabilities including installing pipe on radius, type of drill bit, drilling fluid, method of monitoring line and grade and detection of surface movement, name plate data for drilling equipment and mobile spoils removal unit.
- B. Product Data:
 - 1. Identify source of water used for drilling.
 - 2. Submit copy of approvals and permits for use of water source.
- C. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.5 CLOSEOUT SUBMITTALS

- A. See Specifications Section 418.07 of *Engineering Code of Standards and Specifications*, 2023 Edition for requirements for the mechanics and administration of the closeout submittal process.

1.6 QUALITY ASSURANCE

- A. Perform work in accordance with the following:
 - 1. NUCA HDD Installation Guidelines.
 - 2. ASTM F1962.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Provide temporary end caps and closures on piping and fittings until pipe is installed.
- C. Protect pipe from entry of foreign materials and water by temporary covers, completing sections of work, and isolating parts of completed system.
- D. Accept products on site in manufacturer's original containers or configuration. Inspect for damage.
- E. Use shipping braces between layers of stacked pipe. Stack piping lengths no more than 3 layers high.
- F. Store field joint materials indoors in dry area in original shipping containers. Maintain storage temperature of 60 to 85 degrees F.
- G. Support pipes with nylon slings during handling.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Section 01600 - Product Requirements: Environmental conditions affecting products on site.
- B. Conduct operations so as not to interfere with, interrupt, damage, destroy, or endanger integrity of surface or subsurface structures or utilities, and landscape in immediate or adjacent areas.

1.9 COORDINATION

- A. Coordinate work with all utility owners in the construction area.

PART 2 PRODUCTS

1.1 DRILLING FLUID

- A. Drilling Fluid: Liquid bentonite clay slurry; totally inert with no environmental risk.

1.2 PIPE

- A. Furnish materials in accordance with City of Arvada standards.
- B. Water Distribution System Pipe: PVC casing as shown in Contract Drawings.

1.3 FILL MATERIALS

- A. Subsoil Fill: Refer to Details of the Contract Drawings and as specified in Section 300 of *Engineering Code of Standards and Specifications*, 2023 Edition.

1.4 WATER SOURCE

- A. Water: Potable, obtained from the City of Arvada.

1.5 UNDERGROUND PIPE MARKERS

- A. Trace Wire: Electronic detection materials for non-conductive piping products.
 - 1. Unshielded 10 gage copper wire.
 - 2. Conductive tape.

1.6 ACCESSORIES

- A. Grouting mix design shall be appropriate for the specific pipe materials and site conditions.
- B. Flowable Fill shall conform to MGPEC Section 19.

PART 3 EXECUTION

1.1 EXAMINATION

- A. Section 01000 – Special Conditions for verification of existing conditions before starting work.
- B. Verify connection to existing piping system size, location, and invert elevations are in accordance with Drawings.

1.2 PREPARATION

- A. Call Local Utility Line Information service at One Call (811) not less than five working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.
- B. Locate, identify, and protect utilities indicated to remain from damage.
- C. Identify required lines, levels, contours, and datum locations.
- D. Protect plant life, lawns and other features remaining as portion of final landscaping.
- E. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- F. Establish pipe elevations with not less than 4.5 feet of cover.
- G. Establish minimum 18 inches separation between piping and other utilities in accordance with City of Arvada standards.

1.3 DEWATERING

- A. Intercept and divert surface drainage, precipitation, and groundwater away from excavation through use of dikes, curb walls, ditches, pipes, sumps or other means.
- B. Develop and maintain substantially dry subgrade during drilling and pipe installation.
- C. No water shall be discharge to the sanitary sewer.
- D. Comply with Colorado Department of Public Health and Environment requirements for discharging water to watercourse, preventing stream degradation, and erosion and sediment control.

OR

- E. Haul and dispose of water at approved facility.

1.4 EXISTING WORK

- A. Maintain access to all existing indicated to remain. Modify pipe installation to maintain access to existing facilities.

1.5 EXCAVATION

- A. Excavate subsoil as specified in Section 362.00 of *Engineering Code of Standards and Specifications*, 2023 Edition.
- B. Excavate approach trenches and pits in accordance with shop drawings and as site conditions require. Minimize number of access pits.
- C. Provide sump areas to contain drilling fluids.
- D. Restore areas after completion of drilling and carrier pipe installation.

1.6 DRILLING

- A. Drill pilot bore with vertical and horizontal alignment as indicated in shop drawings.
- B. Guide drill remotely from ground surface to maintain alignment by monitoring signals transmitted from drill bit.
 - 1. Monitor depth, pitch, and position.
 - 2. Adjust drill head orientation to maintain correct alignment.
- C. Inject drilling fluid into bore to stabilize hole, remove cuttings, and lubricate drill bit and pipe.
- D. Continuously monitor drilling fluid pumping rate, pressure, viscosity, and density while drilling pilot bore, back reaming, and installing pipe to ensure adequate removal of soil cuttings and stabilization of bore.
 - 1. Provide relief holes when required to relieve excess pressure.
 - 2. Minimize heaving during pullback.
- E. Calibrate and verify electronic monitor accuracy during first 50 feet of bore in presence of Engineer before proceeding with other drilling.
- F. After completing pilot bore, remove drill bit.

1.7 DRILLING OBSTRUCTIONS

- A. When obstructions are encountered during drilling, notify Engineer immediately. Do not proceed around obstruction without Engineer's approval.
- B. For conditions requiring more than 3 feet deviation in horizontal alignment, submit new shop drawings to Engineer for approval before resuming work.
- C. Maintain adjusted bore alignment within easement or right-of-way.

1.8 PIPE INSTALLATION

- A. After completing pilot bore, remove drill bit. Install reamer and pipe pulling head.
 - 1. Select reamer with minimum bore diameter required for pipe installation.
- B. Attach pipe to pipe pulling head. Pull reamer and pipe to entry pit along pilot bore.
- C. Inject drilling fluid through reamer to stabilize bore and lubricate pipe.

- D. Install piping with horizontal and vertical alignment as shown on Drawings.
- E. Protect and support pipe being pulled into bore so pipe moves freely and is not damaged during installation.
- F. Do not exceed pipe manufacturer's recommended pullback forces.
- G. Install trace wire continuous with each bore. Splice trace wire only at intermediate bore pits. Tape or insulate trace wire to prevent corrosion and maintain integrity of pipe detection.
 - 1. Terminate trace wire for each pipe run at structures along pipe system.
 - 2. Provide extra length of trace wire at each structure, so trace wire can be pulled 3 feet out top of structure for connection to detection equipment.
 - 3. Test trace wire for continuity for each bore before acceptance.
- H. Provide sufficient length of pipe to extend past termination point to allow connection to other pipe sections.
- I. Allow minimum of 24 hours for stabilization after installing pipe before making connections to pipe.
- J. Mark location and depth of bore with spray paint on paved surfaces, and wooden stakes on non-paved surfaces at 25-foot intervals.

1.9 SLURRY REMOVAL AND DISPOSAL

- A. Contain excess drilling fluids at entry and exit points until recycled or removed from site. Provide recovery system to remove drilling spoils from access pits.
- B. Remove, transport and legally dispose of drilling spoils.
 - 1. Do not discharge drilling spoils in sanitary sewers, storm sewers, or other drainage systems.
 - 2. When drilling in suspected contaminated soil, test drilling fluid for contamination before disposal.
- C. When drilling fluid leaks to surface, immediately contain leak and barricade area from vehicular and pedestrian travel before resuming drilling operations.
- D. Complete cleanup of drilling fluid at end of each work day.

1.10 BACKFILL

- A. Isolated Street Cuts – Service line cuts and other isolated utility repairs or modifications in a paved street area shall be backfilled with suitable backfill as defined in Section 360.01 – Definitions of *Engineering Code of Standards and Specifications*, 2023 Edition, or with backfill meeting the material gradation requirements of Class 6, in accordance with Table 703.03 of CDOT Standards and Specifications for Road and Bridge construction.
- B. Constrained Areas – Areas in which proper backfill compaction cannot be achieved such as utility crossing, under curb and gutter, or any area identified by the Certified Materials Tester or Construction Inspector, shall be backfilled with Controlled Low Strength material (CLSM) “flowable fill.”

- C. The contractor shall backfill with selected and/or flowable backfill material in lieu of backfilling with excavated native trench material at all excavated locations beneath asphalt or concrete flatwork. The City representative will determine, at the time of excavation, the need and use of either select of flowable backfill in accordance with Section 300 of *Engineering Code of Standards and Specifications*, 2023 Edition. Selected of flowable backfill materials shall meet the requirements of Section 300 of *Engineering Code of Standards and Specifications*, 2023 Edition. CDOT Class 1 Structural backfill will be allowed as a selected backfill material. The required method of removing trench spoils is to load them into dump trucks during excavation for immediate removal from the job site.
- D. Backfill approach trenches and pits with subsoil fill to contours and elevations as indicated on the Drawings.

1.11 ERECTION TOLERANCES

- A. Maximum Variation from Horizontal Position: 36 inches.
- B. Maximum Variation from Vertical Elevation: 24 inches.
- C. Minimum Horizontal and Vertical Clearance from Other Utilities: 18 inches.
- D. When pipe installation deviates beyond specified tolerances, abandon bore, remove installed pipe, re-bore, and reinstall pipe in correct alignment.
- E. Fill abandoned bores greater than 3 inches in diameter with grout or flowable fill material.

1.12 FIELD QUALITY CONTROL

- A. Section 100 of *Engineering Code of Standards and Specifications*, 2023 Edition.

1.13 CLEANING

- A. Upon completion of drilling and pipe installation, remove drilling spoils, debris, and unacceptable material from approach trenches and pits. Clean up excess slurry from ground.
- B. Restore approach trenches and pits to original condition.
- C. Remove temporary facilities for drilling operations.

END OF SECTION

APPENDIX A
GEOTECHNICAL REPORT



GEOTECHNICAL STUDY

Indiana Street Water Main
Arvada, Colorado



Prepared for:

**Mr. Jason Murray
J&T Consulting, Inc.
305 Denver Avenue, Suite D
Fort Lupton, CO 80621**

**Project No. 23.118
December 19, 2023**

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December 19, 2023**

Prepared by:

A handwritten signature in black ink, appearing to read 'Diana C. Prado-Garzón'.

**Diana C. Prado-Garzón, E.I.
Staff Engineer**

Reviewed by:



**Jonathan A. Crystal, P.E.
Project Engineer**

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COMMON ABBREVIATIONS AND ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
ABC	aggregate base course
ACI	American Concrete Institute
ADA	Americans with Disabilities Act
ADSC	International Association of Foundation Drilling
AI	Asphalt Institute
APM	asphalt paving material
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
bgs	below ground surface
CDOT	Colorado Department of Transportation
CBR	California Bearing Ratio
CFR	Code of Federal Regulations
CGS	Colorado Geological Survey
CKD	cement of kiln dust stabilized subgrade
CMU	concrete masonry unit
CTB	cement treated base course
deg	degree
EDLA	equivalent daily load application
e_m	edge moisture variation distance
EPS	expanded polystyrene
ESAL	equivalent single axle loads
f'c	specified compressive strength of concrete at the age of 28 days
F_a	seismic site coefficient
FHWA	Federal Highway Administration
FS	factor of safety
F_v	seismic site coefficient
GSA	global stability analysis
GVW	gross vehicle weight
IBC	International Building Code
ICC-ES	International Code Council Evaluation Services, Inc.
IRC	International Residential Code
kip	1,000 pounds-force
km	kilometer
LTS	lime treated subgrade
MDD	maximum dry density
mg/L	milligrams per liter
MGPEC	Metropolitan Government Pavement Engineers Council
mm	millimeter
Mr	resilient modulus
MSE	mechanically stabilized earth
mV	millivolts
NAPA	National Asphalt Pavement Association
N_{DESIGN}	design gyrations
OMC	optimum moisture content

OSHA Occupational Safety and Health Administration
OWTS onsite wastewater treatment system
PCA..... Portland Cement Association
PCC..... portland cement concrete
pcf pounds per cubic foot
pci..... pounds per cubic inch
pH..... power of hydrogen
psf pounds per square foot
psi..... pounds per square inch
PT post-tension
RAP..... recycled asphalt pavement
S_s mapped spectral accelerations for short periods
UBC Uniform Building Code
USGS United States Geological Survey

Important Information about This Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer

will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the “Findings” Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site’s subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual site-wide subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report’s Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals’ misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals’ plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note*

conspicuously that you’ve included the material for information purposes only. To avoid misunderstanding, you may also want to note that “informational purposes” means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled “limitations,” many of these provisions indicate where geotechnical engineers’ responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a “phase-one” or “phase-two” environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer’s services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer’s recommendations will not of itself be sufficient to prevent moisture infiltration.* Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists.*



**GEOPROFESSIONAL
BUSINESS
ASSOCIATION**

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1. PURPOSE

1.1 GENERAL

CMT Technical Services - Colorado (CMT) performed a geotechnical study for a proposed water main to be constructed along portions of Indiana Street, Candelas Parkway, and 91st Avenue in Arvada, Colorado. The study was made to characterize existing subsurface conditions along the alignment to provide information for planning, pipe and bedding design, construction estimating, and other pertinent geotechnical issues. Information gathered during the field exploration and laboratory testing is summarized in Figures 1 and 2 and Appendices A and B. CMT's opinions and recommendations presented in this report are based on data generated during this field exploration, laboratory testing, and its experience.

1.2 SCOPE OF SERVICES

The scope of services performed is detailed in "CMT's Master Services Agreement for Geotechnical Engineering, Materials Testing, Construction Observation, and Quality Control Services", No. F211202, executed on January 19, 2022. Detailed project scope information was provided by J&T Consulting, Inc. in an email dated September 13, 2023.

2. PROPOSED CONSTRUCTION

The water main alignment is about 5,740 feet long, beginning near the intersection of Indiana Street and State Highway 72, extending north about 3,300 feet to Candelas Parkway. The alignment will turn west to follow Candelas Parkway about 1,650 feet to 91st Avenue. The alignment will turn southwest to follow 91st Avenue about 790 feet to the project termination. The pipe will be buried about 5 feet below surface grades. An exception is where the pipe must extend below a culvert bearing about 20 feet below surface grade, requiring the pipe to be constructed at a depth of about 30 feet, likely by directional drilling.

3. SITE CONDITIONS

The project is located in Arvada, Colorado as shown in a vicinity map, Figure 1. The streets along which the alignment follows are paved with APM. The roadway surface slopes down to the north from its beginning at Highway 72 to the culvert crossing and then slopes back up to its terminus. The roadways are fronted by open land, residential subdivisions, and commercial properties. Topographic relief is about 105 feet from the south and about 64 feet from the north to near the culvert.



Photo 1. View looking south at Indiana Street at its intersection with State Highway 72.

4. FIELD EXPLORATION

CMT drilled 14 borings at the locations indicated in Figure 2 to depths of 15 to 30 feet to explore subsurface conditions. Graphical logs of the subsurface conditions observed, locations of sampling, and further explanation of the exploration are presented in the boring logs contained in Appendix A.

One of the borings was completed as a monitoring well to observe groundwater level fluctuation. It was constructed according to environmental protocols to allow groundwater quality sampling.



Photo 2. View looking north at drilling operations on Indiana Street.

5. LABORATORY TESTING

CMT personnel returned samples obtained during field exploration to its laboratory where professional staff visually classified them and assigned testing to selected samples to evaluate pertinent engineering properties. Laboratory tests performed are listed in Table 5.1. Further discussion of laboratory testing and the laboratory test results are presented in Appendix B.

TABLE 5.1. Laboratory Testing Performed

Laboratory Test	To Evaluate
Grain size analysis	Grain size distribution for classification purposes.
Atterberg limits	Soil plasticity for classification purposes.
Standard Proctor	Moisture/density relationship of compacted soil.
Water soluble sulfate content	Potential corrosivity of the soil on cementitious material.
pH, water soluble chloride content, and resistivity	Potential corrosivity of the soil to metal.

The water soluble chloride tests were not complete at the time of this report and will be forwarded upon the test's completion.

6. SUBSURFACE CONDITIONS

CMT's borings encountered:

- Seven to 11 inches of APM at the surface of all borings.
- Fill comprised of clay, sand, and gravel in various combined percentages to depths of about 1-1/2 to 5 feet in all borings except B-9, which exhibited no fill.
- Native soil consisting of clay with varying percentages of sand to depths 5 to 15 feet in all borings except B-5, B-10, and B-13, in which no native clay was encountered.
- Relatively clean and silty sand below the clay in B-3 to a depth of 13 feet.
- Claystone bedrock below the native soil and fill extending to the depth explored in all borings except B-2, B-3, and B-4.
- Groundwater was encountered at a depth of 12 feet in Boring B-14. Groundwater was not encountered in the remaining borings during drilling.

These observations represent the conditions at the time of field exploration and may not be indicative of other times or other locations. Groundwater can be expected to fluctuate and can be influenced by variations in seasons, weather, precipitation, drainage, vegetation, landscaping, irrigation, leakage of water and/or water utility systems, etc., both onsite and offsite. Discontinuous zones of perched water may exist or develop within the overburden material and/or upper zones of the bedrock. CMT's field explorations were performed during the fall when groundwater levels are usually low. Groundwater levels may be higher in the spring and early summer.

7. RECOMMENDATIONS

7.1 THRUST BLOCK LOADS

The subsurface conditions along the proposed water line alignment consisted predominantly of stiff clay. Thrust blocks placed within the clay should be designed for a maximum allowable lateral soil bearing pressure of 100 psf/ft of depth. For example, if the thrust block is placed 8 feet deep, then $100 \text{ (psf/ft)} \times 8 \text{ (ft)} = 800 \text{ psf}$.

7.2 EXCAVATIONS

Conventional earthmoving equipment should be adequate to excavate the onsite soil and/or bedrock. All excavations should be properly sloped and/or braced, and local and federal safety codes observed. Slopes and other areas void of vegetation should be protected against erosion.

It is the contractor's responsibility to provide safe working conditions and comply with the regulations in OSHA Standards-Excavations, 29 CFR Part 1926. The following guidelines are provided for planning purposes. Sloping and shoring requirements must be evaluated at the time of construction by the contractor's competent person as defined by OSHA. The geotechnical engineer is NOT the contractor's "competent person" in any circumstance, including but not limited to, by way of default or delegation. OSHA classifications for various material types and the steepest allowable slope configuration corresponding to those classifications are shown in Table 7.1.

TABLE 7.1. Allowable Slope Configuration for Onsite Material

Material Type	OSHA Classification	Steepest Allowable Slope Configuration*
Competent claystone bedrock**	Type A	3/4:1
Weathered bedrock and all soil	Type C	1-1/2:1

* Units horizontal to units vertical. The values shown apply to excavation less than 20 feet in height. Conditions can change and evaluation is the contractor's responsibility.

** Claystone bedrock having a blow count of 50/12 or harder.

The preceding classifications and slope configurations assume that excavations are above the groundwater table, there is no standing water in the excavations, and there is no seepage from the slope into the excavations, unless otherwise specified. The preceding classifications and slope configurations assume that the material in the excavations is not fractured, adversely bedded, jointed, nor left open to desiccate, crack, or slough, and is protected from surface runoff. There are other considerations regarding allowable slope configurations that the contractor is responsible for, including proximity of equipment, stockpiles, and other surcharge loads to the excavation. The contractor's competent person is responsible for all decisions regarding slope configuration and safety conditions for excavations.

Excavations should not undermine existing foundation systems of structures or infrastructure, unless they are adequately protected. At a minimum, new excavations should not intersect a line drawn using the steepest allowable slope configuration from Table 7.1 down and away from the bottom edge of the existing foundation systems or bottom edge of infrastructure. If this condition cannot be met, shoring or staged excavations may be required. If shoring is required, a condition survey of the adjacent structures is recommended before construction starts and upon completion of construction. In CMT's experience, condition surveys include, but may not be limited to, photographs of any distress to adjacent structures.

Permanent slopes should be no steeper than 3:1 and revegetated or otherwise protected from erosion.

7.3. TRENCH BACKFILL

Onsite inorganic soil is suitable for trench backfill. All topsoil, existing manmade fill, frozen material, and soil containing organic material should be removed from fill areas prior to placement of fill and should be removed from the fill prior to placement. Backfill should be moisture conditioned and compacted according to City of Arvada requirements.

An acceptable alternative is to use CDOT Class 1 material for trench backfill. Placing 2 feet of CDOT Class 1 material in the upper portion of the trench over the native clay backfill would better distribute wheel loads applied to the pavement surface than the clays. In essence, this approach would bring the traffic load applied to the native soil backfill to near nil. CDOT requires that Class 1 backfill be compacted to not less than 95% of maximum density, as determined in accordance with AASHTO T180.

Along with traditional methods of tampers and plate compactors for densifying bedding around pipes, using concrete vibrators to is considered an acceptable method, provided it is properly demonstrated. Placing coarse gravel below the pipe and up to the spring line will provide an even higher shear strength than the typical squeegee used. An alternative would be to form a cradle with low strength concrete to support the pipe. Considering the clays encountered have high plasticity and are likely expansive, using water to help densify the bedding should be minimized.

7.4 DEWATERING

The depth of pipe placement over most of the alignment is above the groundwater surface. Groundwater was encountered in only one boring during drilling at a depth of about 12 feet. Should groundwater be measured in the well in Boring B-6 at a depth influencing the pipe construction below the culvert, the soil profile would be clay and bedrock, both expected to have a low permeability. Because directional drilling does not require deep entry or exit pits, dewatering can likely be localized, if necessary. Should a dewatering system be required, more detailed field evaluation of the groundwater may be necessary for design.

8. SOIL CHEMICAL TESTING

8.1 SULFATE EXPOSURE

Water soluble sulfate contents of 0.00% to 0.50% were measured on samples of clay and clayey sand. Results are summarized in Appendix B. The PCA publication, "Design and Control of Concrete Mixtures 2002" and the ACI publication, "Building Code Requirements for Structural Concrete and Commentary" consider this range negligible to severe for water soluble sulfate exposure. Recommendations for all concrete which will be in contact with or within 6 inches of the clay or sandy clay are shown in Table 8.1.

TABLE 8.1. Information from ACI 318-08 - Table 4.3.1

Water Soluble Sulfates (%)	Exposure Class	Maximum (w/cm)*	Minimum f'c, (psi)	Cementitious materials† (types)			Calcium Chloride Admixture
				ASTM C150	ASTM C595	ASTM C1157	
<0.10	S0	N/A	2,500	No type restriction	No type restriction	No type restriction	No restriction
≥0.10 to <0.20	S1 Moderate	0.50	4,000	II‡	IP (MS) IS (<70) (MS)	MS	No restriction
≥0.20 to ≤2.00	S2 Severe	0.45	4,500	V§	IP (HS) IS (<70) (HS)	HS	Not permitted
>2.00	S3 Very Severe	0.45	4,500	V + pozzolan or slag	IP (HS)+pozzolan or slag or IS (<70) (HS)+pozzolan or slag	HS+pozzolan or slag	Not permitted

*For lightweight concrete, see ACI 318-08 4.1.2.

†Alternative combinations of cementitious materials listed in Table 4.3.1 shall be permitted when tested for sulfate resistance and meeting the criteria in ACI 318-08 4.5.1.

‡For seawater exposure, other types of Portland cements with tricalcium aluminate (C₃A) contents up to 10 percent are permitted if the w/cm does not exceed 0.40.

§Other available types of cement such as Type III or Type I are permitted in Exposure Classes S1 or S2 if the C₃A contents are less than 8 or 5 percent, respectively.

|| The amount of the specific source of the pozzolan or slag to be used shall not be less than the amount that has been determined by service record to improve sulfate resistance when used in concrete containing Type V cement. Alternatively, the amount of the specific source of the pozzolan or slag to be used shall not be less than the amount tested in accordance with ASTM C1012 and meeting the criteria in ACI 318-08 4.5.1.

Refer to ACI 318-08 R4.3.1 for further interpretation of this table.

8.2 SOIL CORROSIVITY

Results of soil chemical testing are presented in Table 8.2. Table A.1 of the AWWA Standard for Polyethylene Encasement for Ductile-Iron Pipe Systems assigns point values to the results of soil chemical tests. If the sum of the points assigned to a given sample is 10 points or greater, AWWA considers the soil corrosive to ductile iron pipe, and states that protection is needed. CMT recommends manufacturers be consulted by the design team prior to selection and installation of products that will be in contact with the onsite material.

TABLE 8.2. Summary of Soil Chemical Test Results

Chemical Test	Test Results
Chloride content (mg/L)	7,348 to 63,060,076
pH	7.9 to 8.5
Laboratory resistivity (ohm-cm)	250 to 880
Sulfate exposure (%)	0.00 to 0.50

9. GEOTECHNICAL RISK

The concept of risk is an important aspect of any geotechnical study. The primary reason for this is that the analytical methods used by geotechnical engineers are generally empirical and must be tempered by engineering judgment and experience, therefore, the solutions or recommendations

presented in any geotechnical study should not be considered risk free, and more importantly, are not a guarantee that the interaction between the soil and the proposed construction will perform as predicted, desired, or intended. The engineering recommendations presented in the preceding sections constitute CMT's best estimate of those measures that are necessary to help the structure/pavement perform in a satisfactory manner based on the information generated during this study, training, and experience in working with these conditions.

10. LIMITATIONS

This document has been prepared as an instrument of service for the exclusive use of J&T Consulting, Inc. for the specific application to the project as discussed herein and has been prepared in accordance with geotechnical engineering practices generally accepted in the state of Colorado at the date of its preparation. No warranties, either expressed or implied, are intended or made. This document should not be assumed to contain information that is sufficient for other purposes or to satisfy the needs of other parties.

The findings of this study are valid as of the date of its preparation. Changes in the conditions of a property can occur with the passage of time, whether due to natural processes or the works of people on this or adjacent properties. Standards of practice evolve in engineering and changes in applicable or appropriate standards may occur, whether a result from legislation or the broadening of knowledge. Accordingly, the findings of this study may be invalidated wholly or partially by changes outside of CMT's control, therefore, this study is subject to review and should not be relied upon without such review after a period of 3 years.

In the event that changes, including but not limited to, the nature, type, design, size, elevation, or location of the project or project elements as outlined in this report are made, the conclusions and recommendations contained in this report shall not be considered valid unless CMT reviews the changes and either confirms or modifies the conclusions of this report in writing.

CMT should be retained to review final plans and specifications that are developed for proposed construction to judge whether the recommendations presented in this report and any addenda have been appropriately interpreted and incorporated in the project plans and specifications as intended.

The exploration locations for this study were selected to obtain a reasonably accurate depiction of underground conditions for design purposes and these locations are often modified based on accessibility and the presence of underground or overhead utility conflicts. Variations from the soil conditions encountered are possible. These variations may necessitate modifications to CMT's design recommendations, therefore, CMT should be retained to observe subsurface conditions, once exposed, to evaluate whether they are consistent with the conditions encountered during CMT's exploration and that the recommendations of this study remain valid. If parties other than CMT perform these observations and judgements, they must accept responsibility to judge whether the recommendations in this report remain appropriate.

CMT's scope of services for this report did not include either specifically, or by implication, any environmental assessment of the site or identification of contaminated or hazardous material or

conditions. Additionally, none of the services performed in connection with this study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not, of itself, be enough to prevent mold from growing in or on the structures involved.

At a minimum, CMT should be retained during construction to observe and/or test:

- completed excavations.
- placement and compaction of fill.
- proposed import or onsite fill material.
- placement and compaction of pavement subgrade, subbase, base course and asphalt.

CMT offers many other construction observations, materials engineering, and testing services and can be contacted to discuss further.



FIGURE 1
Vicinity Map

PROJECT NO:	23.118		
PROJECT NAME:	Indiana Street Water Main		
DRAWN BY:	MSR	CHECKED BY:	--
DWG DATE:	11.13.23	REV. DATE:	--





PROJECT NO:	23.118			FIGURE 2 Site Plan and Boring Locations	
PROJECT NAME:	Indiana Street Water Main				
DRAWN BY:	MSR	CHECKED BY:	--		
DWG DATE:	12.12.23	REV. DATE:	--		



APPENDIX A

Field Exploration

FIELD EXPLORATION

Samples of the subsoil were obtained at this site using a modified California sampler driven into the soil by dropping a 140 pound hammer through a free fall of 30 inches. The modified California sampler is a 2-1/2 inch outside diameter by 2 inch inside diameter device lined with brass tubes. The procedure to drive the modified California sampler into the soil and to record the number of blows required to do so is known as a penetration test. The number of blows required for the sampler to penetrate 12 inches gives an indication of the relative stiffness of cohesive soil, relative density of non-cohesive soil, and relative hardness of sedimentary bedrock material encountered. Bulk samples were collected from cuttings generated during drilling. Locations of sampling and penetration test results are presented on the boring logs contained in this appendix.

CMT installed a temporary monitoring well in Boring B-6. Groundwater can be expected to fluctuate with variations in seasons, drainage, site vegetation, irrigation, or weather conditions.

The monitoring well was constructed using 1-1/2 inch diameter PVC pipe consisting of slotted and non-slotted intervals. Refer to the boring logs for specific well completion details. Silica sand was typically placed from the base of the slotted pipe to the top of the slotted pipe interval, and a bentonite seal placed above that. The bentonite seal was about 4 feet thick. The monitor well pipe terminates below the ground surface and is covered with a protective flush mount steel cover. A concrete collar was placed around the base of the flush mount steel cover at the ground surface.

Temporary monitoring wells must be abandoned within 18 months of installation in accordance with the State of Colorado's Division of Water Resources abandonment requirements, unless the wells are permitted as permanent monitoring wells. If requested by the Client, CMT can assist with well abandonment and/or the process of converting the monitoring wells from temporary to permanent status.

PROJECT NAME BORING LOCATION DRILLING COMPANY/RIG DRILLING METHOD HAMMER SYSTEM						Indiana St. Water Line Dakota Drilling/CME 55 4in. Diameter SSA Automatic Hammer		PROJECT NUMBER BORING ELEVATION CMTTS REP. DATE STARTED DATE COMPLETED		23.118 5734 ft. E. Castle 11/7/2023 11/7/2023		B-1
												Page 1 of 1
DEPTH (ft)	NATURAL DRY DENSITY (pcf)	NATURAL MOISTURE CONTENT (%)	FINES (%)	LL-PL-P _I	BLOW COUNT	SAMPLE		GRAPHIC LOG	ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	Water Level and Depth of Cave (ft)
						DRIVE	BULK					
									5733.17	ASPHALT PAVING MATERIAL	0.83	
					23/12					FILL: SAND, clayey, with gravel, low plasticity, well graded, medium dense, moist, dark brown, SC.		
									5731		3	
										CLAY, fat, very stiff to hard, moist, tan, medium calcareous content, CH.		
5	104.4	24	93	82-20-62	22/12							
									5727		7	
										WEATHERED CLAYSTONE, medium hard, slightly moist, brown.		
					38/12							
									5722		12	
										CLAYSTONE, hard, slightly moist, light brown to tan, low calcareous content, iron staining.		
					50/10							
									5719.1		14.9	
Boring terminated at 14.9 feet												

LEGEND

WATER LEVEL AT TIME OF DRILLING
 WATER LEVEL # DAYS AFTER DRILLING
 DEPTH OF CAVE # DAYS AFTER DRILLING
 DEPTH OF REFUSAL

BULK SAMPLE
 MODIFIED CALIFORNIA SAMPLER

PROJECT NAME	Indiana St. Water Line	PROJECT NUMBER	23.118	B-2
BORING LOCATION	Sta. 5+20	BORING ELEVATION	5713 ft.	
DRILLING COMPANY/RIG	Dakota Drilling/CME 55	CMTTS REP.	E. Castle	
DRILLING METHOD	4in. Diameter SSA	DATE STARTED	11/7/2023	
HAMMER SYSTEM	Automatic Hammer	DATE COMPLETED	11/7/2023	Page 1 of 1

DEPTH (ft)	NATURAL DRY DENSITY (pcf)	NATURAL MOISTURE CONTENT (%)	FINES (%)	LL-PL-PI	BLOW COUNT	DRIVE	BULK	GRAPHIC LOG	ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	Water Level and Depth of Cave (ft)
									5712.33	ASPHALT PAVING MATERIAL	0.67	
	125.6	6.9	16	29-18-11	34/12	✱				FILL: SAND, clayey, with gravel, low plasticity, medium dense, slightly moist, brown, SC.		
									5710		3	
5					19/12	✱				CLAY, fat, very stiff, slightly moist to moist, reddish brown to light brown, low calcareous content, CH.		
10					22/12	✱						
15					23/12	✱			5698		15	

Boring terminated at 15 feet

LEGEND

- ▼ WATER LEVEL AT TIME OF DRILLING
- ▽# WATER LEVEL # DAYS AFTER DRILLING
- # DEPTH OF CAVE # DAYS AFTER DRILLING
- ↑ DEPTH OF REFUSAL
- ⊠ BULK SAMPLE
- ✱ MODIFIED CALIFORNIA SAMPLER

CMT TECHNICAL
SERVICES

PROJECT NAME	Indiana St. Water Line	PROJECT NUMBER	23.118	B-3
BORING LOCATION	Sta. 10+30	BORING ELEVATION	5667 ft.	
DRILLING COMPANY/RIG	Dakota Drilling/CME 55	CMTTS REP.	E. Castle	
DRILLING METHOD	4in. Diameter SSA	DATE STARTED	11/7/2023	
HAMMER SYSTEM	Automatic Hammer	DATE COMPLETED	11/7/2023	
				Page 1 of 1

DEPTH (ft)	NATURAL DRY DENSITY (pcf)	NATURAL MOISTURE CONTENT (%)	FINES (%)	LL-PL-PI	BLOW COUNT	SAMPLE		GRAPHIC LOG	ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	Water Level and Depth of Cave (ft)
						DRIVE	BULK					
									5666.17	ASPHALT PAVING MATERIAL	0.83	
					21/12	✱				FILL; CLAY, medium plasticity, sandy, silty, trace gravel, very stiff, moist, dark brown to light brown, fine to coarse grained, calcareous content.		
									5663		4	
5	105.5	21.1	74	61-17-44	17/12	✱				CLAY, fat, with sand, very stiff, moist, orange-brown, medium calcareous content, iron staining, CH.		
									5661		6	
										SANDSTONE, very hard, slightly moist, yellowish tan, non- to moderately indurated.		
					50/5	✱			5657.5		9.5	
10										SANDSTONE, silty, very dense, light brown, iron staining.		
									5654		13	
					50/5	✱			5652.6	CLAYSTONE, very hard, light brown, medium calcareous content, iron staining.		
											14.4	

Boring terminated at 14.4 feet

LEGEND

- 
 WATER LEVEL AT TIME OF DRILLING
- 
 WATER LEVEL # DAYS AFTER DRILLING
- 
 DEPTH OF CAVE # DAYS AFTER DRILLING
- 
 DEPTH OF REFUSAL
- 
 BULK SAMPLE
- 
 MODIFIED CALIFORNIA SAMPLER

PROJECT NUMBER	23,118
BORING ELEVATION	5636 ft.
CMTTS REP.	E. Castle
DATE STARTED	11/7/2023
DATE COMPLETED	11/7/2023

Page 1 of 1

DEPTH (ft)	NATURAL DRY DENSITY (pcf)	NATURAL MOISTURE CONTENT (%)	FINES (%)	LL-PL-PI	BLOW COUNT	SAMPLE		GRAPHIC LOG	ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	Water Level and Depth of Cave (ft)
						DRIVE	BULK					
									5635.33	ASPHALT PAVING MATERIAL	0.67	
					50/6	X				FILL: CLAY, sandy, with gravel, medium plasticity, hard, moist, brown, CL.		
									5633		3	
5	103.2	21.3	59	44-16-28	13/12	X				CLAY, sandy, lean, stiff to hard, moist, dark to light brown, low calcareous content, CL.		
10					36/12	X						
15					28/12	X			5621		15	

Boring terminated at 15 feet

 WATER LEVEL AT TIME OF DRILLING BULK SAMPLE
 # WATER LEVEL # DAYS AFTER DRILLING MODIFIED CALIFORNIA SAMPLER
 # DEPTH OF CAVE # DAYS AFTER DRILLING
 DEPTH OF REFUSAL



PROJECT NAME	Indiana St. Water Line	PROJECT NUMBER	23.118	B-5
BORING LOCATION	Sta. 19+90	BORING ELEVATION	5628 ft.	
DRILLING COMPANY/RIG	Dakota Drilling/Diedrich 120	CMTTS REP.	E. Castle	
DRILLING METHOD	4in. Diameter SSA	DATE STARTED	11/6/2023	
HAMMER SYSTEM	Rope & Cathead	DATE COMPLETED	11/6/2023	
				Page 1 of 1

DEPTH (ft)	NATURAL DRY DENSITY (pcf)	NATURAL MOISTURE CONTENT (%)	FINES (%)	LL-PL-PI	BLOW COUNT	DRIVE	BULK	GRAPHIC LOG	ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	Water Level and Depth of Cave (ft)
									5627.25	ASPHALT PAVING MATERIAL	0.75	
	114.2	12.8	7	NV-NP-NP	50/9	✱				FILL: GRAVEL, poorly graded, with silt and sand, dense, moist, light brown, low calcareous content, iron staining, GP-GM.		
5					28/12	✱			5623		5	
										CLAYSTONE, very hard, slightly moist, olive, iron staining.		
10					50/6	✱						
					50/5	✱			5613.6		14.4	

Boring terminated at 14.4 feet

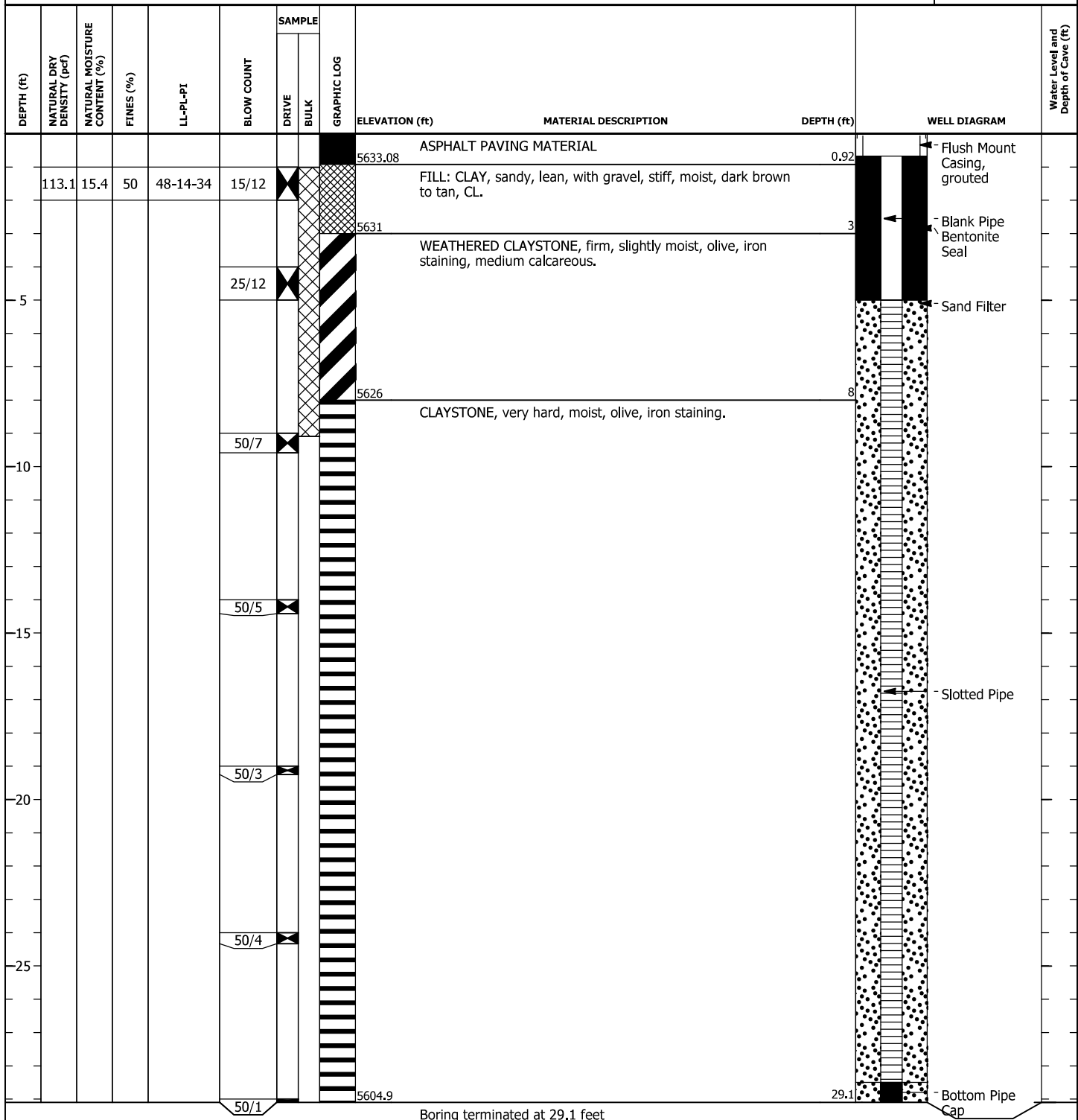
LEGEND

 WATER LEVEL AT TIME OF DRILLING
 WATER LEVEL # DAYS AFTER DRILLING
 DEPTH OF CAVE # DAYS AFTER DRILLING
 DEPTH OF REFUSAL

 BULK SAMPLE
 MODIFIED CALIFORNIA SAMPLER



PROJECT NAME	Indiana St. Water Line	PROJECT NUMBER	23.118	B-6
BORING LOCATION	Sta. 25+40	BORING ELEVATION	5634 ft.	
DRILLING COMPANY/RIG	Dakota Drilling/Diedrich 120	CMTTS REP.	E. Castle	
DRILLING METHOD	4in. Diameter SSA	DATE STARTED	11/6/2023	
HAMMER SYSTEM	Rope & Cathead	DATE COMPLETED	11/6/2023	
				Page 1 of 1



LEGEND

-  WATER LEVEL AT TIME OF DRILLING
-  WATER LEVEL # DAYS AFTER DRILLING
-  DEPTH OF CAVE # DAYS AFTER DRILLING
-  DEPTH OF REFUSAL
-  BULK SAMPLE
-  MODIFIED CALIFORNIA SAMPLER

PROJECT NAME	Indiana St. Water Line	PROJECT NUMBER	23.118	B-7
BORING LOCATION	Sta. 27+00	BORING ELEVATION	5639 ft.	
DRILLING COMPANY/RIG	Dakota Drilling/Diedrich 120	CMTTS REP.	E. Castle	
DRILLING METHOD	4in. Diameter SSA	DATE STARTED	11/6/2023	
HAMMER SYSTEM	Rope & Cathead	DATE COMPLETED	11/6/2023	
				Page 1 of 1

DEPTH (ft)	NATURAL DRY DENSITY (pcf)	NATURAL MOISTURE CONTENT (%)	FINES (%)	LL-PL-PI	BLOW COUNT	DRIVE	BULK	GRAPHIC LOG	ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	Water Level and Depth of Cave (ft)
									5638.25	ASPHALT PAVING MATERIAL	0.75	
					22/12	✱				FILL: CLAY, sandy, lean, with gravel, hard, moist, brown, CL.		
									5636		3	
										WEATHERED CLAYSTONE, firm, slightly moist, olive, low calcareous content.		
5	108.8	19.5	77	59-19-40	33/12	✱			5633		6	
										CLAYSTONE, very hard, moist, olive to tan, some iron staining.		
					50/7	✱						
-10												
					50/5	✱						
-15												
					50/3	✱						
-20												
					50/7	✱						
-25												
					50/4	✱			5609.6		29.4	

Boring terminated at 29.4 feet

LEGEND

 WATER LEVEL AT TIME OF DRILLING
 WATER LEVEL # DAYS AFTER DRILLING
 DEPTH OF CAVE # DAYS AFTER DRILLING
 DEPTH OF REFUSAL

 BULK SAMPLE
 MODIFIED CALIFORNIA SAMPLER



PROJECT NAME	Indiana St. Water Line	PROJECT NUMBER	23.118	B-8
BORING LOCATION	Sta. 30+30	BORING ELEVATION	5548 ft.	
DRILLING COMPANY/RIG	Dakota Drilling/Diedrich 120	CMTTS REP.	E. Castle	
DRILLING METHOD	4in. Diameter SSA	DATE STARTED	11/6/2023	
HAMMER SYSTEM	Rope & Cathead	DATE COMPLETED	11/6/2023	
				Page 1 of 1

DEPTH (ft)	NATURAL DRY DENSITY (pcf)	NATURAL MOISTURE CONTENT (%)	FINES (%)	LL-PL-PI	BLOW COUNT	DRIVE	BULK	GRAPHIC LOG	ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	Water Level and Depth of Cave (ft)
									5547.33	ASPHALT PAVING MATERIAL	0.67	
					40/12				5546	FILL: CLAY, lean, with sand and gravel, hard, moist, light brown, medium calcareous content, CL.	2	
										CLAY, fat, with sand, very stiff, slightly moist, tan, high calcareous content, CH.		
5	107	21.1	81	50-23-27	23/12							
									5541	CLAYSTONE, hard, moist, olive.	7	
					50/9							
												
					50/11				5533		15	

Boring terminated at 15 feet

LEGEND

- 
 WATER LEVEL AT TIME OF DRILLING
- 
 WATER LEVEL # DAYS AFTER DRILLING
- 
 DEPTH OF CAVE # DAYS AFTER DRILLING
- 
 DEPTH OF REFUSAL
- 
 BULK SAMPLE
- 
 MODIFIED CALIFORNIA SAMPLER

PROJECT NAME	Indiana St. Water Line	PROJECT NUMBER	23.118	B-9
BORING LOCATION	Sta. 33+20	BORING ELEVATION	5653 ft.	
DRILLING COMPANY/RIG	Dakota Drilling/CME 75	CMTTS REP.	E. Castle	
DRILLING METHOD	4in. Diameter SSA	DATE STARTED	11/3/2023	
HAMMER SYSTEM	Automatic Hammer	DATE COMPLETED	11/3/2023	
				Page 1 of 1

DEPTH (ft)	NATURAL DRY DENSITY (pcf)	NATURAL MOISTURE CONTENT (%)	FINES (%)	LL-PL-PI	BLOW COUNT	DRIVE	BULK	GRAPHIC LOG	ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	Water Level and Depth of Cave (ft)
									5652.25	ASPHALT PAVING MATERIAL	0.75	
					8/12					CLAY, lean, with sand and gravel, stiff, moist, tan, medium calcareous content, CL.		
5	114.3	17.4	77	48-14-34	11/12							
									5647	CLAYSTONE, hard, moist, olive, some iron staining.	6	
					50/9							
					50/10							
15									5638		15	

Boring terminated at 15 feet

LEGEND

WATER LEVEL AT TIME OF DRILLING
 WATER LEVEL # DAYS AFTER DRILLING
 DEPTH OF CAVE # DAYS AFTER DRILLING
 DEPTH OF REFUSAL

BULK SAMPLE
 MODIFIED CALIFORNIA SAMPLER

PROJECT NAME	Indiana St. Water Line	PROJECT NUMBER	23.118	B-10
BORING LOCATION	Sta. 38+30	BORING ELEVATION	5658 ft.	
DRILLING COMPANY/RIG	Dakota Drilling/CME 75	CMTTS REP.	E. Castle	
DRILLING METHOD	4in. Diameter SSA	DATE STARTED	11/3/2023	
HAMMER SYSTEM	Automatic Hammer	DATE COMPLETED	11/3/2023	
				Page 1 of 1

DEPTH (ft)	FINES (%)	LL-PL-PI	BLOW COUNT	SAMPLE		ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	Water Level and Depth of Cave (ft)
				DRIVE	BULK				
						5657.25	ASPHALT PAVING MATERIAL	0.75	
	18	48-14-34	19/12	✱		5656	FILL: GRAVEL, clayey, with sand, medium plasticity, medium dense, moist, reddish-tan, GC.	2	
							CLAYSTONE, hard to very hard, moist, olive, medium to low calcareous content, some iron staining.		
5			50/11	✱					
10			50/7	✱					
15			50/5	✱		5643		15	

Boring terminated at 15 feet

LEGEND

 WATER LEVEL AT TIME OF DRILLING
 WATER LEVEL # DAYS AFTER DRILLING
 DEPTH OF CAVE # DAYS AFTER DRILLING
 DEPTH OF REFUSAL

 BULK SAMPLE
 MODIFIED CALIFORNIA SAMPLER



PROJECT NAME	Indiana St. Water Line	PROJECT NUMBER	23.118	B-11
BORING LOCATION	Sta. 43+20	BORING ELEVATION	5668 ft.	
DRILLING COMPANY/RIG	Dakota Drilling/CME 75	CMTTS REP.	E. Castle	
DRILLING METHOD	4in. Diameter SSA	DATE STARTED	11/3/2023	
HAMMER SYSTEM	Automatic Hammer	DATE COMPLETED	11/3/2023	Page 1 of 1

DEPTH (ft)	NATURAL DRY DENSITY (pcf)	NATURAL MOISTURE CONTENT (%)	FINES (%)	LL-PL-PI	BLOW COUNT	DRIVE	BULK	GRAPHIC LOG	ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	Water Level and Depth of Cave (ft)
									5667.25	ASPHALT PAVING MATERIAL	0.75	
	115.9	10.3	27	51-15-36	23/12				5666	FILL: GRAVEL, clayey, with sand, medium plasticity, medium dense, moist, red tan, some iron staining, GC.	2	
										CLAY, sandy, lean, very stiff, moist, brown, CL.		
5					16/12				5662	WEATHERED CLAYSTONE, occasional gravel particle, very stiff, moist, olive.	6	
10					14/12				5656	CLAYSTONE, medium hard, moist, olive.	12	
15					37/12				5653		15	
Boring terminated at 15 feet												

LEGEND

-  WATER LEVEL AT TIME OF DRILLING
-  BULK SAMPLE
-  WATER LEVEL # DAYS AFTER DRILLING
-  MODIFIED CALIFORNIA SAMPLER
-  DEPTH OF CAVE # DAYS AFTER DRILLING
-  DEPTH OF REFUSAL

PROJECT NAME	Indiana St. Water Line	PROJECT NUMBER	23.118	B-12
BORING LOCATION	Sta. 48+60	BORING ELEVATION	5672 ft.	
DRILLING COMPANY/RIG	Dakota Drilling/CME 75	CMTTS REP.	E. Castle	
DRILLING METHOD	4in. Diameter SSA	DATE STARTED	11/3/2023	
HAMMER SYSTEM	Automatic Hammer	DATE COMPLETED	11/3/2023	Page 1 of 1

DEPTH (ft)	NATURAL DRY DENSITY (pcf)	NATURAL MOISTURE CONTENT (%)	FINES (%)	LL-PL-PI	BLOW COUNT	DRIVE	BULK	GRAPHIC LOG	ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	Water Level and Depth of Cave (ft)
									5671.08	ASPHALT PAVING MATERIAL	0.92	
					10/12	✖			5670	FILL; CLAY, with gravel, high plasticity, stiff, moist, brown to olive, some iron staining, CL.	2	
										CLAY, sandy, fat, stiff, moist, brown, CH.		
5	106.8	18.9	99	74-22-52	14/12	✖						
									5664		8	
					44/12	✖				CLAYSTONE, medium hard to hard, moist, olive to brown, some iron staining.		
					50/11	✖			5657		15	
15										Boring terminated at 15 feet		

LEGEND

- ▼ WATER LEVEL AT TIME OF DRILLING
- ▽# WATER LEVEL # DAYS AFTER DRILLING
- # DEPTH OF CAVE # DAYS AFTER DRILLING
- ↑ DEPTH OF REFUSAL
- ⊠ BULK SAMPLE
- ✖ MODIFIED CALIFORNIA SAMPLER

PROJECT NUMBER	23,118
BORING ELEVATION	5673 ft.
CMTTS REP.	E. Castle
DATE STARTED	11/3/2023
DATE COMPLETED	11/3/2023

Page 1 of 1

Boring terminated at 15 feet

 WATER LEVEL AT TIME OF DRILLING BULK SAMPLE
 # WATER LEVEL # DAYS AFTER DRILLING MODIFIED CALIFORNIA SAMPLER
 # DEPTH OF CAVE # DAYS AFTER DRILLING
 DEPTH OF REFUSAL

CMT TECHNICAL SERVICES

PROJECT NAME	Indiana St. Water Line	PROJECT NUMBER	23.118	B-14
BORING LOCATION	Sta. 58+00	BORING ELEVATION	5694 ft.	
DRILLING COMPANY/RIG	Dakota Drilling/CME 75	CMTTS REP.	E. Castle	
DRILLING METHOD	4in. Diameter SSA	DATE STARTED	11/3/2023	
HAMMER SYSTEM	Automatic Hammer	DATE COMPLETED	11/3/2023	
				Page 1 of 1

DEPTH (ft)	NATURAL MOISTURE CONTENT (%)	FINES (%)	LL-PL-PI	BLOW COUNT	SAMPLE		ELEVATION (ft)	MATERIAL DESCRIPTION	DEPTH (ft)	Water Level and Depth of Cave (ft)
					DRIVE	BULK				
							5693.25	ASPHALT PAVING MATERIAL	0.75	
				27/12	✕		5692	FILL; SAND, clayey, medium plasticity, with gravel, medium dense, slightly moist, brown, SC.	2	
								CLAY, sandy, lean, very stiff to hard, moist, light brown to brown, low calcareous content, CL.		
5				18/12	✕					
							5687	SANDSTONE, clayey, very hard, slightly moist, brown.	7	
	3.4	24	35-15-20	50/6	✕					
10							5683	WEATHERED CLAYSTONE, firm, moist, olive.	11	
				22/12	✕		5679		15	

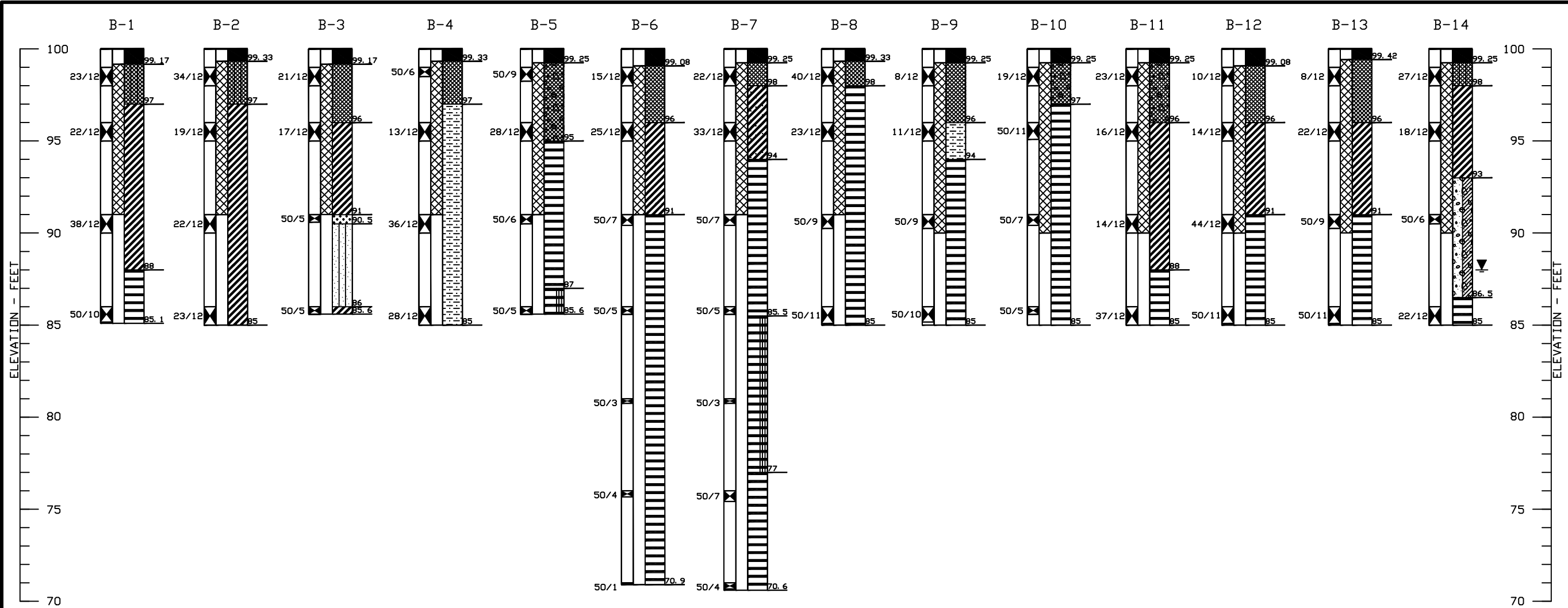
Boring terminated at 15 feet

LEGEND
 WATER LEVEL AT TIME OF DRILLING
 # WATER LEVEL # DAYS AFTER DRILLING
 # DEPTH OF CAVE # DAYS AFTER DRILLING
 DEPTH OF REFUSAL

 BULK SAMPLE
 MODIFIED CALIFORNIA SAMPLER



W:\2023\Centennial\23.118.4 Indiana Street Water Main\ACAD\23.118 Boring Comparison.dwg 12/8/2023 8:57 AM



Stick Logs

PROJECT NO:	23.118		
PROJECT NAME:	Indiana Street Water Line		
DRAWN BY:	MSR	CHECKED BY:	--
DWG DATE:	12.08.23	REV. DATE:	--



APPENDIX B

Laboratory Testing

SUMMARY OF LABORATORY TEST RESULTS

Indiana Street Water Line

Project No. 23.118

Sample Location		Natural Dry Density (pcf)	Natural Moisture Content (%)	Maximum Dry Density (%)	Soil Chemical Tests				Standard Proctor (ASTM D698)		Gradation			Atterberg Limits		Material Type
Boring	Depth (feet)				Water Soluble Sulfates (%)	pH	Water Soluble Chlorides (mg/L)	Resistivity (ohm*cm)	Maximum Dry Density (pcf)	Optimum Moisture Content (%)	Gravel (%)	Sand (%)	Silt/Clay (%)	Liquid Limit (%)	Plasticity Index (%)	
B-1	4	104.4	24.0								0	7	93	82	62	CLAY, fat (CH, A-7-6(65))
B-2	1	125.6	6.9								28	56	16	29	11	FILL: SAND; clayey, with gravel (SC, A-2-6(0))
B-3	4	105.5	21.1								0	26	74	61	44	CLAY, fat, with sand (CH, A-7-6(32))
B-4	4	103.2	21.3								0	41	59	44	28	CLAY, sandy, lean (CL, A-7-6(13))
B-5	1	114.2	12.8								59	35	7	NV	NP	FILL: GRAVEL, poorly graded, with silt and sand (GP-GM, A-1-a)
B-6	1	113.1	15.4								16	34	50	48	34	FILL: CLAY, sandy, lean, with gravel (CL, A-7-6(12))
B-7	4	108.8	19.5								5	18	77	59	40	CLAY, fat, with sand (CH, A-7-6(31))
B-8	4	107.0	21.1								0	19	81	50	27	CLAYSTONE: CLAY, fat, with sand (CH, A-7-6(23))
B-9	4	114.3	17.4								2	21	77	48	34	CLAY, lean, with sand (CL, A-7-6(25))
B-10	1										48	34	18	48	34	FILL: GRAVEL, clayey, with sand (GC, A-2-7(1))
B-11	1	115.9	10.3								39	34	27	51	36	FILL: GRAVEL, clayey, with sand (GC, A-2-7(3))
B-12	4	106.8	18.9								0	1	99	74	52	CLAY, fat (CH, A-7-6(59))
B-13	4	105.9	20.3								0	1	99	75	54	CLAY, fat (CH, A-7-6(61))
B-14	9		3.4								28	48	24	24	13	SAND, clayey, with gravel (SC, A-2-6(0))
B-1	0 tp 9				0.00	8.4	23,364	450								CLAY; sandy (CH, A-7-6)
B-2	0 to 9								120.1	12.0	10	40	50	35	20	SAND, clayey (SC, A-6(6))
B-3	1 tp 9				0.00	8.4	53,622,513	330								CLAY; sandy (CH, A-7-6)
B-5	1 to 9				0.05	8.5	1,059,548	520								SAND, clayey, with gravel (SC, A-2-6)
B-7	2 tp 9				0.07	8.1	76,890	290								CLAY, sandy (CH, A-7-6)
B-9	2 to 9				0.00	8.2	63,060,076	270								CLAY, sandy (CH, A-7-6)
B-11	3 tp 9				0.20	8.3	24,338	880								SAND, clayey, with gravel (SC, A-2-6)
B-13	3 to 9				0.50	7.9	7,348	250								CLAY; sandy (CH, A-7-6)

NA = not applicable

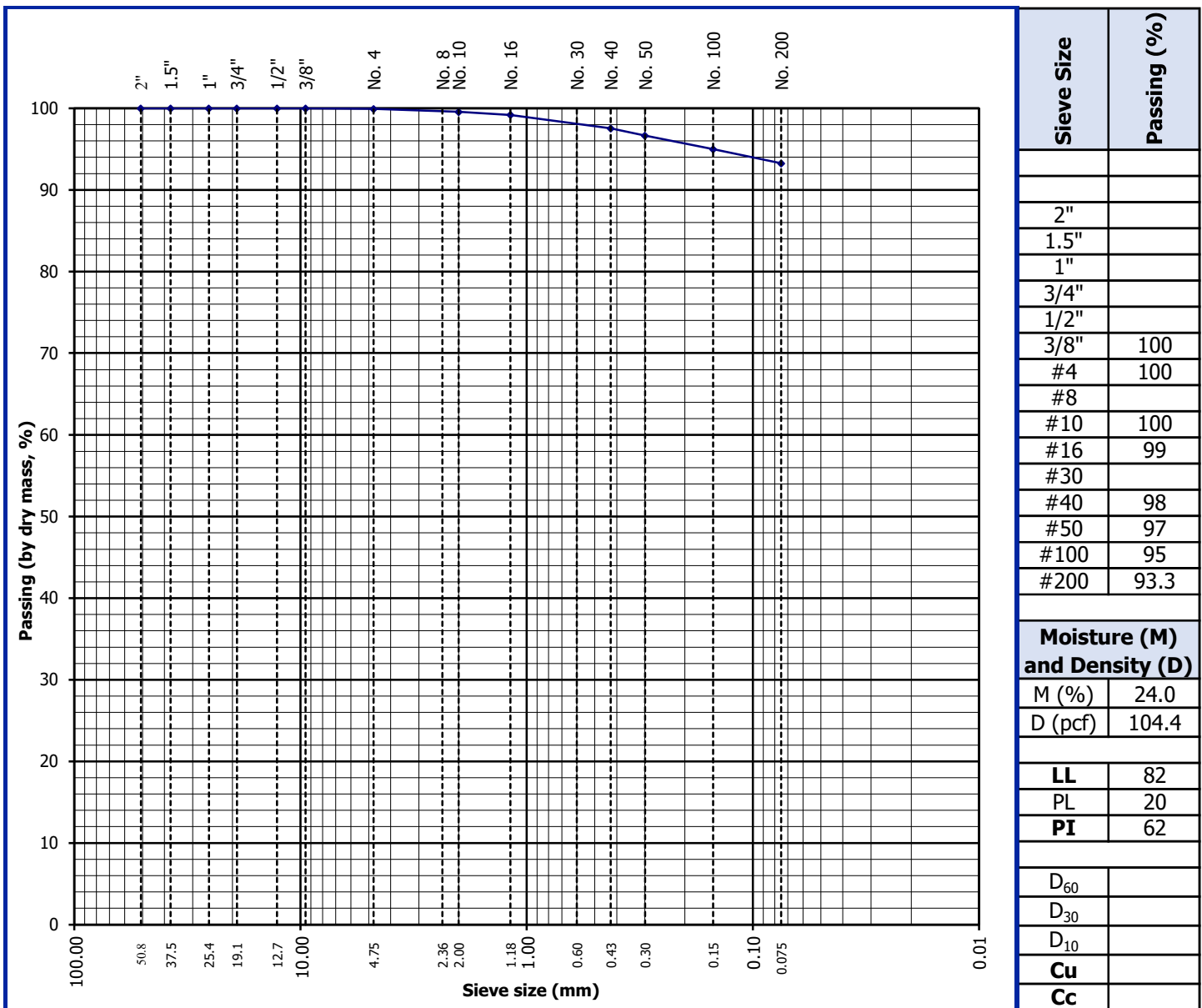
NP = non plastic

NV = no value

GRADATION PLOT - SOIL AND AGGREGATE

Project number	23.118	Date	November 14, 2023
Project name	Indiana Street Water Main	Technician	J. McClellan/K. McNally
Lab ID number	2321105	Reviewer	G. Hoyos
Sample location	B-1 at 4 feet		
Visual description	CLAY, tan		

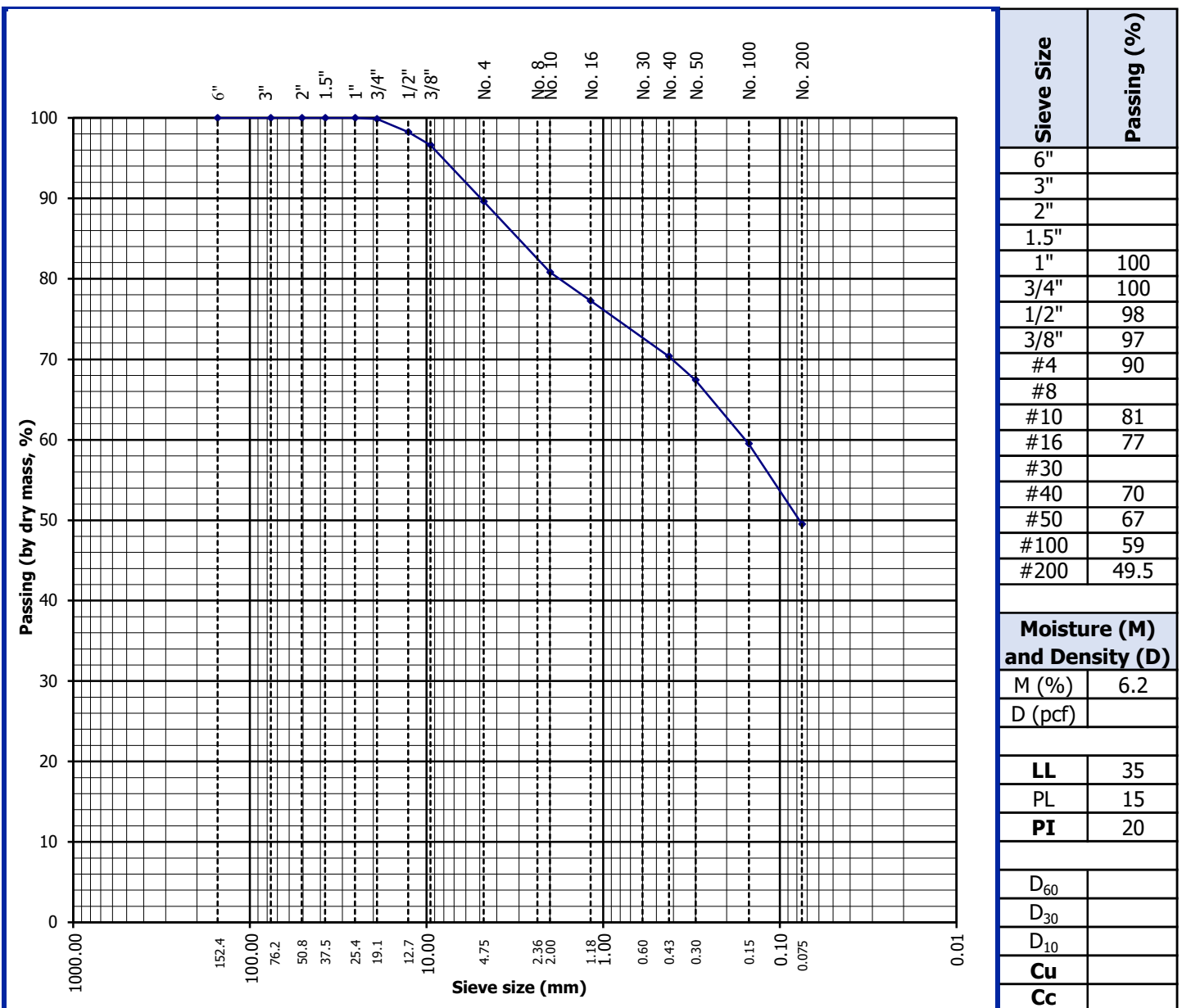
AASHTO M145 Classification				Soaking Method	
Classification	A-7-6	Group Index		Procedure	Method
		65		AASHTO T11	
Unified Soil Classification System (ASTM D2487)				ASTM D1140	B
(CH)	Fat clay			Specimen soaking time (min)	1,440



GRADATION PLOT - SOIL AND AGGREGATE

Project number	23.118	Date	December 1, 2023
Project name	Indiana Street Water Main	Technician	J. McClellan
Lab ID number	2321120	Reviewer	G. Hoyos
Sample location	B-2 at 0 to 9 feet		
Visual description	SAND, clayey, brown		

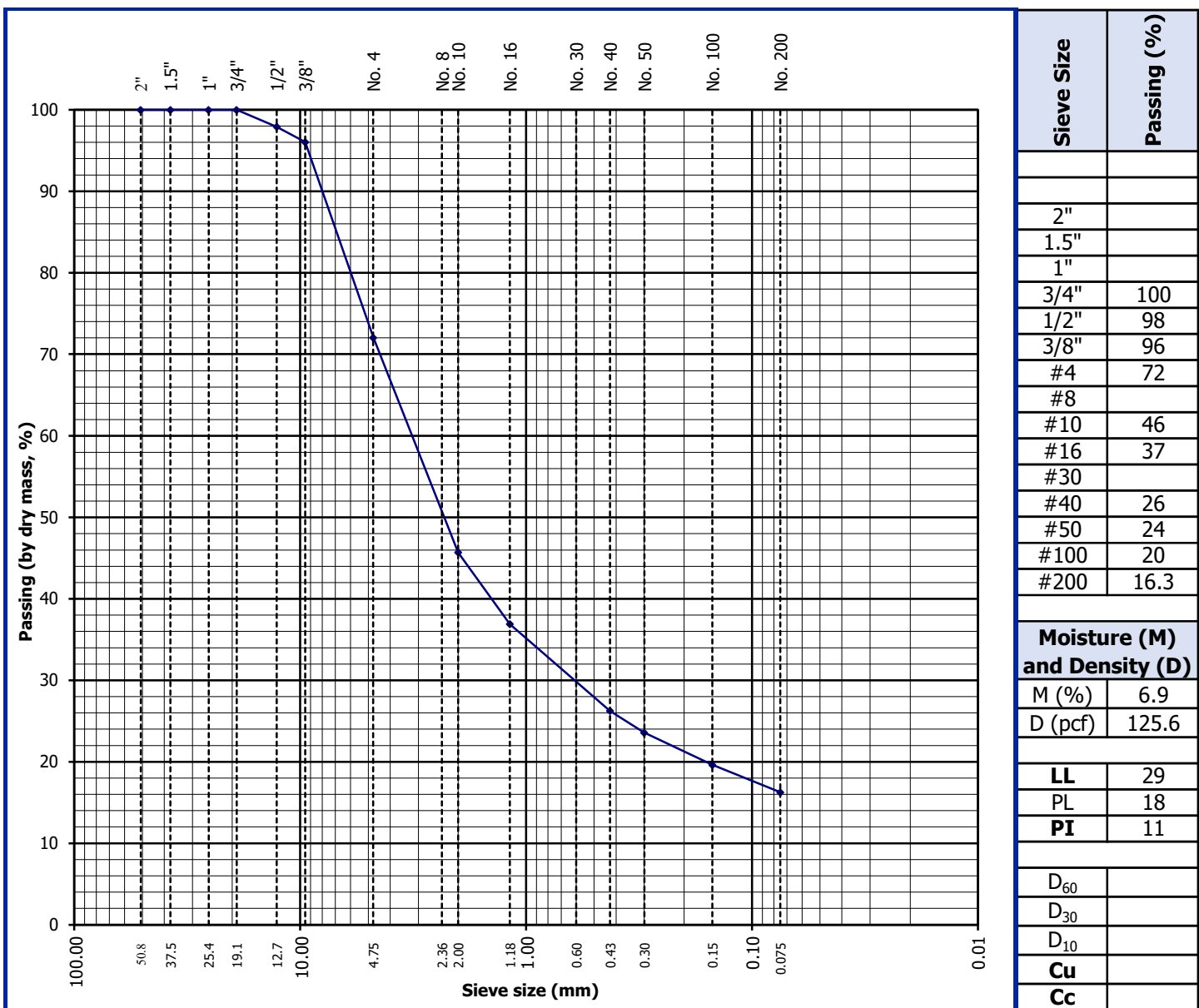
AASHTO M145 Classification				Soaking Method	
Classification	A-6	Group Index	6	Procedure	Method
Unified Soil Classification System (ASTM D2487)				AASHTO T11	
				ASTM D1140	A
(SC)	Clayey sand			Specimen soaking time (min)	120



GRADATION PLOT - SOIL AND AGGREGATE

Project number	23.118	Date	November 14, 2023
Project name	Indiana Street Water Main	Technician	J. McClellan
Lab ID number	2321106	Reviewer	G. Hoyos
Sample location	B-2 at 1 foot		
Visual description	FILL: SAND, clayey, with gravel, brown		

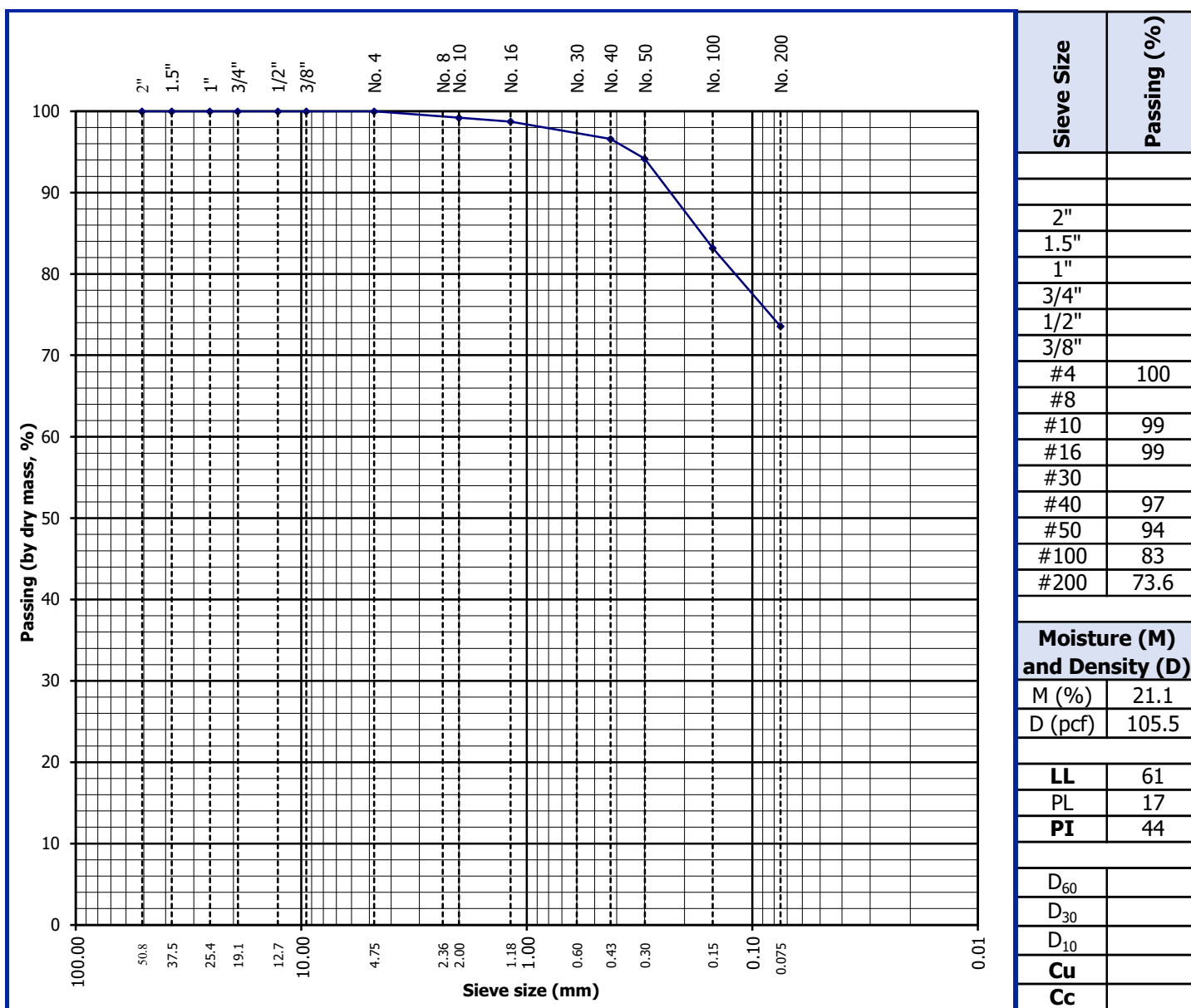
AASHTO M145 Classification				Soaking Method	
Classification	A-2-6	Group Index	0	Procedure	Method
Unified Soil Classification System (ASTM D2487)				AASHTO T11	
(SC)	Clayey sand with gravel			ASTM D1140	A
				Specimen soaking time (min)	60



GRADATION PLOT - SOIL AND AGGREGATE

Project number	23.118	Date	November 14, 2023
Project name	Indiana Street Water Main	Technician	J. McClellan
Lab ID number	2321107	Reviewer	G. Hoyos
Sample location	B-3 at 4 feet		
Visual description	CLAY, with sand, brown		

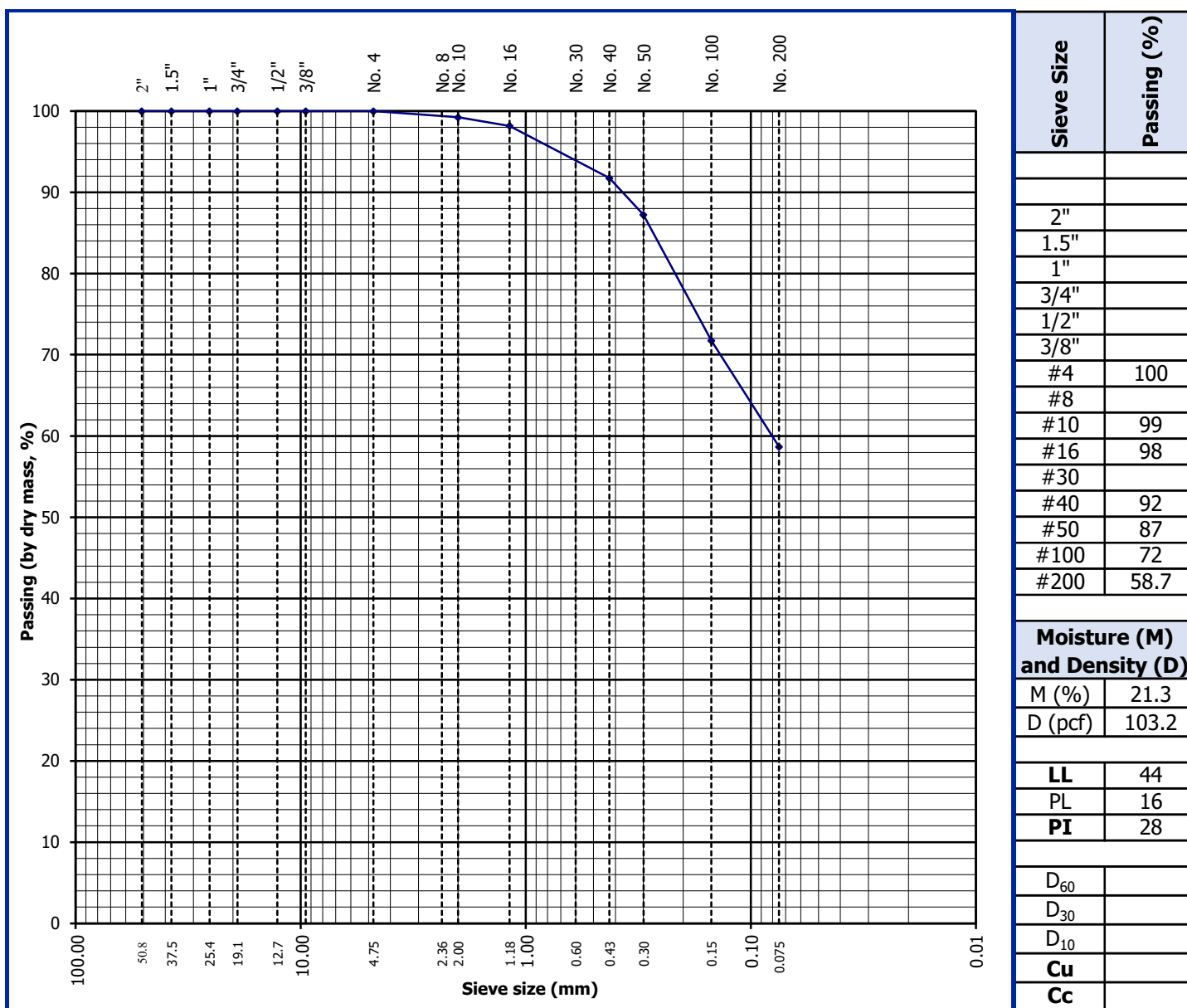
AASHTO M145 Classification				Soaking Method	
				Procedure	Method
Classification	A-7-6	Group Index	32	AASHTO T11	
Unified Soil Classification System (ASTM D2487)				ASTM D1140	B
(CH)	Fat clay with sand			Specimen soaking time (min)	1,440



GRADATION PLOT - SOIL AND AGGREGATE

Project number	23.118	Date	November 14, 2023
Project name	Indiana Street Water Main	Technician	J. McClellan
Lab ID number	2321108	Reviewer	G. Hoyos
Sample location	B-4 at 4 feet		
Visual description	CLAY, sandy, dark brown		

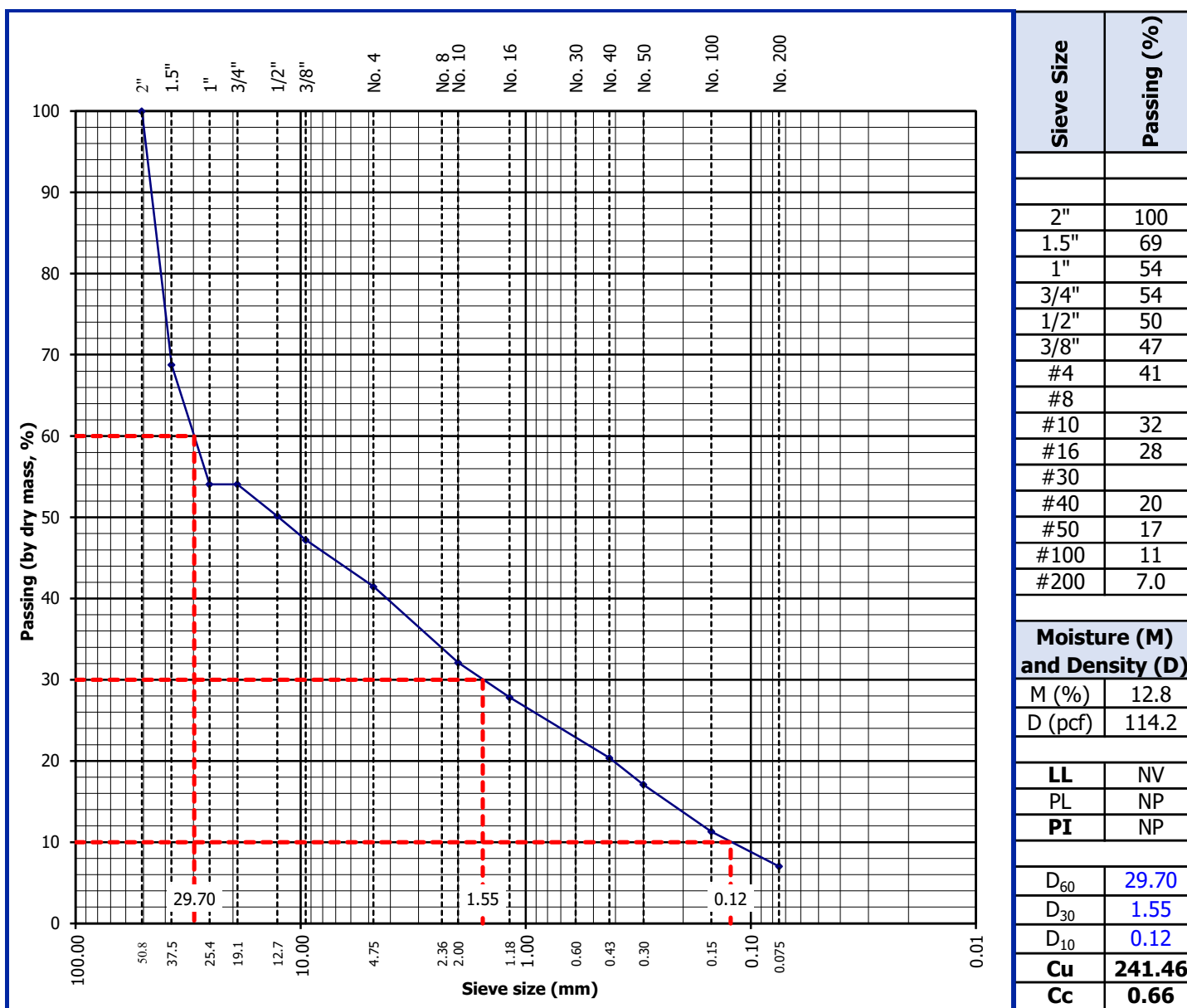
AASHTO M145 Classification				Soaking Method	
				Procedure	Method
Classification	A-7-6	Group Index	13	AASHTO T11	
Unified Soil Classification System (ASTM D2487)				ASTM D1140	B
(CL)	Sandy lean clay			Specimen soaking time (min)	1,440



GRADATION PLOT - SOIL AND AGGREGATE

Project number	23.118	Date	November 14, 2023
Project name	Indiana Street Water Main	Technician	J. McClellan
Lab ID number	2321109	Reviewer	G. Hoyos
Sample location	B-5 at 1 foot		
Visual description	FILL: GRAVEL, with silt and sand, brown		

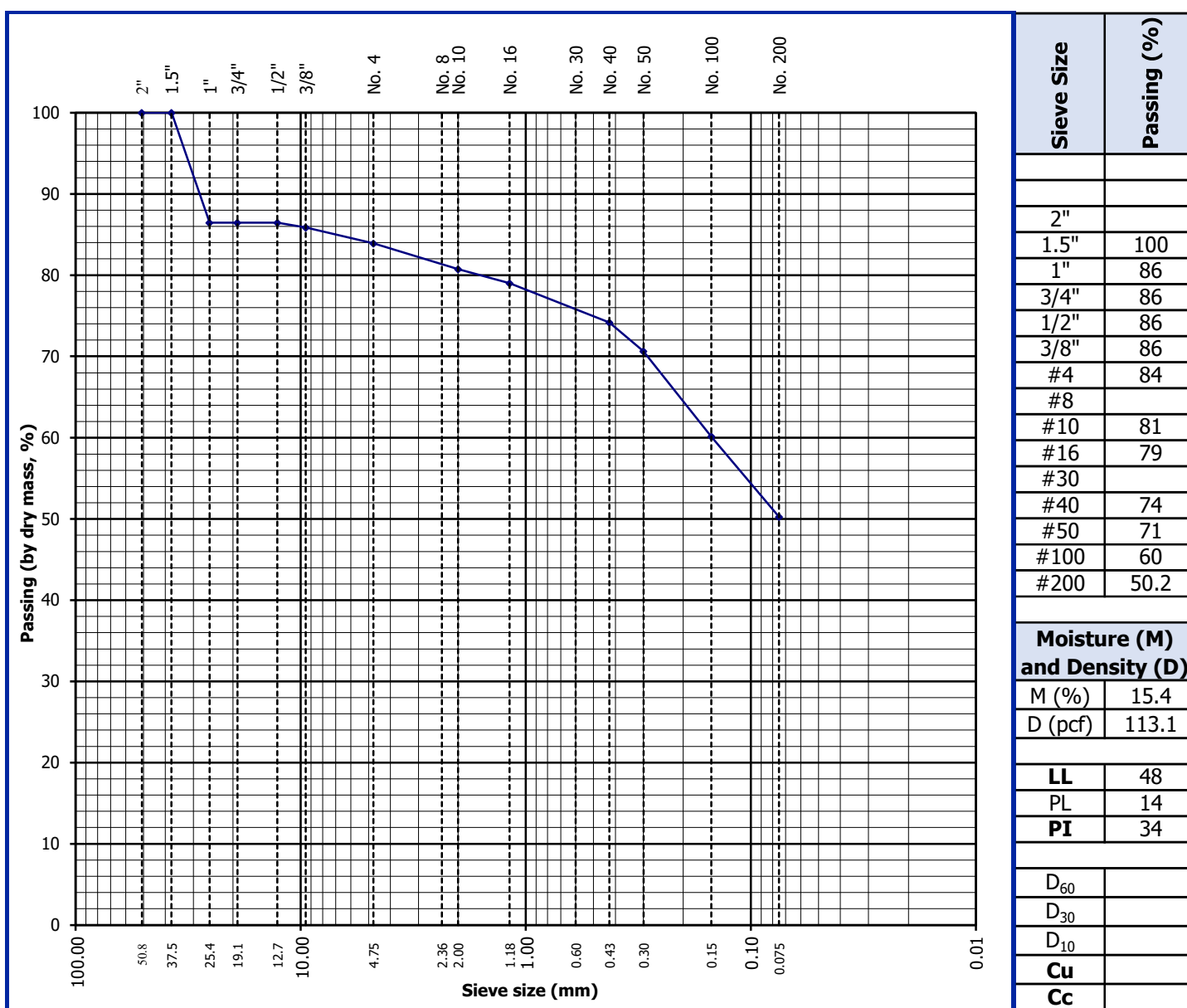
AASHTO M145 Classification				Soaking Method	
Classification	A-1-a	Group Index	0	Procedure	Method
Unified Soil Classification System (ASTM D2487)				AASHTO T11	
(GP-GM)	Poorly graded gravel with silt and sand			ASTM D1140	A
				Specimen soaking time (min)	60



GRADATION PLOT - SOIL AND AGGREGATE

Project number	23.118	Date	November 14, 2023
Project name	Indiana Street Water Main	Technician	J. McClellan/K. McNally
Lab ID number	2321110	Reviewer	G. Hoyos
Sample location	B-6 at 1 foot		
Visual description	FILL: CLAY, sandy, with gravel, dark brown		

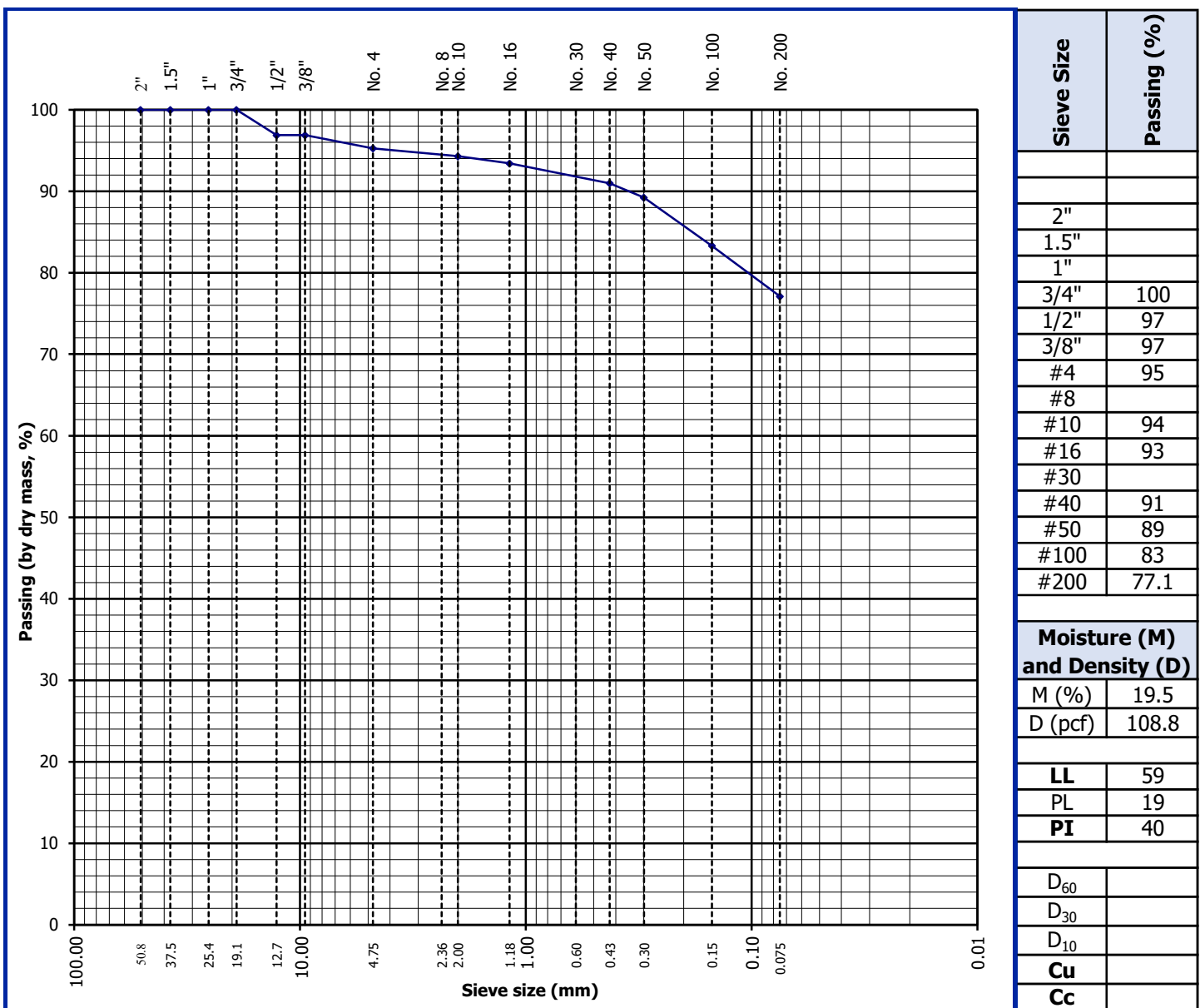
AASHTO M145 Classification				Soaking Method	
Classification	A-7-6	Group Index		Procedure	Method
		12		AASHTO T11	
Unified Soil Classification System (ASTM D2487)				ASTM D1140	B
(CL)	Sandy lean clay with gravel			Specimen soaking time (min)	1,440



GRADATION PLOT - SOIL AND AGGREGATE

Project number	23.118	Date	November 14, 2023
Project name	Indiana Street Water Main	Technician	J. McClellan
Lab ID number	2321111	Reviewer	G. Hoyos
Sample location	B-7 at 4 feet		
Visual description	CLAY, with sand, tan		

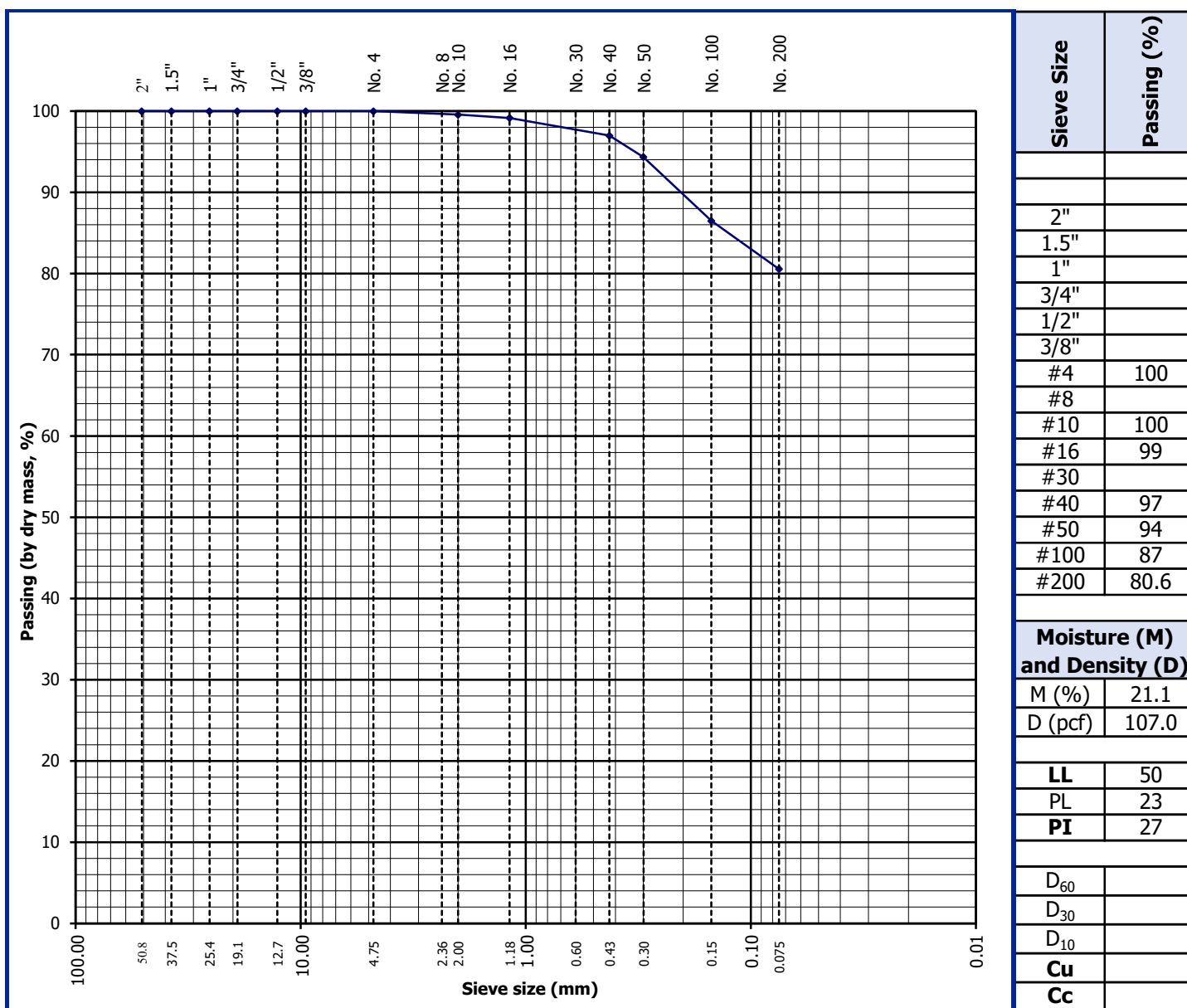
AASHTO M145 Classification				Soaking Method	
Classification	A-7-6	Group Index		Procedure	Method
		31		AASHTO T11	
Unified Soil Classification System (ASTM D2487)				ASTM D1140	B
(CH)	Fat clay with sand			Specimen soaking time (min)	1,440



GRADATION PLOT - SOIL AND AGGREGATE

Project number	23.118	Date	November 14, 2023
Project name	Indiana Street Water Main	Technician	J. McClellan
Lab ID number	2321112	Reviewer	G. Hoyos
Sample location	B-8 at 4 feet		
Visual description	CLAYSTONE, with sand, tan		

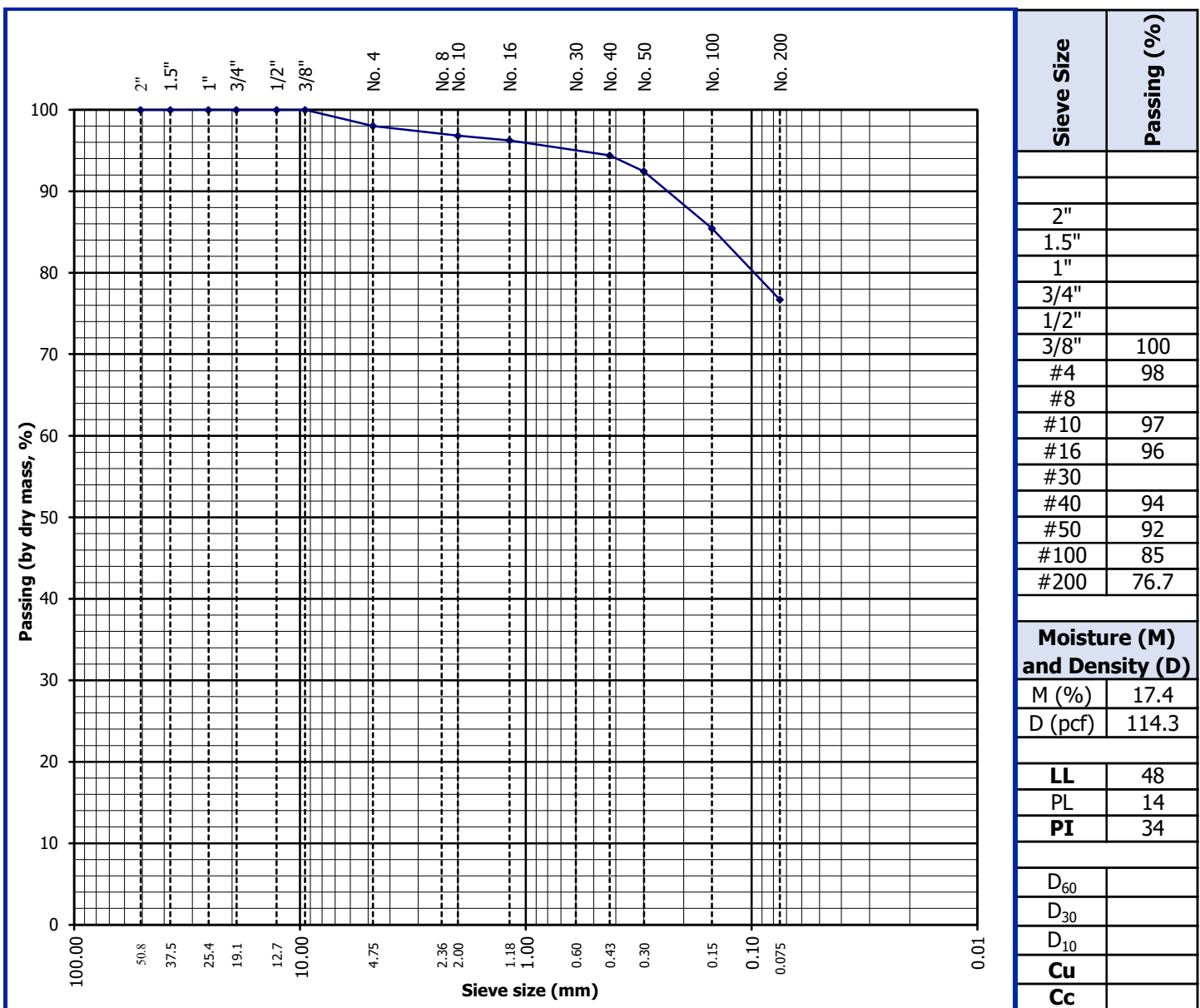
AASHTO M145 Classification				Soaking Method	
Classification	A-7-6	Group Index		Procedure	Method
		23		AASHTO T11	
Unified Soil Classification System (ASTM D2487)				ASTM D1140	B
(CH)	Fat clay with sand			Specimen soaking time (min)	1,440



GRADATION PLOT - SOIL AND AGGREGATE

Project number	23.118	Date	November 16, 2023
Project name	Indiana Street Water Main	Technician	J. McClellan
Lab ID number	2321113	Reviewer	G. Hoyos
Sample location	B-9 at 4 feet		
Visual description	CLAY, with sand, tan		

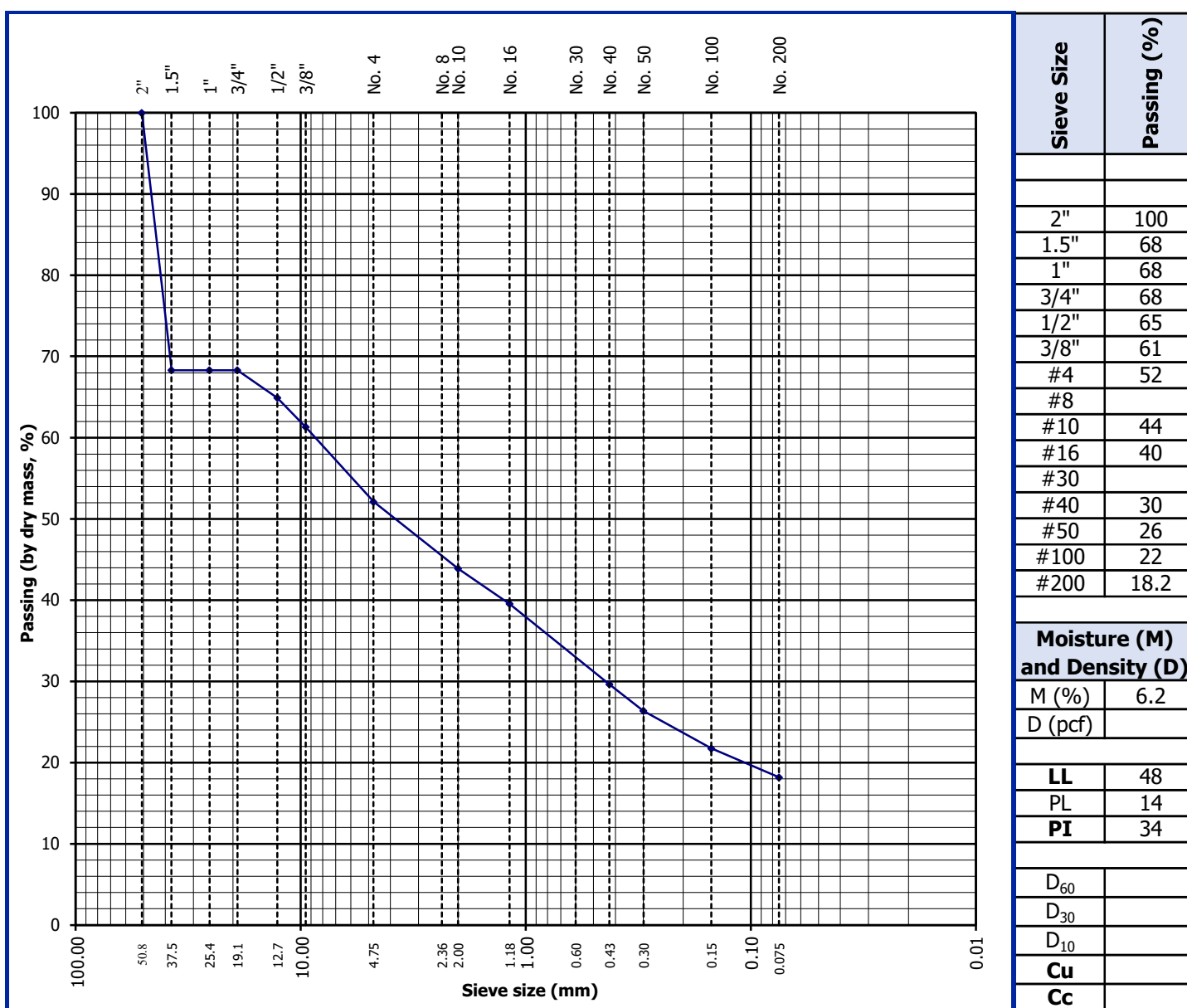
AASHTO M145 Classification				Soaking Method	
Classification	A-7-6	Group Index		Procedure	Method
			25	AASHTO T11	
Unified Soil Classification System (ASTM D2487)				ASTM D1140	B
(CL)	Lean clay with sand			Specimen soaking time (min)	1,440



GRADATION PLOT - SOIL AND AGGREGATE

Project number	23.118	Date	November 16, 2023
Project name	Indiana Street Water Main	Technician	J. McClellan
Lab ID number	2321114	Reviewer	G. Hoyos
Sample location	B-10 at 1 foot		
Visual description	FILL: GRAVEL, clayey, with sand, red brown		

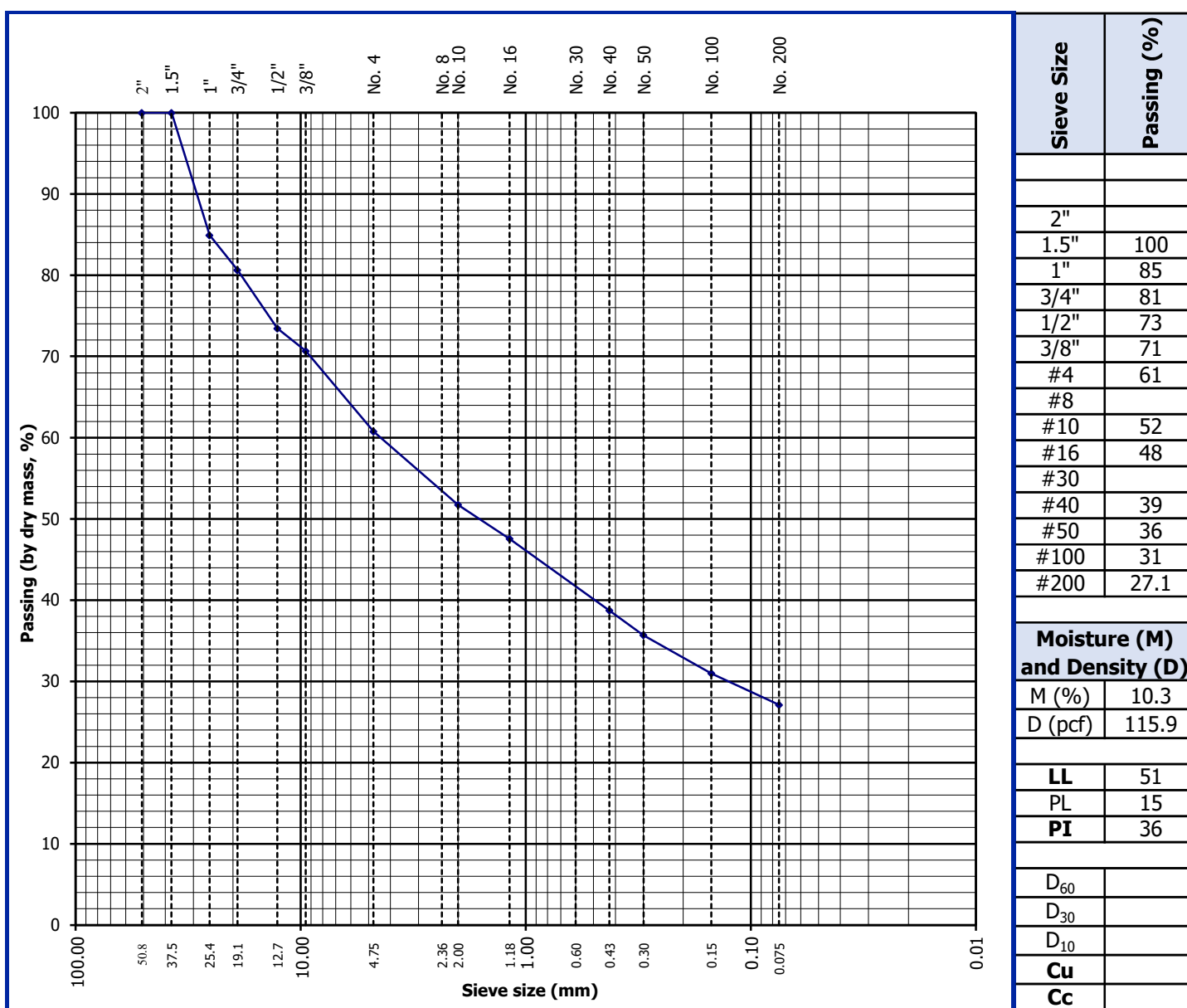
AASHTO M145 Classification				Soaking Method	
				Procedure	Method
Classification	A-2-7	Group Index	1	AASHTO T11	
Unified Soil Classification System (ASTM D2487)				ASTM D1140	B
(GC)	Clayey gravel with sand			Specimen soaking time (min)	1,440



GRADATION PLOT - SOIL AND AGGREGATE

Project number	23.118	Date	November 16, 2023
Project name	Indiana Street Water Main	Technician	J. McClellan/K. McNally
Lab ID number	2321115	Reviewer	G. Hoyos
Sample location	B-11 at 1 foot		
Visual description	FILL: GRAVEL, clayey, with sand, red brown		

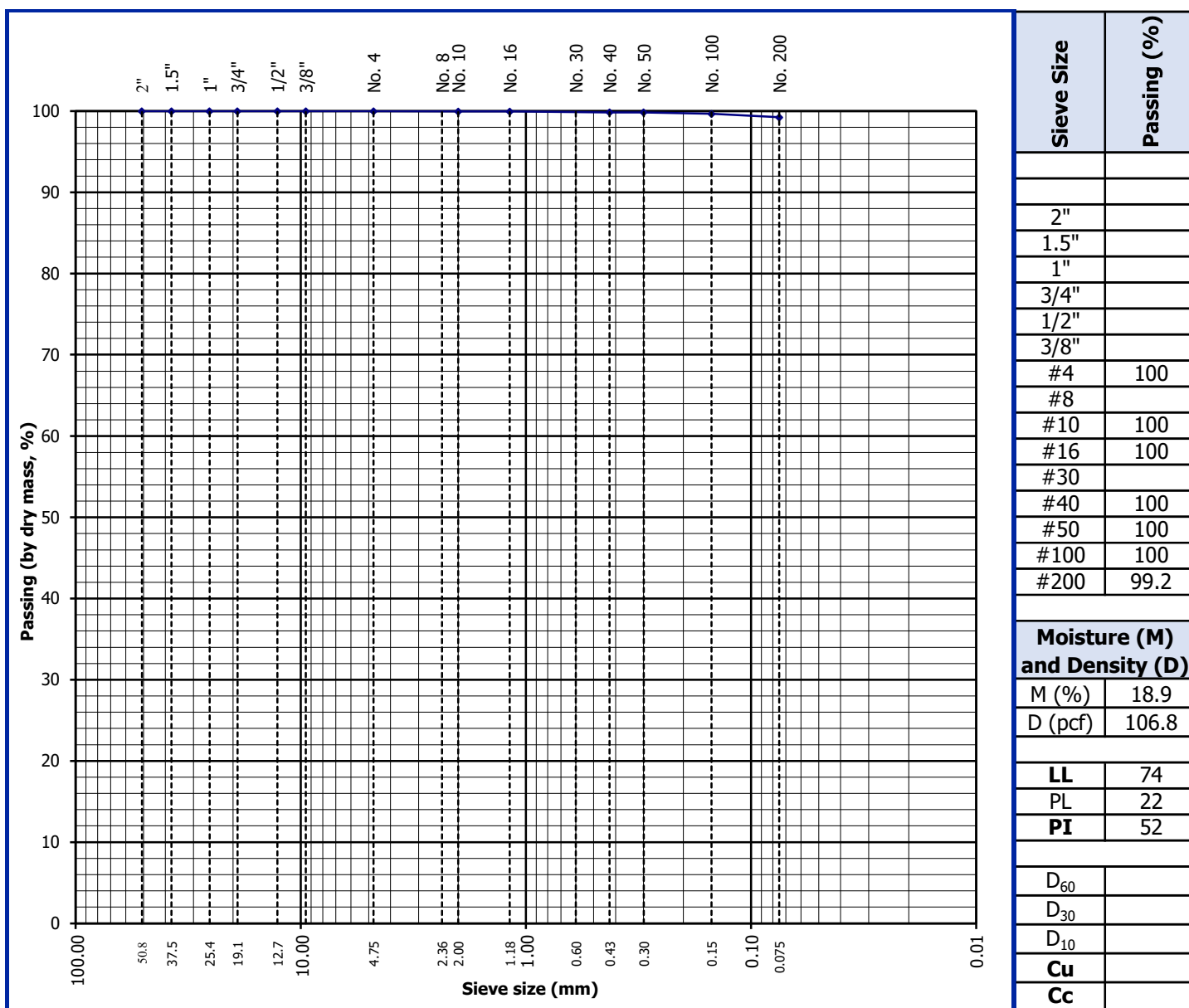
AASHTO M145 Classification				Soaking Method	
Classification	A-2-7	Group Index	3	Procedure	Method
Unified Soil Classification System (ASTM D2487)				AASHTO T11	
(GC)				ASTM D1140	B
Clayey gravel with sand				Specimen soaking time (min)	1,440



GRADATION PLOT - SOIL AND AGGREGATE

Project number	23.118	Date	November 16, 2023
Project name	Indiana Street Water Main	Technician	J. McClellan/K. McNally
Lab ID number	2321116	Reviewer	G. Hoyos
Sample location	B-12 at 4 feet		
Visual description	CLAY, gray		

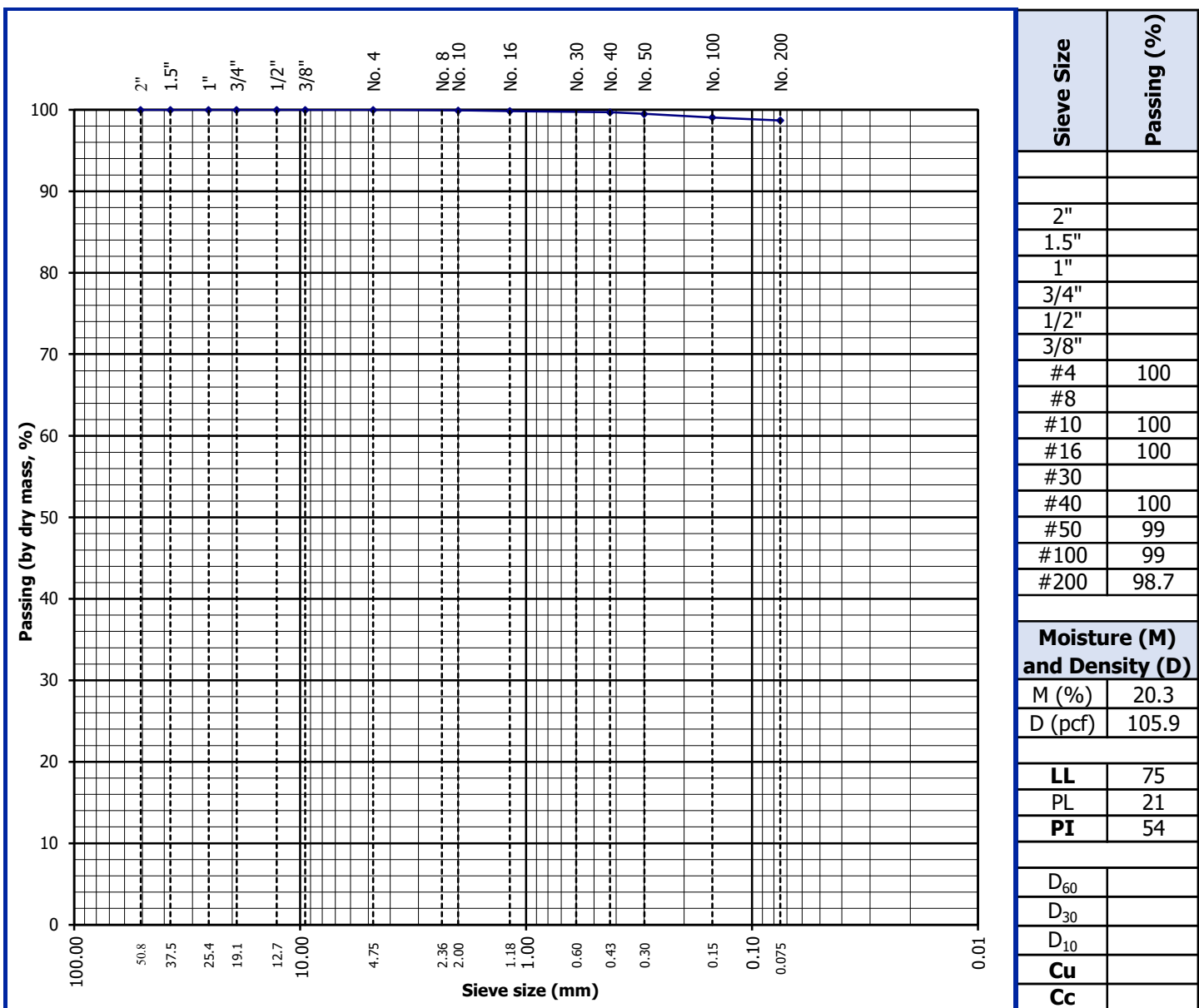
AASHTO M145 Classification				Soaking Method	
Classification	A-7-6	Group Index		Procedure	Method
			59	AASHTO T11	
Unified Soil Classification System (ASTM D2487)				ASTM D1140	B
(CH)	Fat clay			Specimen soaking time (min)	1,440



GRADATION PLOT - SOIL AND AGGREGATE

Project number	23.118	Date	November 16, 2023
Project name	Indiana Street Water Main	Technician	J. McClellan/K. McNally
Lab ID number	2321117	Reviewer	G. Hoyos
Sample location	B-13 at 4 feet		
Visual description	CLAY, gray		

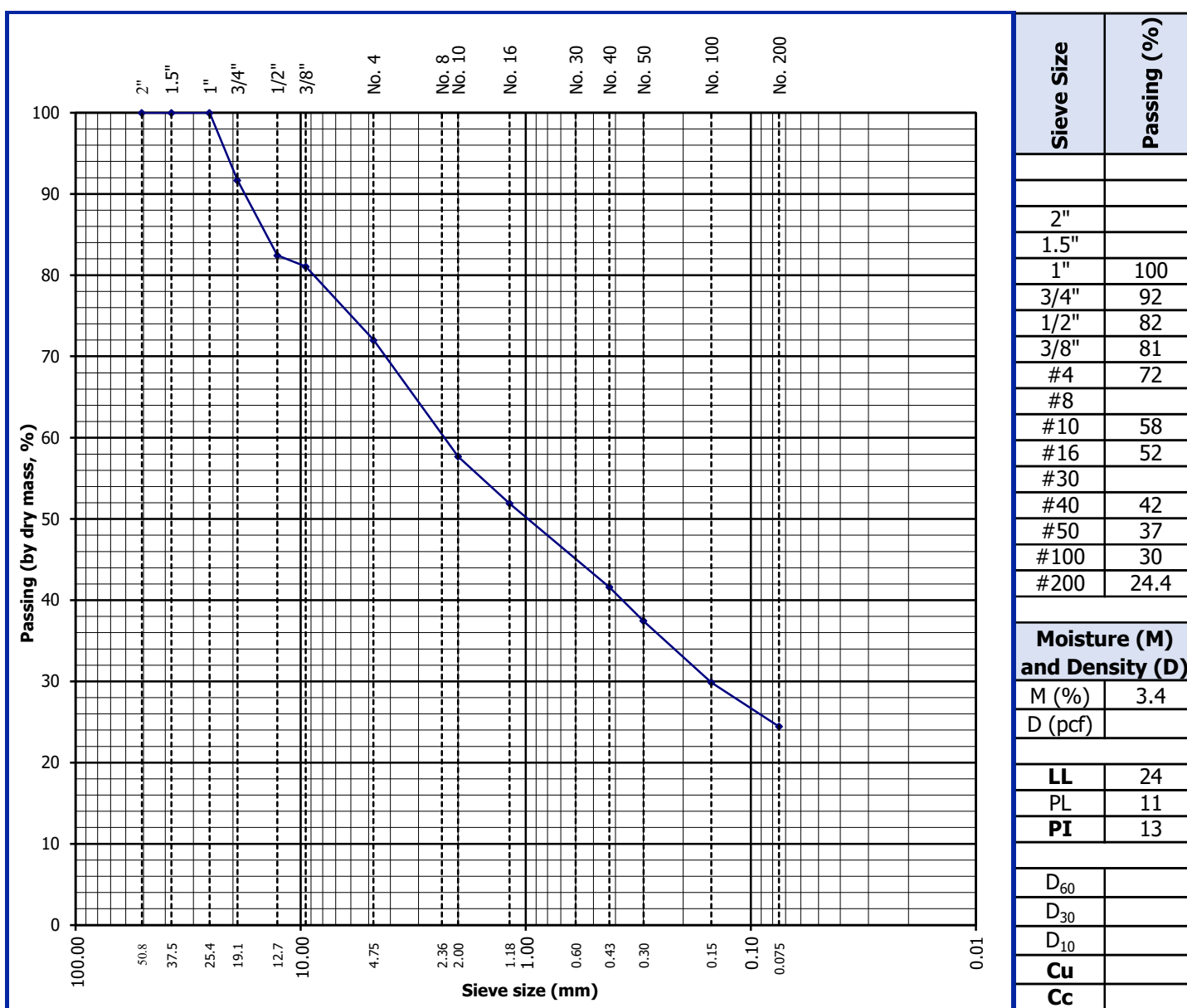
AASHTO M145 Classification				Soaking Method	
Classification	A-7-6	Group Index		Procedure	Method
		61		AASHTO T11	
Unified Soil Classification System (ASTM D2487)				ASTM D1140	B
(CH)	Fat clay			Specimen soaking time (min)	1,440



GRADATION PLOT - SOIL AND AGGREGATE

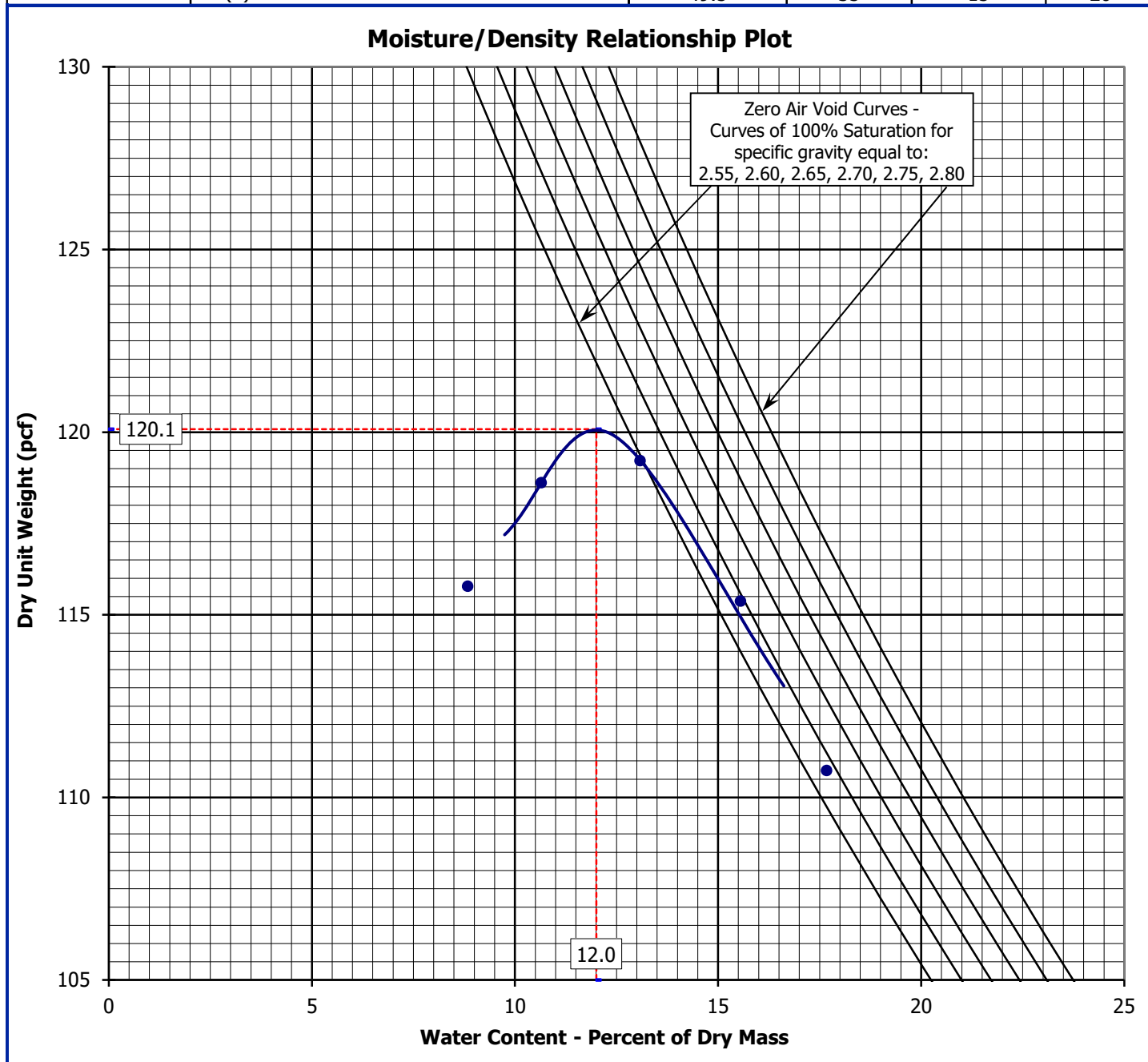
Project number	23.118	Date	November 16, 2023
Project name	Indiana Street Water Main	Technician	J. McClellan
Lab ID number	2321118	Reviewer	G. Hoyos
Sample location	B-14 at 9 feet		
Visual description	SAND, clayey, with gravel, brown		

AASHTO M145 Classification				Soaking Method	
Classification	A-2-6	Group Index	0	Procedure	Method
Unified Soil Classification System (ASTM D2487)				AASHTO T11	
(SC)	Clayey sand with gravel			ASTM D1140	B
				Specimen soaking time (min)	1,440



Project number	23.118	Date	December 4, 2023
Project name	Indiana Street Water Main	Technician	J. De Los Santos
Lab ID number	2321120	Reviewer	G. Hoyos
Sample location	B-2 at 0 to 9 feet		
Visual description	SAND, clayey, brown		

Test Procedures and Methods		Optimum Proctor Values and Correction Factors			
ASTM/AASHTO compaction test procedure designation	ASTM D698 (Standard)	Laboratory maximum dry unit weight (pcf)		120.1	
Method	B	Laboratory optimum moisture content (%)		12.0	
Classification		Minus No. 200 (%)	LL	PL	PI
USCS	(SC) Clayey sand				
AASHTO	A-6(6)	49.5	35	15	20



APPENDIX B
CITY OF ARVADA TRAFFIC CONTROL GUIDELINES



PUBLIC WORKS DEPARTMENT - ENGINEERING
PHONE: 720-898-7640

Method of Handling Traffic Guidelines for Competitive Sealed Bid

1. The contractor is advised to discuss the possible construction phasing or staging with the Project Engineer and Traffic Engineer to understand the overall traffic impacts and associated traffic control plan.
2. The TCP should clearly demonstrate safe and efficient traffic operations transition between the construction phases.
3. The reduction in the speed limit along the project or construction site needs to be reviewed and approved by the Traffic Engineer.
4. It's anticipated that construction will be completed in stages/phases, and if so:
 - Each stage/phase will require a thorough MHT.
 - Each stage/phase of MHT should thoroughly show how the road will be opened to live traffic and how each stage/phase will be handled independently of the other.
 - Due to the expected amount of traffic during construction, each stage/phase will also require a thorough detour plan with the use of Variable Message Signs (VMS).
5. Jersey Barriers will be required to separate/prevent traffic from crossing over into proposed waterline work, along the shoulder and within the street.
6. Optimal traffic signal controller timing will be required at all affected signalized intersections before MHT permit approval. Controller timing will need to properly accommodate vehicles, bikes, and pedestrians. Placing signals on flash will not be acceptable. Please forward signal timing to Nate Sexton (nsexton@arvada.org) at least 7 days before applying for MHT permit to allow time for review.
7. Please be aware of the possible UTC requirements as per the City of Arvada engineering standards.
8. Work or traffic impacts along state highways will require a permit from CDOT before construction can begin.
9. All temporary traffic control shall be in conformance with the latest edition of the MUTCD and the City of Arvada standards.

BID BOND

We, the undersigned _____ as Principal, and _____ as Surety, are hereby held and firmly bound unto the City of Arvada, Colorado, in the penal sum of _____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

THE CONDITION of this obligation is such that whereas the Principal has submitted to the City of Arvada, Colorado the accompanying Bid Proposal, and hereby made a part hereof to enter into a Contract Agreement for the construction of City of Arvada Project No. 23-WA-20.

WHEREAS, the City, as a condition for receiving said Bid Proposal, requires the Principal to deposit with the City a Bid Proposal Guaranty, equivalent to not less than 5 Percent of the amount of said Bid Proposal.

NOW THEREFORE,

- (A) If said Bid Proposal shall be rejected; or in the alternate,
- (B) If said Bid Proposal shall be accepted and the Principal shall execute and deliver a Contract Agreement (properly completed in accordance with said Bid Proposal) and shall furnish a Performance and Payment Bond upon the forms prescribed by the City for the faithful performance of said Contract; and for the payment of all persons performing labor or furnishing materials in connection therewith; and shall in all other respects perform the agreement created by the acceptance of said Bid Proposal;

Then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the City may accept such Bid and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, this ____ day of _____, 20__, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

PRINCIPAL

SURETY

Name: _____

Address: _____

By: _____

By: _____

Title: _____

Title: _____

Attorney-in-Fact:

(SEAL)

NOTE: Surety Companies executing bonds must be authorized to transact business in the State of Colorado and be acceptable to the City.

BID PROPOSAL

TO: City of Arvada, Colorado (hereinafter called "CITY").

FROM: _____ (hereinafter called "BIDDER"), organized and existing under the laws of the State of _____ doing business as (a corporation), (a partnership), (an individual).

The Bidder, in compliance with your Advertisement for Bids, hereby proposes to perform all Work in strict accordance with the Contract Documents, for the construction of City of Arvada Project No. **23-WA-20** entitled **12-inch Water Main – (Zone 5) Indiana Street** within the time set forth therein, and at the prices stated on the included Bid Schedule as totaled herein.

By submission of this Bid Proposal, each Bidder certifies, and in the case of a joint venture each party thereto certifies as to his/her own organization, that this Bid Proposal has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid Proposal with any other Bidder or with any competitor.

Bidder acknowledges receipt of **Addendum Nos.** Initials: _____

Bidder states that their:

Major Material Suppliers are:

Material They Will Supply

Major Subcontractors are:

Work They Will Perform

CONTRACT TIME AND LIQUIDATED DAMAGES: All work shall be completed, including clean-up, within **270** working days after the date to be specified in the Notice to Proceed. A Notice to Proceed is anticipated to be issued on or about **September 16, 2024**. For each calendar day that the work exceeds the allotted contract time, the Contractor shall agree to pay the owner Liquidated Damages per section 1121.07 of the City of Arvada Engineering Code Standards and Specifications (latest version). Contract time maybe adjusted by Change Order.

Total from included Bid Schedule: **TOTAL BID \$** _____

SUBMITTED BY:

Company Name: _____

Contact Names: _____

Address: _____

Phone: (_____) _____ Email(s): _____

The undersigned hereby affirms that:

- He/she is a duly authorized agent of the Contractor;
- He/she has read all Terms and Conditions and technical specifications made available in conjunction with this solicitation and fully accept and acknowledge this bid is consistent with the specifications and terms and conditions.
- The bid is in all respects fair, without outside collusion or otherwise illegal action.

By: _____ Signature of
Authorized Agent Date FEIN

Typed/Printed Name of Agent

Title of Agent

Agent email

PAYMENT TERMS: The City standard is net thirty (30) days but every effort is made to meet net fifteen (15) days after the approved partial payment date when the contractor is satisfactorily performing the contract. The final 5% of total payment will be paid once the contract is completed satisfactorily, advertisement for final settlement is complete, and the project is accepted by the City. Payment is the date of the check mailing or date of the credit card transaction.



City of Arvada

Bid Items

Item Number	Item Description	Estimated Quantity	Unit	Unit Cost	Bid Cost
1	Mobilization, Demobilization, Permits, Fees, Licenses, Administration	1	LS		
2	Traffic and Pedestrian Control	1	LS		
3	Sediment and Erosion Control	1	LS		
4	Utility Locate Potholing	1	LS		
5	Construction Survey	1	LS		
6	Landscape Restoration, including Topsoil, Seeding, Sod, and Fence	1	LS		
7	Irrigation System Restoration	1	LS		
8	Excavation Dewatering	1	LS		
9	Owner Controlled Minor Contract Revisions	ALLOW	ALLOW	\$ 200,000.00	\$ 200,000.00
10	Connect to Existing 18" Waterline	1	EACH		
11	Connect to Existing 12" Waterline	1	EACH		
12	12" Waterline, C909 PVCO PC 235 psi, Complete in Place	3,120	LF		
13	12" Waterline, C909 PVCO PC 235 psi Restrained Joint, Complete in Place	2,320	LF		
14	12" Waterline, C900 DR 14 Fusible PVC, Horizontal Directional Drill, Complete in Place	440	LF		
15	12" 45° Bend w/ TB and Restrained, Complete in Place	15	EACH		
16	12" 22.5° Bend w/ TB and Restrained, Complete in Place	2	EACH		
17	12" 11.25° Bend w/ TB and Restrained, Complete in Place	7	EACH		
18	12" Tee w/ TB and Restrained, Complete in Place	1	EACH		
19	18" x 12" Tee w/ TB and Restrained, Complete in Place	1	EACH		
20	12" MJ Gate Valve, Restrained, Complete in Place	14	EACH		
21	18" MJ Butterfly Valve, Restrained, Direct Bury, Complete in Place	1	EACH		
22	12" Plug, Restrained, Complete in Place	1	EACH		
23	12" Solid Sleeve, Complete in Place	1	EACH		
24	12" Waterline Lowering, Restrained, Complete in Place	6	EACH		
25	12" Waterline Casing, Complete in Place	110	LF		
26	2" Air Release and Vacuum, Complete in Place	11	EACH		
27	2" Blow-off, Complete in Place	3	EACH		

SAMPLE ONLY – Please Use Excel Bid Schedule

Item Number	Item Description	Estimated Quantity	Unit	Unit Cost	Bid Cost
28	Flowfill Cut-off Wall, Complete In Place	2	EACH		
29	Flowfill, as Directed by City	400	CY		
30	2" Thick Layer of Extruded Polystyrene Insulation Foam, Complete In Place	1,000	SF		
31	Removal and Disposal of Asphalt Pavement with Full Depth Sawcut	3,100	SY		
32	Asphalt Patch, Hwy 72, Complete In Place	7	SY		
33	2" Mill	1,800	SY		
34	4" HBP Grade SG, (75) PG 64-22 20% RAP Asphalt	715	TON		
35	3" HBP Grade S, (75) PG 64-22, 20% RAP Asphalt	536	TON		
36	2" HBP Grade Sx, (75) PG 64-22 Asphalt	640	TON		
37	4" HBP Grade S, (75) PG 58-28, 20% RAP Asphalt	55	TON		
38	2" HBP Grade Sx, (75) PG 58-28 Asphalt	55	TON		
39	4" White Line, Complete In Place	2,250	LF		
40	6" White Line, Complete In Place	430	LF		
41	Double Yellow Line, Complete In Place	500	LF		
42	Right Turn Arrow, Complete In Place	4	EACH		
43	24" Stop Bar, Complete In Place	36	LF		
44	2 ft x 8 ft Crosswalk Bar, Complete In Place	16	EACH		
45	Bike Lane and Arrow Symbol, Complete In Place	3	EACH		
46	2.5' Curb and Gutter Removal and Replacement, Complete In Place	250	LF		
47	Remove and Replace ADA Ramp, Complete In Place	1	EACH		
48	Remove and Replace Concrete Apron, Complete In Place	60	SY		
49	Hauling, Drying, Mixing, and Disposal of Drilling Mud	1	LS		
50	Stabilization Material - Class 6 Road base, as Directed by City	500	CY		
			TOTAL COST		

This bid schedule is understood to be all inclusive of the workshown on the contract documents. Items that are not specifically indicated by an individual bid item are understood to be incidental and included in the lump sum cost of a related bid item.

Clearly Print Company Name

Signature

The City of Arvada and J&T Consulting, Inc. assume no liability for the accuracy of the formulas contained in this worksheet. It is the responsibility of the contractor to verify all formulas prior to submitting the bid to the City of Arvada.

REQUIRED CONTRACTOR SUBMITTAL FORM

SUBMITTAL CHECKLIST:

Bid Proposals shall be submitted in the order listed below with each section clearly identified. **Missing information or required documents may result in submission being deemed non-responsive.**

- ☐ Submit completed Bid Bond, Bid Proposal, Bid Schedule, Required Contractor Submittal, and any other attachments requested.
- ☐ Submit evidence of Minimum Requirements, number 1 under Special Terms and Conditions, on page 5
- ☐ Submit implementation timeline and warranties, if applicable.
- ☐ Attach Contractor's Licensing, if applicable.
- ☐ Insurance – Checking this box accepts that the insurance requirements listed by the City are acceptable.
- ☐ Variations: Checking this box indicates that the contractor has variations to this solicitation. Identify all variations and exceptions to this CSB on a separate sheet/s of paper. If variations are not stated in the contractor's Offer, it shall be agreed that the contractor's Offer fully complies with all conditions identified in this Solicitation. For each variation listed, reference the applicable section of the solicitation document, the page number, and the variance. Submittal of a vendor contract is considered excessive in variations and may be cause for determining that the Bid is non-responsive and ineligible for award.

REFERENCES:

Check here if Contractor's standard reference sheet is attached, otherwise, use the space below.

Name: _____ Contact Person: _____

Address: _____

Telephone No: _____ Email: _____

Describe type of work/service performed or items supplied: _____

Name: _____ Contact Person: _____

Address: _____

Telephone No: _____ Email: _____

Describe type of work/service performed or items supplied: _____

Name: _____ Contact Person: _____

Address: _____

Telephone No: _____ Email: _____

Describe type of work/service performed or items supplied: _____

CONTRACT DOCUMENTS

The following pages contain documents used upon contract award. They are included here for reference and are subject to change.

PERFORMANCE AND PAYMENT BOND

Bond No. _____

(Firm) _____

(Address) _____

(an Individual), (a Partnership), (a Corporation), hereinafter called Principal; and

(Firm) _____

(Address) _____

hereinafter called Surety, are held and firmly bound unto the City of Arvada, a Colorado municipal corporation, 8101

Ralston Road, Arvada, Colorado 80002, hereinafter called the City, in the penal sum of _____, Dollars,

_____ , in lawful money of the United States, for the payment of such sum will and truly to

be made, we bind ourselves, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that the Principal entered into a certain Contract with the City, dated the _____ day of _____, 20_, a copy of which is hereto attached and made a part hereof, for the performance

of City of Arvada Project No.'s 23-WA-20, 12-inch Water Main – (Zone 5) Indiana Street.

NOW THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions and agreements of said Contract during the original term thereof, and any extensions thereof which may be granted by the City, with or without Notice to the surety and during the life of the guaranty period, and if he shall satisfy all claims and demands incurred under such Contract, and shall fully indemnify and save harmless the City from all cost and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the City all outlay and expense which the City may incur in making good any default, and if he shall promptly make payment to all persons, firms, subcontractors and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such Contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, repairs on machinery, equipment and tools, consumed, rented or used in connection with the construction of such work, and all insurance premiums on said work, and for all labor, performed in such work whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the specifications accompanying the same shall in anyway affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between City and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in three counterparts, each one of which shall be deemed an original, this the ____ day of _____, 20_.

IN PRESENCE OF:

PRINCIPAL _____

By _____

Address _____

(Corporate Seal)

OTHER PARTNERS

(Surety Seal)

SURETY _____

Attorney _____ in _____ Fact _____

Address _____

Note: If Contractor is Partnership, all partners should execute Bond.

Important: Surety Company must be authorized to transact business in the State of Colorado and be acceptable to the City.

NOTICE OF AWARD

Date

Company
Address
City, State Zip

RE: Project No. 23-WA-20, 12-inch Water Main – (Zone 5) Indiana Street

Dear Representative of _____:

The City of Arvada, Colorado (hereinafter called "City") has considered the Bid Proposals submitted for referenced work in response to its Advertisement for Bids dated _____ and Information for Bidders.

You are hereby notified that your Bid Proposal has been accepted, for items and prices stated in the Bid Schedule, in the amount of \$ _____.

You are required to execute the Contract, the Insurance Certificates and a Performance and Payment Bond within seven (7) days from the date of this Notice to you.

The Performance and Payment Bond needs to be filled out, returned (one original must be returned to the City), and accompanied by the Power of Attorney from your surety company. Also, please make sure that the insurance certificate is in the minimum amounts set forth in the Contract Documents and the City of Arvada is named as an additional insured for the specific Project Number and Title. An Additional Insured endorsement certificate should also be attached.

If you fail to execute said Contract and furnish the necessary Insurance Certificates and Bond within the time allotted from this date, the City will be entitled to consider all your rights arising out of the City's acceptance of your Bid Proposal as abandoned and as a forfeiture of your Bid Bond. The City will be entitled to such other rights as may be granted bylaw.

You are required to return an acknowledged copy of this Notice of Award and enclosures to the Project Engineer.

CITY OF ARVADA, COLORADO

City Engineer

BIDDER

Company

Receipt of above Notice of Award accompanied with a Performance and Payment Bond form and a copy of the Contract is hereby acknowledged.

This _____ day of _____, 20____.

By: _____

Name: _____

Title: _____

NOTICE TO PROCEED

Date

Company
Address
City, State Zip

RE: Project No. 23-WA-20, 12-inch Water Main – (Zone 5) Indiana Street

Dear Representative of _____:

You are hereby notified to commence work on referenced Project, in accordance with the Contract dated _____
on or before _____, and you are to complete the Work, including cleanup within _____ calendar days thereafter.

The date of completion of all Work is therefore _____.

CITY OF ARVADA, COLORADO

City Engineer

BIDDER

Receipt of this Notice to Proceed is hereby acknowledged this _____ day of _____, 20____.

Company

By: _____

Title: _____

AN AGREEMENT BY AND BETWEEN THE CITY OF ARVADA AND
_____ FOR _____
IN AN AMOUNT NOT TO EXCEED \$ _____ .00

This Agreement made this _____ day of _____, 20____ by and between the City of Arvada, a home rule municipal corporation (“Arvada” and/or “City”) and _____, a _____ (“Contractor”).

WITNESSETH: That for and in consideration of the covenants, promises, and payments hereinafter mentioned:

1. Contractor will commence and complete the _____ described in the Contract Documents relating to CSB- _____, issued _____, 20 , (“the Work”).
2. Contractor will furnish all material, supplies, tools, equipment, labor, and other services necessary for the completion of the Work.
3. Contractor will commence the work required by the Contract Documents within ten (10) calendar days after the date of Notice to Proceed.
4. Contractor will complete the work required by the Contract Documents by _____ after the date of the Notice to Proceed unless the period for completion is extended otherwise by the Contract Documents.
5. Contractor agrees to perform all of the work described in the Contract Documents for an amount not to exceed \$ _____ .00 for the Work.
6. The term “Contract Documents” means and includes the following:
 - A. Arvada’s Request for [Project Title], CSB- _____ (“CSB”);
 - B. CSB Exhibits (if any);
 - C. CSB Addenda (if any);
 - D. Contractor’s Response to CSB- _____, Advertisement for Bid, Bid Proposal, Bid Schedule, Bid Bond, Certificate of Insurance;
 - E. Notice of Award;
 - F. Performance and Payment Bond;
 - G. Notice to Proceed;
 - H. Change Orders (if any);
 - I. City of Arvada Engineering Code of Standards and Specifications;
 - J. Project special provisions prepared or issued by City of Arvada (or its Consultant if applicable);
 - K. Detail drawings and Bid Documents prepared or issued by City of Arvada (or its Consultant if applicable);
 - L. Specification Illustrations and attachments; and
 - M. All supplementary requirements regarding wage rates, E.E.O., affirmative action and all other Federal-State requirements as outlined in the specifications.
7. INVOICES AND COMPENSATION. Contractor will follow Bid schedule and partial payments will be made accordingly NET 15 but no later than NET 30.
8. GENERAL TERMS AND CONDITIONS, SPECIAL TERMS AND CONDITIONS, INSURANCE

REQUIREMENTS, PROJECT SPECIAL PROVISIONS, AND OTHER CSB REQUIREMENTS. Contractor affirms that it has read and is familiar with the Contract Documents, including but not limited to the General Terms and Conditions, Special Terms and Conditions, Insurance Requirements, Project Special Provisions, and other CSB requirements, and agrees to be bound by those terms and conditions.

9. CHANGE ORDERS. Contractor shall perform the Work as described in the Contract Documents or as amended by the mutual consent of the parties in writing. Should the parties agree in writing to a change in the scope of services, then the parties will timely execute any applicable Change Order, which will address changes in scope of services, completion date, contract amount, any applicable material modifications, and any other matters that the parties deem necessary.

10. PREFERENCES IN EMPLOYMENT OF COLORADO LABOR. To the extent that obligations and responsibilities may be established by C.R.S. § 8-17-101 *et seq.*, as amended, with respect to certain public entities and those contracting therewith as to the procurement of services:

- a. Colorado labor shall be employed to perform eighty percent (80%) of the work.
- b. Any waiver of this requirement must comply with C.R.S. § 8-17-101 *et seq.*, as amended.

11. PERFORMANCE MEASURES. The Performance Measures for this Agreement shall be those outlined by Arvada in Section 22 of Special Terms and Conditions for Bidders in the CSB, which are included in the Contract Documents that are exhibits to this agreement.

12. ADDITIONAL DOCUMENTS OR ACTION. The parties agree to execute any additional documents and to take any additional action that is necessary to carry out this Agreement.

13. BINDING EFFECT. This Agreement shall inure to the benefit of, and be binding upon, the parties, their respective legal representatives, successors, heirs, and assigns; provided, however, that nothing in this paragraph shall be construed to permit the assignment of this Agreement except as otherwise expressly authorized herein.

14. PARAGRAPH CAPTIONS. The paragraph captions in this Agreement are set forth only for the convenience and reference of the parties and are not intended in any way to define, limit, or describe the scope or intent of this Agreement.

15. INTEGRATION, AMENDMENT, AND SEVERABILITY. This Agreement represents the entire agreement between the parties, and there are no oral or collateral agreements or understandings. This Agreement may be amended only by an instrument in writing signed by the parties. If any other provision of this Agreement is held invalid or unenforceable, no other provision shall be affected by such holding, and all of the remaining provisions of this Agreement shall continue in full force and effect if the essential terms and conditions of this Agreement for both parties remain valid, legal, and enforceable.

16. NOTICES. Any notice or notification required or permitted by the Agreement shall be in writing and shall be deemed to have been sufficiently given for all purposes if sent by certified mail or registered mail, postage and fees prepaid, addressed to the party to whom such notice is to be given at the address set forth on the signature page below, or at such other address as has been previously

furnished in writing, to the other party or parties. Such notice or notification shall be deemed to have been given when deposited in the United States mail.

17. **BINDING AUTHORITY.** Contractor represents and affirms that the signature page hereof accurately states the full legal name of Contractor (whether as a corporation, partnership, limited liability company, sole proprietorship, or other), contains all requisite signature(s) on behalf of Contractor, has been properly acknowledged by attestation, notary acknowledgment, or both, and in all other respects is effective to bind Contractor, in accordance with all applicable statutes, regulations, resolutions, rules, bylaws, agreements, or similar sources of authority or limitation. This Agreement may be executed in counterpart(s), each of which shall be deemed to be an original, and all of which, taken together, shall constitute one instrument.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement which shall be deemed an original on the date first above written.

CITY OF ARVADA, COLORADO

8101 Ralston Road
Arvada, CO 80002

ATTEST/WITNESS:

City Clerk

APPROVED AS TO FORM:

For Rachael Morris, City Attorney

By: _____

CONTRACTOR

Name:

Title:

CHANGE ORDER

No. _____

TO:

Upon Contractor acceptance and City approval, the work and Contract Documents for City of Arvada, Project No. _____, entitled _____ will be adjusted to include the following:

<u>Item</u>	<u>Description</u>	<u>Qty.</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Add/Delete</u>
1.	<u>ADD</u>				
2.					
3.					
4.					

TOTAL ADD

\$

Adjustments to Contract Price & Time

Contract
Dollars

Calendar
Days

Contract Totals through and including
Previous Change Orders
Adjustments this Change Order
(Increase)
Contract Totals to Date – Including
Change Order No. _____

\$
\$
\$

Contract Time Expires on:

APPROVED FOR CITY

8101 Ralston Road
Arvada, CO 80002

ATTEST:

City Clerk

ACCEPTED FOR CONTRACTOR

By: _____

Title: _____

Date: _____

APPROVED AS TO FORM:

For Rachael Morris, City Attorney

By: _____



CITY OF ARVADA

PURCHASING DIVISION
FACSIMILE: 720-898-7098 ▲ TDD: 720-898-7869
PHONE: 720-898-7099

REQUEST FOR BIDS - ADDENDUM No. 1

Bid #: 23-ENG-050

Title: 12 Inch Water Main (Zone 5) Indiana St

CSB Issued: 06/13/2024

Addendum #: 1

Today's Date: 06/27/2024

BIDS Due By: 07/09/2024 **2:00 PM** MDT (NO CHANGE)

Questions Deadline: 06/25/2024 **2:00 PM** MDT (NO CHANGE)

Solicitation and all related addenda and communications are available at WWW.BIDNETDIRECT.COM

The following clarifications are provided to be incorporated into the Request for BIDS
All other information shall remain unchanged.

1. Pre-Bid Meeting Attendance Sheet
2. Pre-Bid Meeting Agenda
3. Questions/Answers:
4. Qualifications Sheet
5. Clarification: Per City of Arvada Engineering Specification 367.00, "We will not accept well-grade material for pipe bedding. The only material for pipe bedding that will be accepted is Squeegee."

PRE-BID MEETING ATTENDANCE SHEET

Bid # 24-ENG-050 23-WA-20 12 Inch Water Main (Zone 5) Indiana St

Meeting Date/Time: 06/18/2024

Facilitator: Jessica Metcalf

Place: Virtual

Company	Representative Name	E-Mail
RD Pipeline	Shelby Maschari	
Global Underground Corp	Enrique Camncho	
Colorado Infrastructure	Mark Lovecchio	
Diamond Contracting Corp	Shane Hoerig	
Harper Brothers	Michelle Wilson	
	Stan Bistine	
BT Construction	Kyle Cope	
Reynolds Construction	Brandon Vinson	
WW Clyde	Chad Mercer	
	Cassie Harmon	
Elevated Excavating	Stanton Bistline	
	Robert Meadows	

Global	Doug	
Company	Representative Name	E-Mail
Native Sun Construction	Fredrickson Barlow	
Wagner Construction	Trevor Plasky	
SNH West LLC	Mike Henkel	
Convoy Excavating	Jay Convoy	



PRE-BID MEETING AGENDA

23-WA-20 12-inch Water Main (Zone 5) Indiana St

CSB 24-ENG-050

6/18/2024, 10:00 am MDT - MANDATORY

Virtual – Mandatory Google Meet

Video call link: <https://meet.google.com/jrf-qkjf-den>

Or dial: 7304

-620-(US)

+1 518 PIN: 396 158 361#

1. Attendance:
 - a. City of Arvada:
 - i. Jess Metcalf
 - ii. Matt Amidei
 - iii. Mary Stahl
 - iv. Doreen Mazza
 - v. Raymond Garcia
 - vi. Stephen Trujillo
 - b. Consultant:
 - i. Jason Murray
 - ii. Cassie Harmon
 - c. Contractors – See Attendance Sheet
2. Purchasing
 - a. Questions – how to submit and get official answers.
 - b. CSB Documents
 - c. Bid Submissions
 - d. Other
3. Proposal Schedule
 - a. July 9, 2024 at 2:00 pm - Proposals due via BidNet
 - b. June 25, 2024 - Last day for questions. Questions must be submitted via BidNet.
 - c. Addendum 1 will be issued and will include, the sign-in for this meeting, this agenda, and answers to any questions.
 - d. Award and NTP timeline.
 - i. Intent to award the week of 7/15.
 - ii. City Council Date - 8/19
 - iii. Notice to Proceed shortly after
4. Project Summary/Highlights
 - Location – Between W 86th Parkway, Candelas Parkway, and W 91st Drive
 - 5,880 LF total project length
 - 440 LF of HDD Boring

- Tie-in to an 18-in on Hwy 72 and an existing 12-in on W 91st Dr
 - CDOT coordination/permit for work within Hwy 72
- KDPL Schedule limitations– coordination with KDPL and Westminster must be completed prior to constructing the crossing segments.
- Traffic Control Requirements
 - Detour Plans
 - Required signage and VMS boards.
 - Jersey Barriers
 - Traffic Signal Controller Timing
 - Traffic Control Plans included in the construction drawings are for reference only and will not be accepted for the traffic control permit.

5. Project Schedule – Final Completion 270 calendar days after notice to proceed.

Questions & Answers - 1

Project 24-ENG-050 - 12 Inch Water Main (Zone 5) Indiana Street
Buying Organization City of Arvada

No	Question/Answer	Question Date
Q1	Question: Evidence of Work Completed On the bid submittal checklist, there is a section stating: "Successful installation of 5,000 LF or more of 10-16 inch diameter waterline for each of the last three years located in the Front Range of Colorado". Can you elaborate on what you want constituting evidence? Would that just be a letter on company letterhead signed or what exactly are you requiring? Answer: Please see the attached sheet for what we are looking for with the minimum qualifications for successful installation. Please use the attached sheet referenced in Question 1 for formatting.	06/18/2024
Q2	Question: Geotechnical The Geotechnical Report states on site soils are suitable for backfill. Please Confirm. Answer: CDOT Class 1 Material must be used for all backfill.	06/25/2024
Q3	Question: COA Details Details on Page 52 have redline notes indicating all backfill to be CDOT Class 1 Structural Material. Is this required for all backfill material between pipe zone and pavement? Answer: CDOT Class 1 Material must be used for all backfill.	06/25/2024
Q4	Question: Pipe Casing Page 30 and 32 show pipe encasement at two lowerings/crossings. Please confirm pipe encasement is not required at other lowerings/crossings. Answer: Yes, these are the only two required lowerings that require casing pipes.	06/25/2024
Q5	Question: Cathodic Protection Please confirm Cathodic Protection is only required for pipe casings. Answer: Yes, only casing pipes will require cathodic protection on the project.	06/25/2024
Q6	Question: 2" Blow Off Assembly Are the 2" Blow Off Assemblies intended to be permanent fixtures? If yes, shall they be taps or tee's? Answer: Yes the 2" Blow Off Assemblies shown on the plans for this project will be permanent fixtures. The 2" Blow Off Assemblies should be installed using a Tee, MJ Plug w/2" Tap.	06/25/2024
Q7	Question: Staging Area Is there a designated staging area? If yes, please provide information for requirements i.e. Location, Erosion Control, Etc. Answer: There is not a designated staging area for this project, it will be the contractor's responsibility to find and coordinate a staging area for their materials and equipment.	06/25/2024

No	Question/Answer	Question Date
Q8	Question: Groundwater The geotechnical report suggest ground water will not be encountered during excavation. Bid Line Item 8 - Excavation Dewatering suggests otherwise. Please confirm if this line item is intended to be an allowance. Answer: This City doesn't anticipate encountering ground water during construction. The City is including this line item as a contingency for any unexpected cases of groundwater.	06/25/2024
Q9	Question: 3rd Party Testing Please confirm contractor is responsible for carrying a 3rd party testing agency and required testing for the project. Answer: The City's consultant will provide a 3rd party testing agency for the required material testing for the project.	06/25/2024
Q10	Question: Kinnear Ditch Does the Kinnear Ditch Pipeline have additional requirements when crossing their easement, i.e. agreements, permits, etc. that the contractor is responsible for? Answer: Coordination with the Kinnear Ditch Pipeline is expected prior to project start. There are no permits required for other jurisdictions since this is within COA ROW. The coordination with KDPL and Westminster may require pipeline shut down for a short window of time, if within peak season for construction. If the pipeline is not active, just coordination on schedule will suffice.	06/25/2024
Q11	Question: Landscape/Irrigation Details and Information for Landscape and Irrigation are limited. Please provide additional information, i.e. boundaries, seed mix, irrigation layout, planting, etc. Answer: Any area disturbed by the contractor needs to be restored to existing conditions. Please refer to City of Arvada Engineering Code of Standards and Specification Section 1000 for required seed mix and plantings. The City doesn't anticipate running into irrigation infrastructure. There are medians that are irrigated along the project alignment, therefore irrigation may be existing within the construction boundary.	06/25/2024
Q12	Question: Section 01200 1.02 Includes Job Trailer and Utilities including power, telephone, etc. Is the contractor required to include these facilities? Answer: If the contractor requires a job trailer, all power and utilities set up are the contractor's responsibility.	06/25/2024

QUALIFICATION PROJECTS:

☐ Check here if qualifications are attached separately, otherwise, use the spaces below.

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____

Contractors Response

An Agreement By And Between The City Of Arvada And
SMH West, LLC For The 12-Inch Water Main – (Zone 5)
Indiana Street, Project No. 23-WA-20, In An Amount Not To
Exceed \$2,961,361.00

BID PROPOSAL

TO: City of Arvada, Colorado (hereinafter called "CITY").

FROM: SMH West, LLC (hereinafter called "BIDDER"), organized and existing under the laws of the State of Colorado doing business as (a corporation), (a partnership), (an individual).

The Bidder, in compliance with your Advertisement for Bids, hereby proposes to perform all Work in strict accordance with the Contract Documents, for the construction of City of Arvada Project No. **23-WA-20** entitled **12-inch Water Main – (Zone 5) Indiana Street** within the time set forth therein, and at the prices stated on the included Bid Schedule as totaled herein.

By submission of this Bid Proposal, each Bidder certifies, and in the case of a joint venture each party thereto certifies as to his/her own organization, that this Bid Proposal has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid Proposal with any other Bidder or with any competitor.

Bidder acknowledges receipt of **Addendum Nos.** Initials: 1

Bidder states that their:

Major Material Suppliers are:

Ferguson Waterworks
Burnco

Material They Will Supply

Pipe/Fittings
Aggregates

Major Subcontractors are:

Metro Pavers
Global Underground
AWP Safety

Work They Will Perform

Asphalt
Directional Drill
Traffic Control

CONTRACT TIME AND LIQUIDATED DAMAGES: All work shall be completed, including clean-up, within **270** working days after the date to be specified in the Notice to Proceed. A Notice to Proceed is anticipated to be issued on or about **September 16, 2024**. For each calendar day that the work exceeds the allotted contract time, the Contractor shall agree to pay the owner Liquidated Damages per section 1121.07 of the City of Arvada Engineering Code Standards and Specifications (latest version). Contract time maybe adjusted by Change Order.

Total from included Bid Schedule:

TOTAL BID \$ 2,961,361.00

SUBMITTED BY:

Company Name: SMH West, LLC

Contact Names: Justin Moore

Address: 900 Castleton Rd. Suite 125 Castle Rock, CO 80109

Phone: (720) 762-8870 Email(s): Justin.moore@smhwest.com

The undersigned hereby affirms that:

- He/she is a duly authorized agent of the Contractor;
- He/she has read all Terms and Conditions and technical specifications made available in conjunction with this solicitation and fully accept and acknowledge this bid is consistent with the specifications and terms and conditions.
- The bid is in all respects fair, without outside collusion or otherwise illegal action.

By: [Signature] 09/11/2024 _____ Signature of
Authorized Agent Date FEIN

Rob Richardson Division Leader rob.richardson@smhwest.com
Typed/Printed Name of Agent Title of Agent Agent email

PAYMENT TERMS: The City standard is net thirty (30) days but every effort is made to meet net fifteen (15) days after the approved partial payment date when the contractor is satisfactorily performing the contract. The final 5% of total payment will be paid once the contract is completed satisfactorily, advertisement for final settlement is complete, and the project is accepted by the City. Payment is the date of the check mailing or date of the credit card transaction.



24-ENG-050 23-WA-20 Zone 5 Water Line Project
12 Inch Water Line
Bid Sheet
06.13.24

CONTRACTOR NAME: SMH West, LLC

ADDRESS, CITY , ZIP: 900 Castleton Road, Suite 125 Castle Rock, CO 80109

DATE: 7/9/2024

BID PREPARED BY: Justin Moore

City of Arvada

Bid Items

Item Number	Item Description	Estimated Quantity	Unit	Unit Cost	Bid Cost
1	Mobilization, Demobilization, Permits, Fees, Licenses, Administration	1	LS	\$72,549.00	\$72,549.00
2	Traffic and Pedestrian Control	1	LS	\$445,310.00	\$445,310.00
3	Sediment and Erosion Control	1	LS	\$23,561.00	\$23,561.00
4	Utility Locate Potholing	1	LS	\$34,877.00	\$34,877.00
5	Construction Survey	1	LS	\$18,165.00	\$18,165.00
6	Landscape Restoration, including Topsoil, Seeding, Sod, and Fence	1	LS	\$40,014.00	\$40,014.00
7	Irrigation System Restoration	1	LS	\$10,899.00	\$10,899.00
8	Excavation Dewatering	1	LS	\$1,671.00	\$1,671.00
9	Owner Controlled Minor Contract Revisions	ALLOW	ALLOW	\$200,000.00	\$200,000.00
10	Connect to Existing 18" Waterline	1	EACH	\$13,782.00	\$13,782.00
11	Connect to Existing 12" Waterline	1	EACH	\$6,130.00	\$6,130.00
12	12" Waterline, C909 PVCO PC 235 psi, Complete in Place	3,120	LF	\$123.00	\$383,760.00
13	12" Waterline, C909 PVCO PC 235 psi Restrained Joint, Complete in Place	2,320	LF	\$171.00	\$396,720.00
14	12" Waterline, C900 DR 14 Fusible PVC, Horizontal Directional Drill, Complete in Place	440	LF	\$484.00	\$212,960.00
15	12" 45° Bend w/ TB and Restrained, Complete in Place	15	EACH	\$1,427.00	\$21,405.00
16	12" 22.5° Bend w/ TB and Restrained, Complete in Place	2	EACH	\$1,360.00	\$2,720.00
17	12" 11.25° Bend w/ TB and Restrained, Complete in Place	7	EACH	\$1,324.00	\$9,268.00
18	12" Tee w/ TB and Restrained, Complete in Place	1	EACH	\$2,345.00	\$2,345.00
19	18" x 12" Tee w/ TB and Restrained, Complete in Place	1	EACH	\$4,894.00	\$4,894.00
20	12" MJ Gate Valve, Restrained, Complete in Place	14	EACH	\$4,307.00	\$60,298.00
21	18" MJ Butterfly Valve, Restrained, Direct Bury, Complete in Place	1	EACH	\$8,185.00	\$8,185.00
22	12" Plug, Restrained, Complete in Place	1	EACH	\$982.00	\$982.00
23	12" Solid Sleeve, Complete in Place	1	EACH	\$1,803.00	\$1,803.00

Item Number	Item Description	Estimated Quantity	Unit	Unit Cost	Bid Cost
24	12" Waterline Lowering, Restrained, Complete in Place	6	EACH	\$7,572.00	\$45,432.00
25	12" Waterline Casing, Complete in Place	110	LF	\$264.00	\$29,040.00
26	2" Air Release and Vacuum, Complete in Place	11	EACH	\$14,972.00	\$164,692.00
27	2" Blow-off, Complete in Place	3	EACH	\$4,752.00	\$14,256.00
28	Flowfill Cut-off Wall, Complete in Place	2	EACH	\$2,444.00	\$4,888.00
29	Flowfill, as Directed by City	400	CY	\$244.00	\$97,600.00
30	2" Thick Layer of Extruded Polystyrene Insulation Foam, Complete in Place	1,000	SF	\$8.00	\$8,000.00
31	Removal and Disposal of Asphalt Pavement with Full Depth Sawcut	3,100	SY	\$40.00	\$124,000.00
32	Asphalt Patch, Hwy 72, Complete in Place	7	SY	\$138.00	\$966.00
33	2" Mill	1,800	SY	\$13.00	\$23,400.00
34	4" HBP Grade SG, (75) PG 64-22 20% RAP Asphalt	715	TON	\$162.00	\$115,830.00
35	3" HBP Grade S, (75) PG 64-22, 20% RAP Asphalt	536	TON	\$162.00	\$86,832.00
36	2" HBP Grade Sx, (75) PG 64-22 Asphalt	640	TON	\$167.00	\$106,880.00
37	4" HBP Grade S, (75) PG 58-28, 20% RAP Asphalt	55	TON	\$168.00	\$9,240.00
38	2" HBP Grade Sx, (75) PG 58-28 Asphalt	55	TON	\$168.00	\$9,240.00
39	4" White Line, Complete in Place	2,250	LF	\$1.50	\$3,375.00
40	6" White Line, Complete in Place	430	LF	\$2.00	\$860.00
41	Double Yellow Line, Complete in Place	500	LF	\$3.00	\$1,500.00
42	Right Turn Arrow, Complete in Place	4	EACH	\$350.00	\$1,400.00
43	24" Stop Bar, Complete in Place	36	LF	\$15.00	\$540.00
44	2 ft x 8 ft Crosswalk Bar, Complete in Place	16	EACH	\$300.00	\$4,800.00
45	Bike Lane and Arrow Symbol, Complete in Place	3	EACH	\$500.00	\$1,500.00
46	2.5' Curb and Gutter Removal and Replacement, Complete in Place	250	LF	\$87.00	\$21,750.00
47	Remove and Replace ADA Ramp, Complete in Place	1	EACH	\$6,041.00	\$6,041.00
48	Remove and Replace Concrete Apron, Complete in Place	60	SY	\$276.00	\$16,560.00
49	Hauling, Drying, Mixing, and Disposal of Drilling Mud	1	LS	\$18,441.00	\$18,441.00
50	Stabilization Material - Class 6 Road base, as Directed by City	500	CY	\$144.00	\$72,000.00
				TOTAL COST	\$ 2,961,361.00

This bid schedule is understood to be all inclusive of the workshown on the contract documents. Items that are not specifically indicated by an individual bid item are understood to be incidental and included in the lump sum cost of a related bid item.

Clearly Print Company Name: SMH West, LLC

Item Number	Item Description	Estimated Quantity	Unit	Unit Cost	Bid Cost
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Signature

The City of Arvada and J&T Consulting, Inc. assume no liability for the accuracy of the formulas contained in this worksheet. It is the responsibility of the contractor to verify all formulas prior to submitting the bid to the City of Arvada.

BID BOND

We, the undersigned SMH West LLC as Principal, and Liberty Mutual Insurance Company as Surety, are hereby held and firmly bound unto the City of Arvada, Colorado, in the penal sum of Five Percent (5%) of the Total Amount Bid----- for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

THE CONDITION of this obligation is such that whereas the Principal has submitted to the City of Arvada, Colorado the accompanying Bid Proposal, and hereby made a part hereof to enter into a Contract Agreement for the construction of City of Arvada Project No. 23-WA-20.

WHEREAS, the City, as a condition for receiving said Bid Proposal, requires the Principal to deposit with the City a Bid Proposal Guaranty, equivalent to not less than 5 Percent of the amount of said Bid Proposal.

NOW THEREFORE,

- (A) If said Bid Proposal shall be rejected; or in the alternate,
- (B) If said Bid Proposal shall be accepted and the Principal shall execute and deliver a Contract Agreement (properly completed in accordance with said Bid Proposal) and shall furnish a Performance and Payment Bond upon the forms prescribed by the City for the faithful performance of said Contract; and for the payment of all persons performing labor or furnishing materials in connection therewith; and shall in all other respects perform the agreement created by the acceptance of said Bid Proposal;

Then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the City may accept such Bid and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, this 28th day of June, 2024 and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

PRINCIPAL

Name: SMH West LLC

Address: 900 Castleton Rd, Ste. 125
Castle Rock, CO 80109

By: 

Title: Rob Richardson,
Division Manager

SURETY

Liberty Mutual Insurance Company

175 Berkeley Street, Boston, MA 02116

By: 

Title: Ted Jorgensen,
Attorney-in-Fact

Attorney-in-Fact:

(SEAL)



NOTE: Surety Companies executing bonds must be authorized to transact business in the State of Colorado and be acceptable to the City.

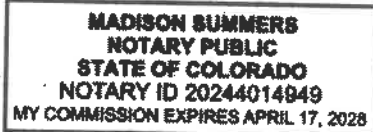
ACKNOWLEDGEMENT OF PRINCIPAL

STATE OF Colorado)

COUNTY OF Douglas)

On this 9th day of July, in the year 2024, before me personally appeared Rob Richardson,
Division Manager of
SMH West LLC, known to me to be
the person whose name is subscribed to the instrument, and acknowledge that he/she executed the same.

In WITNESS WHEREOF, I have hereunto set my hands and affixed my official seal, the day and year in
this certificate first above written.





Madison Summers, Notary Public

My Commission Expires: April 17, 2028

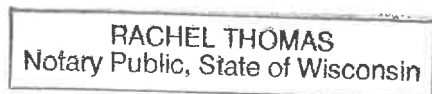
ACKNOWLEDGEMENT OF SURETY

STATE OF Wisconsin)

COUNTY OF Polk)

On this 28th day of June, in the year 2024, before me personally come(s)
Ted Jorgensen, Attorney-in-Fact of
Liberty Mutual Insurance Company, with whom
I am personally acquainted, and who, being by me duly sworn, says that he/she is the Attorney-in-Fact of
Liberty Mutual Insurance Company, the company described in and
which executed the within instrument; that he/she know(s) the corporate seal of such Company; and that the seal
affixed to the within instrument is such corporate seal and that it was affixed by order of the Board of Directors of
said Company, and that he/she signed said instrument as Attorney-in-Fact of the said Company by like order.

In WITNESS WHEREOF, I have hereunto set my hands and affixed my official seal, the day and year in
this certificate first above written.





Rachel Thomas, Notary Public

My Commission Expires: 06/21/2025



This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

Certificate No: **8210698 - 190054**

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Brian J. Oestreich, Colby D White, Emily White, Joshua R. Loftis, Lin Ulven, Melinda C. Blodgett, Michelle Morrison, Nathan Weaver, Nicole Stillings, R. C. Bowman, R. W. Frank, Rachel Thomas, Ross S. Squires, Sandra M. Engstrom, Sarah Dragt, Ted Jorgensen, Tina Domask

all of the city of Minneapolis state of MN each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 31st day of August, 2023.



Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By:

David M. Carey
David M. Carey, Assistant Secretary

State of PENNSYLVANIA ss
County of MONTGOMERY

On this 31st day of August, 2023 before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.



Commonwealth of Pennsylvania - Notary Seal
Teresa Pastella, Notary Public
Montgomery County
My commission expires March 28, 2025
Commission number 1126044
Member, Pennsylvania Association of Notaries

By:

Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV - OFFICERS: Section 12. Power of Attorney.

Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII - Execution of Contracts: Section 5. Surety Bonds and Undertakings.

Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation - The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization - By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 28th day of June, 2024.



By:

Renee C. Llewellyn
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

For bond and/or Power of Attorney (POA) verification inquiries, please call 610-832-8240 or email HOSUR@libertymutual.com.

REQUIRED CONTRACTOR SUBMITTAL FORM

SUBMITTAL CHECKLIST:

Bid Proposals shall be submitted in the order listed below with each section clearly identified. **Missing information or required documents may result in submission being deemed non-responsive.**

- ☒ Submit completed Bid Bond, Bid Proposal, Bid Schedule, Required Contractor Submittal, and any other attachments requested.
- ☐ Submit evidence of Minimum Requirements, number 1 under Special Terms and Conditions, on page 5
- ☒ Submit implementation timeline and warranties, if applicable.
- ☐ Attach Contractor's Licensing, if applicable.
- ☒ Insurance – Checking this box accepts that the insurance requirements listed by the City are acceptable.
- ☐ Variations: Checking this box indicates that the contractor has variations to this solicitation. Identify all variations and exceptions to this CSB on a separate sheet/s of paper. If variations are not stated in the contractor's Offer, it shall be agreed that the contractor's Offer fully complies with all conditions identified in this Solicitation. For each variation listed, reference the applicable section of the solicitation document, the page number, and the variance. Submittal of a vendor contract is considered excessive in variations and may be cause for determining that the Bid is non-responsive and ineligible for award.

REFERENCES:

- ☒ Check here if Contractor's standard reference sheet is attached, otherwise, use the space below.

Name: _____ Contact Person: _____

Address: _____

Telephone No: _____ Email: _____

Describe type of work/service performed or items supplied: _____

Name: _____ Contact Person: _____

Address: _____

Telephone No: _____ Email: _____

Describe type of work/service performed or items supplied: _____

Name: _____ Contact Person: _____

Address: _____

Telephone No: _____ Email: _____

Describe type of work/service performed or items supplied: _____

QUALIFICATION PROJECTS:

☒ Check here if qualifications are attached separately, otherwise, use the spaces below.

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____

Project Name: _____ Owner: _____

Project Location: _____ Date Completed: _____

Project Description: _____

Sizes of Pipe Installed: _____ Length Installed: _____

Project Manager: _____ Superintendent: _____



STATEMENT OF QUALIFICATIONS

Project #	JOB NAME	OWNER	LOCATION	Project Description	Contract Value	Start Date	Completion	Reference Name	Telephone #/ Address
21-1165	LORETTO HEIGHTS INFRASTRUCTURE	LORETTO HEIGHTS METROPOLITAN DISTRICT #1	3001 S Federal Blvd Denver CO 80236	Construction of underground utilities including 10,515 LF storm sewer, 5,600 LF sanitary sewer, 1,860 LF domestic water line, ponds, roadways, curb and gutter, sidewalks, and parking lot demolition.	\$ 8,611,000.00	1/31/2022	100%	Demetri DiLucente Project Inspector	720-391-5073 Demetri.DiLucente@denvergov.org
21-1186	CROSSROADS OFFSITE SANITARY SEWER	AURORA CROSSROADS METRO DISTRICT NO. 1	Smith Way between Smith Road & I-70 AURORA, CO	~5,700 LF of sanitary sewer, ~5,500 SY of asphalt installation, water line relocation, dewatering and erosion control.	\$ 7,452,000.00	10/14/2021	100%	Bill Rider, City of Aurora	719-314-6753
21-1188	JOHNSTOWN SOUTH WATER TANK WDS	TOWN OF JOHNSTOWN	5936 Co Rd 46 JOHNSTOWN, CO	Furnishing and installing approximately 37,300 LF of 16-inch C905 (DR 18) PVC pipeline, 12" and 16" fittings, isolation valves, 2 air relief valves, 40 fire hydrants, pipe restraints, one HDD river crossing, four bored canal crossings, two tunneled railroad crossings, two county road crossings, and related work in conjunction with construction of the Town's new South Water Tank.	\$ 9,044,000.00	12/2/2021	100%	Doug Gossert Town Engineer Town of Johnstown	970-587-9981 450 S Parish Avenue Johnstown, CO 80534
21-1189	CROSSROADS CIVIL SUBDIVISION FILING NO. 1 CIVIL	AURORA CROSSROADS METRO DISTRICT NO. 1	SE CORNER I-70 FRONTAGE ROAD & GUN CLUB ROAD AURORA, CO	A description of the Work to be performed, including all materials and labor necessary for completion of the Work, is: ~5,400 LF of roadway installation including underground utilities, curb and gutter, sidewalks, a detention pond, erosion control and other items necessary to complete the work.	\$ 12,033,449.30	12/1/2021	100%	Bill Rider, City of Aurora	719-314-6753
21-1191	WASTEWATER SYSTEM IMPROVEMENTS - FORCE MAIN	CITY OF STERLING	14580 County Road 370 STERLING, CO	Construction of approximately 19,000 linear feet of new 16-inch diameter siphoning of the existing wastewater force main with owner furnished 16-inch FPVC, construction of approximately 19,500 linear feet of 16-inch diameter new wastewater force main, and construction of approximately 2,900 linear feet of new 18-inch diameter wastewater force main. Project also includes valves, communication conduits and boxes, approximately 1,300 linear feet of CIPP, site restoration, traffic control and temporary connections.	\$ 8,098,000.00	1/12/2022	100%	George Good Director of Public Works City of Sterling	970-522-9700 421 N 4th Street Sterling, CO 80751
23-1250	HS DC EAST EXPANSION PHSE 2	Hunt Electric Corporation (651-646-2911)	5350 S Valeria Way Greenwood Village CO	The second phase development at the 180,000 square-foot data center adds needed infrastructure capacity to the data center campus. Phase 2 improvements to the Phoenix data center include: Additional 25,000 SF of dedicated data center space. Three (3) private data center suites with capacity for up to 650 additional cabinets. Up to 6 MW's of additional critical power. Additional office and storage space. New two-bay covered loading dock supporting extended semi-truck deliveries	\$ 748,400.00	2/20/2023	100%	Paul Quinn	paulquinn@eaton.com
23-1255	HS PHASE 1.2 (WEST)	Adolfson & Peterson Construction (952-554-1561)	5350 S Valeria Way Greenwood Village CO	Earthwork	\$ 731,700.00	4/10/2023	100%	Paul King	paulking@a-p.com
23-1270	LHWD 2023 Waterline Replacements	Left Hand Water District (303-530-4200)	6800 Nimbus Rd Longmont CO 80503	This Work more specifically consists of the construction of 1) approximately 3,915 LF of 4" treated water pipeline along N. 63rd Street from Niwot Road to approximately 1,320 LF south of Monarch Road; 2) approximately 6,735 LF of 8" treated water pipeline along N. 65th Street from St. Vrain Road to approximately 1,300 LF north of Nelson Road; and approximately 5,500 LF of 16" treated water pipeline along East County Line Road (WCR 1) from Niwot Road south to SH 52. The construction of the waterline along N. 65th Street will include approximately 521 LF of horizontally directionally drilled (HDD) pipeline installation. The construction of the waterline along E. County Line Road will include approximately 590 LF of HDD pipeline installation and approximately 125 LF of bored steel casing beneath SH 52. Pipeline appurtenances include isolation valves, air and vacuum relief valve assemblies, fire hydrant assemblies, tie-ins to existing distribution pipelines, and the reconnection of existing water services. Work will include all site preparation, erosion and sedimentation control, traffic control, dewatering as required, pipeline construction, installation of all associated appurtenances, site and road restoration, revegetation	\$ 4,452,688.00	7/17/2023	100%	Martin Harders	mharders@lefthandwater.gov 720-405-7217
23-1278	Pinery Zone A to F Waterline	Denver Southeast Suburban Water & Sanitation District	Bayou Guich Road & Cherry Creek Trail Parker CO	Approx 930 LF of horizontal directionally drilled 16" fusible C-900 DR 14 PVC (entry to exit point), 300 LF of 16" C-900 DR 14 PVC water main, connections to existing water system, traffic control, pavement removal, pavement replacement, erosion control, and related site restoration work.	\$ 1,069,000.00	9/11/2023	100%	Richard Krulish, Municipality Rep	rkrulish@pinerywater.com
23-1284	North Plains Lift Station & Force	Ken-Caryl Ranch Water & Sanitation District	10698 Centennial Road, Littleton CO 80127	Installation of a new submersible pump lift station above a new 8-foot diameter wetwell. Installation of approximately 3,700 feet of 10-inch diameter force main pipeline. Installation of lift station site improvements including yard piping, paving and gra	\$ 2,480,000.00	8/28/2023	99%	David Vidikan, Engineer	david.vidikan@ae2s.com
23-1291	Bar-X Pipeline Segment A	Falcon Area Water & Wastewater Authority (FAWWA)	Goodson Road & Meridian Road Falcon, CO	Schedule A-Major Materials: all materials of approximately 10,113 LF 24" C900 DR14 PVC or DIP, approximately 10,610 LF 24" C900 DR18 PVC or DIP, fittings, mega lugs, valves, hydrant assembly, (1) MJ closure couplings for tie in, and material delivery. Schedule B-General Installation: all construction and installation of the materials listed in Schedule A, in addition to the materials and installation of Air-Vac Vaults, traffic control, testing & disinfection, erosion control & permitting, and project closeout.	\$ 1,368,000.00	12/4/2023	99%	Lexi Yoder RESPEC	lexi.yoder@respec.com 719-402-0005

2

REQUIRED CONTRACTOR SUBMITTAL FORM

SUBMITTAL CHECKLIST:

Bid Proposals shall be submitted in the order listed below with each section clearly identified. **Missing information or required documents may result in submission being deemed non-responsive.**

- ☐ Submit completed Bid Bond, Bid Proposal, Bid Schedule, Required Contractor Submittal, and any other attachments requested.
- ☐ Submit evidence of Minimum Requirements, number 1 under Special Terms and Conditions, on page 5
- ☐ Submit implementation timeline and warranties, if applicable.
- ☐ Attach Contractor's Licensing, if applicable.
- ☐ Insurance – Checking this box accepts that the insurance requirements listed by the City are acceptable.
- ☐ Variations: Checking this box indicates that the contractor has variations to this solicitation. Identify all variations and exceptions to this CSB on a separate sheet/s of paper. If variations are not stated in the contractor's Offer, it shall be agreed that the contractor's Offer fully complies with all conditions identified in this Solicitation. For each variation listed, reference the applicable section of the solicitation document, the page number, and the variance. Submittal of a vendor contract is considered excessive in variations and may be cause for determining that the Bid is non-responsive and ineligible for award.

REFERENCES:

Check here if Contractor's standard reference sheet is attached, otherwise, use the space below.

Name: Miller Pipeline (Previously K.R. Swerdfeger) Contact Person: Mike Manchego

Address: 421 East Industrial Blvd, Pueblo West, CO 81007

Telephone No: 719-547-0242 Email: mike.manchego@millerpipeline.com

Describe type of work/service performed or items supplied: Global Underground has been performing HDD work for KR Swerdfeger/Miller Pipelines Xcel energy contract for 14+ years. usually called to complete larger more technical bores.

Name: WCA Construction Contact Person: Aaron Chubbuck

Address: PO Box 17 Towaoc, CO 81334

Telephone No: 970-564-4527 Email: achubbuck@wcaconstruction.com

Describe type of work/service performed or items supplied: In the process of installing two miles of 36" HDPE pipe via HDD for the first phase of the Arkansas Valley Conduit in Pueblo Colorado. The first mile has been pulled back and the second mile is mid-installation.

Name: Castle Rock Water Contact Person: Matt Hayes

Address: 175 Kellogg Ct. Castle Rock, CO 80109

Telephone No: 303-210-1678 Email: MHayes@cr.gov

Describe type of work/service performed or items supplied: installing water mains, sewer mains and completing on-call emergency repairs via open cut, auger/tunnel boring and horizontal directional drilling. Projects also included

– pipe fusion, welding, installation of all appurtenances service line relocations, replacement of sewer laterals
V1- within roadways, site restoration, installation of fire hydrants, gate valves and vaults and much more.



Areas of Expertise

- Executive/Servant Leadership
- Value Creation
- Strategic Planning
- Customer Relations/Growth
- Budgeting & Planning
- Partnership
- Holding Company Relations
- Acquisition Integration

Years of Experience

- 23 Years in Utility Services and Construction Industry
- 13 Years in the HDD industry
- Joined Global Underground in 2023

Training/Experience

- Project Management Implementation
- Risk Management Strategy
- LEAN Six Sigma
- OSHA 10
- Gold Shovel Training
- 1st Aid / CPR Training

Other Job-Related Information

- Hazardous Waste Site Safety
- Regulatory and Permitting
- Compliance

Ben Moe

Project Manager

Profile

Mr. Moe has over 23 years of experience in the utility services and construction industry, including 13 years in the HDD industry. Mr. Moe consistently maintains a focus on safety and quality assurance for the benefit of both employees and stakeholders. Mr. Moe is a proven leader and a highly respected mentor and advisor within the industry.

Representative Experience

Global Underground Corporation

General Manager (2023 – Present)

- Briargate 16” Waterline – Colorado Springs, CO. Directional drill and install 2,100 lineal feet of 16” DR9 HDPE for a water line crossing under Kettle Creek. The soil conditions included Dawson Formation bedrock, fine to coarse sand, clay, claystone, and gravel.
- East Plum Creek – Castle Rock, CO – Directional drill and install of 1,200 lineal feet of 12” HDPE for a water line crossing under Plum Creek. Soil conditions consisted of lean to sandy clay and fine to coarse grain.
- COS Airport RAC Parking Lot – Colorado Springs, CO – Directional bore and install 2” & 4” HDPE sleeves totaling approximately 1,520 lineal feet.

SiteWise

President (2019-2022)

Ben laid the foundations for a successful HDD program with SiteWise and was able to facilitate increasing their drill rig fleet from three to fourteen over the course of time. He strengthened the company’s business by successful acquisition of contract and sub-contract awards. In doing so, he was instrumental in leading SiteWise through extreme growth and change in the natural gas and electric utility construction industry.

- 12” Steel Gas Main – Ft. Collins, CO – Directional bore and install 5,000 lineal feet of steel pipe, approximately 6 to 8 feet in depth, running along Shields Street. Soil conditions consisted of sand, sand-like cobble, medium cobble, clay, and dirt.
- Tunnel Road / Big Thompson River – Estes Park, CO – Directional bore and install 1600 lineal feet of 6” medium density PE pipe at a depth of approximately 12”. Soil conditions consisted of cobble and rock.
- West Main – Fort Collins, CO – Directional bore and install five lengths (1,000 LF ea) of 12” pipe at approximately 10’ in depth. Soil conditions consisted of sand, light cobble, and hard clay.

****Additional projects available upon request****



Areas of Expertise

- Install and Repair Utilities
- Quality Assurance
- Safety & Compliance
- Heavy Equipment Operations
- HDD (Multiple Platforms)

Years of Experience

- 16 years of experience in Construction
- Joined Global Underground in 2008

Education/Training

- Centennial High School, Pueblo, CO - 2004
- Confined Space Certified
- OSHA 30
- 1st Aid/CPR Certified
- HDD Drilling Certified
- Potholing Certified
- Demo Saw Certified
- GHS/HAZCOM
- Trench Shoring School

Other Job-Related Information

- Class A Commercial Driver License
- Competent Person Certified
- Gold Shovel Standard
- MSHA 24 hour
- Freeport-McMoRan Pipe Handling

Equipment

- HDD Drill Equipment

Mike Mendez

Foreman

Profile

Mr. Mendez has over 15 years of experience in the construction industry with 13 years specializing in horizontal directional drilling. He has extensive knowledge of directional drills, and experience in leadership ability which will make him an asset for this contract.

Representative Experience

Global Underground Corporation

Drill Operator (2008-Present)

Foreman (2015-Present)

- Voyager Bridge – Colorado Springs, CO – Directional bore and install two parallel-running DR9 DIPS HDPE waterlines, each measuring 20" in diameter. These lines comprised one high-pressure and one low-pressure line, spaced at a distance of 15' apart. Combined length of bore spanned 1,300 LF. Ground conditions consisted of clay with pocket of sandstone, interspersed throughout the terrain. Fused over 2,500' of pipe and completed four CRA's.
- Pinery Zone A to F Waterline – Parker, CO – Directional bore 935' and install one 16" FPVC water line crossing Cherry Creek Ditch, at a depth of 30-35' below the bottom of the creek. Ground was sand conditions and very soft.
- East Plum Creek OSWF Project – Castle Rock, CO - Bore 1200' of 12" HDPE waterline under East Plum Creek from the west side of creek to the east side of creek. Subsurface conditions were lean clay to sandy clay. Fine to coarse grained, soft to hard. Fusion of 12" DR9 DIPS HDPE Waterline.
- FMI Climax Arkansas Pipeline – Leadville, CO – Directional bore across Hwy 91. Slipline 8" HDPE 140' and 230' through an existing 10" and 21" carrier pipe. Grout the void between the casing and the carrier pipe, build bulk heads on the end of the pipe.
- 6" HP 2 Clay Creek to CR 19 Line – Lamar, CO – Directional Drill and install one 6" steel gas main 1,308 lineal feet crossing Smith Arroyo. The soil conditions included clay, sandstone and claystone.
- Noble Midstream – Lost Creek – Keensburg, CO – Directional drill and install one 24" HDPE water line 2,272 lineal feet crossing environmentally sensitive areas.
- Sustain/Repair Water Lines – Saber Construction – USAFA, CO – Multiple projects installing approximately 16,000 lineal feet of potable and non-potable waterlines with 12" HDPE by HDD. Projects included several crossings of roadways and waterways.
- City of Golden - 4th Ave 8" Water Rehabilitation - Golden CO. Pipe Burst through an existing 8" cast iron waterline and installed a new 8" Fusible PVC waterline. The length included 2 bursts totaling 700 linear feet. Global Underground completed the pipe fusion, pipe bursting operations, tie-ins, fire hydrant installation and restoration.

****Additional Projects Available Upon Request****



Areas of Expertise

- Utility Installation and Repair
- Heavy Equipment Operation
- Problem Solving
- Customer Relations

Years of Experience

- 20 Years of experience in Construction
- 9 years of experience in HDD
- Joined Global Underground in 2014

Education/Training

- Demo Saw Certified
- Rigging/Lifting/Signaling Trained
- Trenching and Excavation Trained
- 1st Aid/CPR Certified
- Confined Space Trained
- Safe Land Trained
- OSHA 30

Other Job-Related Information

- Class A Commercial Driver License
- Gold Shovel Standard

Equipment

- Ditch Witch Directional Drill
- American Auger Drill
- HRE
- Vermeer
- Digitrak Locator
- John Deere 310D, 410D
- CAT 426B
- Dozers
- Excavators

Caleb Figueroa

Operator

Profile

Mr. Figueroa has over 20 years of experience in the construction industry with 9 years specializing in directional drilling. He has extensive knowledge of directional drills which will make him an asset for this project. Mr. Figueroa was selected for this role due to his experience. His experience includes backhoes, dozers, excavators, and drills.

Representative Experience

Global Underground Corporation

Drill Operator (2014 – Present)

- Voyager Bridge – Colorado Springs, CO – Directional bore and install two parallel-running DR9 DIPS HDPE waterlines, each measuring 20" in diameter. These lines comprised one high-pressure and one low-pressure line, spaced at a distance of 15' apart. Combined length of bore spanned 1,300 LF. Ground conditions consisted of clay with pocket of sandstone, interspersed throughout the terrain. Fused over 2,500' of pipe and completed four CRA's.
- Pinery Zone A to F Waterline – Parker, CO - Directional bore 935' and install one 16" FPVC water line crossing Cherry Creek ditch, at a depth of 30-35' below the bottom of the creek. Ground was sand conditions and very soft.
- East Plum Creek OSWF – Castle Rock, CO - Bore 1200' of 12" HDPE waterline under East Plum Creek from the west side of creek to the east side of creek. Subsurface conditions were lean clay to sandy clay. Fine to coarse grained, soft to hard. Fusion of 12" DR9 DIPS HDPE Waterline
- Mirabelle District Service Project – Phase 3 – Highlands Ranch, CO - Centennial Water and Sanitation District. Directional drill and install of one 16" FPVC water line 2,233 lineal feet under wetland area reaching depths in excess of 100ft.
- Noble Midstream – Lost Creek – Keensburg, CO – Directional drill and install one 24" HDPE water line 2,272 lineal feet crossing environmentally sensitive areas.
- Sustain/Repair Water Lines – Saber Construction – USAFA, CO – Multiple projects installing approximately 16,000 lineal feet of potable and non-potable waterlines with 12" HDPE by HDD. Projects included several crossings of roadways and waterways.
- Link/SW Interconnect – Fountain Creek Bore – Fountain, CO Directional drill and install one 36" HDPE water line 931 lineal feet crossing Fountain Creek. The soil conditions included sand, gravel, weathered claystone, and claystone ground conditions.

****Additional Projects Available Upon Request****



JUSTIN MOORE

Professional Summary

Seasoned professional Project Manager and Senior Estimator with over 20+ years of experience in the heavy civil and construction industries. Exceptionally adept with leading crews in the field, managing teams for estimating and as a project manager controlling cost and schedule with projects worth up to \$20M. Superior knowledge of public and private markets with a proven track record.

Skill

- Program Management
- Communication and key contract negotiation
- Leadership and mentoring
- Problem solving
- Proficient in B2W, HCSS, Spectrum/ViewPoint, and MS Office
- Strong verbal communication
- Self-motivated
- Risk management processes and analysis

Work History

February 2023-Present

Project Manager | SMH West | Castle Rock, CO

Project Manager on three large construction projects with over \$11M combined budgets. This includes managing budget and project scope, along with scheduling crews and sub-contractors. Oversee construction management, quality control and safety management. Prepare cost to complete reports on a quarterly basis. Monthly prepare owner invoices and approve subcontractor bills. Work closely with engineers, owners and owners' representatives. As the Senior Estimator, I manage the estimating team and prepare all bids for submission. Work closely with the Contract Manager and Division Manager to assure all documentation is prepared and accurate prior to submitting. This includes preparing budget proposals, review and approve subcontractor & supplier quotes. Provide business development opportunities with vender/sub procurement, exploring databases for public and private projects to bid.

February 2021-2023

Project Manager/Estimator | Hei Civil

Successfully managed more than \$45M in company revenue. Lead member of the team that oversees construction management, scheduling, quality, safety. Responsible for managing





budgets for owner and company including monthly projections for WIP meetings. Worked closely with owners to negotiate contracts and change orders.

May 2011-February 2021

Chief Estimator | Iron Woman Construction

5 years as Chief Estimator leading a team of 6, review of all estimates for accuracy, VE, budget proposals, business development, advised on local municipalities and implemented an estimate department. Four years as Estimator/Project Manager, managed all estimates as the sole estimator, vender/sub procurement, exploring databases for public job opportunities. One year as Superintendent overseeing day-to-day operations for multiple jobs, public relations, scheduling and procuring necessary equipment and labor, scheduling delivery of material and subcontractors

April 2007 – May 2011

Field Superintendent | Belair Excavating

Two years as Field Superintendent, managing crews for the day-to-day operations, material and subcontractor management, oversee safety and quality. Two years as Foreman managing a crew, overall responsible for progress of building the job





ADAM FRADY

Professional Summary

Seventeen years of combined consulting, management and construction experience including earthwork, utilities, and civil construction. Provides comprehensive background in mechanical piping and heavy equipment projects.

Skills

Efficient in all phases of civil, pipeline and earthwork construction and management. Great client relation, and communication skills. Efficient in finishing projects within time frame and within budget. Read and interpret blueprints, grade stakes, submittals, specs etc. Familiar with obtaining permits, contract negotiation and execution, Procore, Excel, Bluebeam etc. Great organizing skills. Team player.

Experience

2023-Present SMH West | Castle Rock, CO

Construction Manager. Manage field operations. Manage all projects with day-to-day operations in the field. Make sure we are installing a quality product in an efficient and safe manner. Make sure client is happy with quality and schedule. Manage equipment, manpower, quality control and schedule with leading crews.

2020-2023 HEI Civil | Castle Rock, CO

General Superintendent role. I manage and oversee schedule, budget, manpower and direct all field operations. This includes but not limited to concrete, utilities, structures, and earthwork.

2019-2020 P.E.I Premier Earthworks and Infrastructure | Denver, CO

Superintendent for utilities, but also over seeing concrete and earthwork on multiple projects. Oversee budget, installation, and invoicing on all assigned projects. Work closely with estimating, project managers, clients/developers, city representatives, foremen and subcontractors to ensure an ideal product is delivered on time and within budget.

2018-2019 TB Contractors | Tucson, AZ

Project Manager for Pipeline, Mechanical and Mine crews. Estimate, execute and invoice all projects assigned.

2014-2017 Owner at Alpha Consulting | Williston, ND

Project consultant for Oasis Petroleum. Overseeing budget and quality control on multiple pipeline and mechanical projects.





2011-2014 Mountain Peak Builders | Williston, ND

Pipeline superintendent overseeing multiple pipelines and well pad construction. Managed costs and labor on multiple projects for Whiting Petroleum, Oxy Petroleum and Kinder Morgan.

2007-2011 Petty Construction | Grand Junction, CO

Directional Boring, heavy equipment operator and pipeline foreman

2003-2007 Roper Plumbing | Camp Verde, AZ

Commercial pipefitter.

Education

Camp Verde High School Diploma 2003

Mesa community college 2013- 2015 (construction management)

Certifications

- OSHA 30
- MSHA
- OSHA Trenching and excavation competent person
- Confined space
- PEC Safe land
- Red Cross CPR
- HDPE fusion certification including data logger
- Many more available upon request

Subdivision Projects

Banning Lewis | Richmond – Colorado Springs, CO

High Point | Taylor Morrison – Aurora, CO

Ceilo | Toll Brothers – Parker, CO

Terrian | KB homes – Castle Rock, CO

Buckley Yard | Doug Richer – Aurora, CO





Arbor Peak | AHFR – Aurora, CO

Beacon Point | AHFR – Aurora, CO

Horizon Uptown | Lendlease – Aurora, CO

Utilities, earthwork, concrete and paving.

Public Work

WISE Waterline | Meridian Water District- Lonetree, CO

Dual 18" C900 waterlines from wells to pump booster station, including bore under E470. 5,500 ft.

Westminster Lift Station | Westminster, CO

Force main and lift station including all infrastructure.

Rock River Waterline | Rock River Water Department – Rock River, WY

18 miles of 16" C900 from river intake to treatment plant to town.

York Street Waterline Improvement | Denver Water – Denver, CO

Rehab, R&R water mains and install 10" C900 in replace of older lines.

Trailhead Communities Off-Site | K2 Builders – Jefferson County, CO

Utility infrastructure, bring all utilities to the site, including watermain, sanitary and rehabbing the existing pond.

Victory Ridge | Garret – Colorado Springs, CO

Utilities on and off-site for large apartment complex.





DAN JONES

Professional Summary

Over twenty years of combined construction experience including earthwork, drainage, and utilities construction. Provides comprehensive background in project management, project engineer, field engineer, and foreman.

Technical Skills & Qualifications

- Strong safety and safe work practices
- Excellent Customer/Owner relationships
- Outstanding verbal and written technical and professional communication.
- Heavy Civil Construction in Design-Build, CM/GC, and Bid-Build project delivery methods.
- Proficient in management of overall operations of projects, project controls, contracts, budgets, schedules, and estimating as well as coordinating subcontractors, personnel, equipment, and daily reporting.
- Skilled in computer programs including: Bid2Win, B2W Track, Viewpoint V6, Enterprise, Primavera P6, Salesforce, FIS Heavy Job/Bid, On-Screen Takeoff, Pro-Log, Aconex, MS- Project, Word, Excel, and Bluebeam.

Experience

2021-Present SMH West | Castle Rock, CO

Comprehensive Project Management from award to closeout. Tracking project budget, weekly costs, and cost to complete forecasting. Develop and manage project schedule and 5-week forecast schedule. Facilitate communications with owner representatives, engineers, and stakeholders. Coordinate and oversee weekly meetings and formal owner correspondence, change orders, payment applications, RFI's and Submittals. Supervise all Superintendents, Foreman, Crews, and Subcontractors.

Projects

- Loretto Heights Infrastructure – (Bid-Build 8.6MM)
- Johnstown South Tank Water Distribution System – (Bid-Build \$9.1MM)
- Sterling Wastewater System Improvements – (Bid-Build \$8.1MM)

2019-2021 Area Wide Protective (AWP) | Greeley, CO

As the Estimating & Business Development Manager, developed strategic business planning for 2020 & 2021, along with business development and customer outreach. Developed and implemented the





standard operating procedures & integration of NCTC acquisition into AWP systems. Researched, tracked, and reviewed all bid letting and projects for Colorado. Built detailed estimates for traffic control for heavy civil, oil & gas, utility, and commercial & residential construction projects, as well as prime bid proposals for CDOT contracts and local entities. Reviewed all contracts and provided detailed project turnover information for operations.

2016-2019 Kraemer North America | Golden, CO

Project Manager/Project Engineer: managed subcontracts for earthwork, drainage, asphalt paving, fencing, and guardrail work scopes (\$65MM). Performed scheduling, RFI's, FDC's, estimating change orders, contract management, coordination, and project direction, along with execution of work scopes and contracts. Managed and updated 5-week construction schedule. Communicated & coordinated work scopes and issues with Owner Representatives. Reviewed MHT's, coordinated traffic control with TCS for traffic switches and closures.

Projects

- North I-25 Express Lanes Johnstown to Fort Collins – (Design Build \$260MM)
- North I-25 Express Lanes Johnstown to Fort Collins – (Design Build \$260MM)
- Little Thompson Bridge Replacement Project – (Bid-Build \$2.1MM)
- E470 Widening Parker to Quincy Avenue – (CMGC \$85MM)

2015-2016 Blackeagle Energy Services | Berthoud, CO

Project Manager for DCP Midstream, Noble Energy, Anadarko Petroleum – Oil and Gas Facility Projects (100k-800k). Performed comprehensive project management of all projects from start to finish. Attended pre-bid meetings and job walks. Created and compiled estimates and proposal packages, including coordination with budgets in cost tracking systems. Created and updated CPM project schedule. Facilitated weekly meetings and owner correspondence, managed RFI's and change orders, and submitted project closeout documentation. Supervised all Construction Managers, Superintendents, Foreman, and Crews on all projects. Subcontractor & vendor management including pay applications, invoice review and approval, schedules, RFI's, change orders, contract management, coordination, direction, and execution of performance of scope and contract.

Project

- DCP Midstream, Noble Energy, Anadarko Petroleum – Oil and Gas Facility Projects (100k-800k)

2012-2015 Granite Construction | Utah / Guam / Colorado

Project Engineer II

- US-36 Managed Lanes Project Phase I (Design-Build \$230MM) & Phase II (Design-Build \$109MM)
- JFY09 Mamizu J-001 Utilities and Site Improvements Phase I (Design-Build \$105MM)
- Rio Tinto/ Kennecott Utah Copper Mine- Cornerstone Project Flotation Expansion (\$45MM)





2011 American Civil Constructors | Littleton, CO

Field Engineer Intern

- CDOT I-70 West Vail Pass Improvements Project (8.9MM) & US 24 Bridge Replacement Project (4.6MM)

2002-2011 Previous Professional Experience

Foreman/Heavy Equipment Operator: Earthwork, Drainage, and Utilities.

Heavy Equipment Experience: Excavator, 8yrs; Front-end Loader, 8yrs; Backhoe, 10yrs; Skid-loader, 12yrs; Dozer, 2yrs; Forklift, 6yrs; Man-lift, 3yrs

Education

Bachelor of Science in Construction Management | Colorado State University, Fort Collins, CO

Certifications

- OSHA 10 Hour Certification
- OSHA Competent Person/ Trench Safety Training
- MSHA 40 Hour Part 46 Training Certification
- EM385 16 Hour Training Certification
- CDOT Transportation Erosion Control Supervisor Certification
- CCA Design & Operation of Work Zone Traffic Control Training
- CCA Bridge Girder Erection Training
- CPR/AED, First Aid Certification





REPORT TO CITY COUNCIL RESOLUTION

AGENDA ITEM
8.B.1.

TO: THE HONORABLE CITY COUNCIL

DATE: August 19, 2024

SUBJECT: R24-086, A Resolution Authorizing an Agreement for Subordination of Deed of Trust Between the City of Arvada, Vance Street Flats, LLLP, and the Colorado Housing and Finance Authority for the Vance Street Flats Project (Presenter: Carrie Espinosa, Housing Manager)

Report in Brief

Presenter: Carrie Espinosa, Housing Manager

Vance Street Flats is a 50-unit affordable housing development located at 5854 Vance Street, Arvada, CO. The City of Arvada loaned \$200,000 to the developer in August 2022 to support the project's financing. The developer is scheduled to close on its permanent loan in late August 2024, and the lender, the Colorado Housing and Finance Authority (CHFA), is requesting that the City of Arvada subordinate its loan on the property.

The Arvada team recommends that the City Council approve R24-086, A Resolution Authorizing an Agreement for Subordination of Deed of Trust Between the City of Arvada, Vance Street Flats LLLP and the Colorado Housing and Finance Authority.

Financial Impact

There is no financial impact related to this subordination agreement.

Background

On April 18, 2022, the Arvada City Council approved CB22-050, Ordinance 4797, An Ordinance Authorizing an Additional Appropriation for Fiscal Year 2022. This ordinance included a request for \$200,000 to be used as a loan for gap financing for the Vance Street Flats development. The City entered into a loan agreement with Vance Street Flats LLLP in August of 2022.

In August 2022, Vance Street Flats LLLP closed only a construction loan that had a two year term. The purpose of the loan was to fund the majority of the Vance Street Flats construction costs. Now that the construction of Vance Street Flats is complete, the developer is ready to close on its permanent loan with CHFA. The proceeds of this loan, combined with the tax credit equity proceeds, will pay off the construction loan. The permanent loan has a 30 year term.

The City loan of \$200,000 closed earlier than the CHFA loan meaning that its deed of trust has already been recorded and would be senior to the CHFA loan by virtue of recording order. A subordination allows for the rights of the permanent lender to supersede the city's rights. CHFA is requesting that the City subordinate its loan of \$200,000.

Discussion

Subordination of deed of trust is commonly requested by the lender with more funding in a project (\$3.4 million permanent loan compared to the \$200,000 city loan). CHFA and Vance Street Flats LLLP requested and received a similar subordination from the Colorado Division of Housing for its \$700,000 loan to support this project.

Public Contact

Posting of the City Council agenda.

SUBJECT: R24-086, A Resolution Authorizing an Agreement for Subordination of Deed of Trust Between the City of Arvada, Vance Street Flats, LLLP, and the Colorado Housing and Finance Authority for the Vance Street Flats Project (Presenter: Carrie Espinosa, Housing Manager)

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Commission Recommendation

N/A

Strategic Alignment

The subordination agreement for the Vance Street Flats development supports the City Council Strategic Result to improve access to quality housing that is affordable to a broad range of income levels and to provide resources, housing, and neighborhood assistance to Arvada residents, neighborhoods, property owners and stakeholders.

Alternative Courses of Action

N/A

Recommendation for Action

The Arvada team recommends that the City Council approve A Resolution Authorizing an Agreement for Subordination of Deed of Trust Between the City of Arvada, Vance Street Flats LLLP and the Colorado Housing and Finance Authority.

Suggested Motion:

I move that R24-086, A Resolution Authorizing a Subordination of Deed of Trust Agreement Between the City of Arvadfa, Vance Street Flats LLP, and the Colorado Housing and Finance Authority, be (approved) (rejected).

Prepared by:

Carrie Espinosa, Manager of Housing Preservation and Resources

Reviewed by:

Approved by:

Carrie Espinosa, Manager of Housing Preservation and Resources	7/30/2024
Jessica Garner, Director of Community and Economic Development	7/30/2024
Gail Walker, Legal Specialist-Contracts	8/2/2024
Emily Grogg, Senior Assistant City Attorney	8/2/2024
Linda Haley, Deputy City Manager	8/2/2024
Rachel Morris, City Attorney	8/6/2024
Linda Haley, Deputy City Manager	8/7/2024

Enclosure, exhibits & attachments required to support the report

RESOLUTION NO. R24-086

A RESOLUTION AUTHORIZING AN AGREEMENT FOR
SUBORDINATION OF DEED OF TRUST BETWEEN THE CITY
OF ARVADA, VANCE STREET FLATS, LLLP, AND THE
COLORADO HOUSING AND FINANCE AUTHORITY FOR THE
VANCE STREET FLATS PROJECT

WHEREAS, Vance Street Flats is a 50-unit affordable housing development located at 5854 Vance Street, Arvada, Colorado; and

WHEREAS, Arvada loaned \$200,000 to the developer in August of 2022 to support the project's financing; and

WHEREAS, the developer is scheduled to close on its permanent loan of \$3.4 million from the Colorado Housing and Finance Authority (CHFA) in late August; and

WHEREAS, CHFA requires that Arvada subordinate its loan on the property to move forward with the closing.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ARVADA, COLORADO:

Section 1. The Mayor or Mayor Pro Tem is authorized to sign and the City Clerk to attest, in form approved by the City Attorney, an Agreement that is in substantially the same form as that attached hereto.

Section 2. This resolution shall be effective upon its approval by the City Council.

APPROVED AND ADOPTED this 19th day of August 2024.

Lauren Simpson, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:
Rachel A. Morris, City Attorney

By: _____

After Recording Return To:
Colorado Housing and Finance Authority
1981 Blake Street
Denver, Colorado 80202-1272
Attn: Jocelyn Bailey, Paralegal

SUBORDINATION OF DEED OF TRUST

THIS SUBORDINATION OF DEED OF TRUST (the “**Agreement**”) is dated as of _____, 2024, by VANCE STREET FLATS LLLP a Colorado limited liability limited partnership (“**Borrower**”) and THE CITY OF ARVADA, COLORADO, a public body corporate and politic of the State of Colorado (the “**Subordinate Lender**”) and COLORADO HOUSING AND FINANCE AUTHORITY, a body corporate and political subdivision of the State of Colorado (the “**Senior Lender**”).

RECITALS:

A. Subordinate Lender made a loan to Borrower in the original principal amount of Two Hundred Thousand and No/100 Dollars (\$200,000.00) (the “**Subordinate Loan**”), in connection with the project commonly known as Vance Street Lofts with an address of 5854 Vance Street, Arvada, Colorado 80003, which is more particularly described on Exhibit A, attached hereto and made a part hereof by this reference (the “**Property**”). The Subordinate Loan is evidenced by that certain Promissory Note dated August 17, 2022, made by Borrower for the benefit of Subordinate Lender (the “**Subordinate Note**”). The Subordinate Note is secured by that certain Deed of Trust for the benefit of the Subordinate Lender dated August 17, 2022, recorded on August 18, 2022, under Reception No. 2022079267 (as modified, the “**Subordinate Deed of Trust**”), in the real estate records of the Clerk and Recorder of the County of Jefferson, Colorado (the “**Records**”). The Subordinate Note, Subordinate Deed of Trust and all other documents and agreements related to the Subordinate Loan are collectively referred to herein as the “**Subordinate Loan Documents**”.

B. Borrower has executed, or is about to execute, a Promissory Note payable to the Senior Lender (the “**Senior Note**”) in up to the original principal amount of Three Million Four Hundred Thousand and No/100 Dollars (\$3,400,000.00) (the “**Senior Loan**”). The Senior Note is secured by a Deed of Trust, Security Agreement, Financing Statement, Fixture Filing and Assignment of Rents and Leases, executed by Borrower and recorded in the Records on _____, 2024 at Reception No. _____ (the “**Senior Deed of Trust**”), which encumbers Borrower’s interest in the Property. The Senior Note, Senior Deed of Trust and that certain Regulatory Agreement dated _____, 2024 between Senior Lender and Borrower (the “**Senior Regulatory Agreement**”), and all other documents and agreements evidencing, securing and/or executed in connection with the Senior Loan are collectively referred to herein as the “**Senior Loan Documents**.”

C. In addition, Borrower has executed, or is about to execute, a Promissory Note payable to the Senior Lender (the “**CMF Note**”) in up to the original principal amount of Nine Hundred Fifty Thousand and No/100 Dollars (\$950,000.00) (the “**CMF Loan**”). The CMF Note is secured by a Deed of Trust, Security Agreement, Financing Statement, Fixture Filing, and

Assignment of Rents and Leases, executed by Borrower and recorded in the Records on _____, 2024 at Reception No. _____ (the “**CMF Deed of Trust**”), which encumbers the Borrower’s interest in the Property. The CMF Note, CMF Deed of Trust and that certain Regulatory Agreement dated _____, 2024 between Senior Lender and Borrower (the “**CMF Regulatory Agreement**”), and all other documents and agreements evidencing, securing and/or executed in connection with the Senior Loan are collectively referred to herein as the “**CMF Loan Documents**.”

D. The CMF Deed of Trust and the CMF Regulatory Agreement will be recorded in the Records.

E. The Senior Lender is willing to make the Senior Loan and the CMF Loan to Borrower provided the Subordinate Lender will specifically and unconditionally subordinate the lien or charge of the Subordinate Deed of Trust to the lien or charge of the Senior Deed of Trust, the Senior Regulatory Agreement, the CMF Deed of Trust and the CMF Regulatory Agreement.

F. It is to the mutual benefit of all parties to this Agreement that the Senior Lender make such loans to Borrower; and Subordinate Lender agrees that the Senior Deed of Trust, the Senior Regulatory Agreement, the CMF Deed of Trust and the CMF Regulatory Agreement, when recorded, will constitute a lien or charge upon the Property, which is unconditionally prior and superior to the lien or charge of the Subordinate Deed of Trust.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual benefits accruing to the parties hereto and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and in order to induce the Senior Lender to make the Senior Loan and the CMF Loan to Borrower, it is hereby declared, understood and agreed as follows:

1. **Subordination**. The Subordinate Lender hereby represents to Senior Lender that it is the current beneficiary of the Subordinate Deed of Trust and payee of the Subordinate Note, and the Subordinate Lender does hereby agree that the Subordinate Loan, Subordinate Deed of Trust and other Subordinate Loan Documents, and all of the Subordinate Lender’s rights thereunder, shall be in all respects subordinate, secondary, inferior and junior to the liens, terms, covenants, conditions, operations, and effects of the Senior Deed of Trust, the Senior Regulatory Agreement, the other Senior Loan Documents, the CMF Deed of Trust, the CMF Regulatory Agreement and the other CMF Loan Documents and all extensions, renewals or modifications thereof, all as executed and delivered by Borrower to the Senior Lender as security for the Senior Note and the CMF Note. Further, any and all indebtedness under the Subordinate Loan Documents is and will at all times continue to be subject and subordinate in right of payment to the prior payment in full of the Senior Loan and the CMF Loan.

2. **Subordinate Lender Acknowledgement**. For the purposes of this Agreement, the Subordinate Lender acknowledges and agrees that all disbursement of loan proceeds and other advances made by the Senior Lender pursuant to the Senior Loan Documents and the CMF Loan

Documents shall be conclusively presumed to have been disbursed in accordance therewith and for the purposes therein provided.

3. **Senior Loan Documents Superior.** No amendment of the documents evidencing or relating to the Subordinate Loan shall directly or indirectly modify the provisions of this Agreement in any manner which might terminate or impair the subordination of the Subordinate Loan to the liens, terms, covenants, conditions, operations, and effects of the Senior Loan Documents or the CMF Loan Documents. At any time and from time to time, without notice to Subordinate Lender, Senior Lender may take such actions with respect to the Senior Loan or the CMF Loan as Senior Lender, in its sole discretion, may deem appropriate, including, without limitation, terminating advances to Borrower, increasing the principal amount, extending the time of payment, increasing applicable interest rates, renewing, compromising or otherwise amending the terms of any documents affecting the Senior Loan or the CMF Loan and any Property securing the Senior Loan or the CMF Loan, and enforcing or failing to enforce any rights against Borrower or any other person. No such action or inaction shall impair or otherwise affect Senior Lender's rights hereunder.

4. **Subordinate Loan Default.** The Subordinate Lender hereby agrees that upon the occurrence of a default by the Borrower under the terms of any of the Subordinate Loan Documents, the Subordinate Lender shall provide written notice to the Senior Lender thereof within ten (10) days of such default. Subordinate Lender will not exercise of any remedies against the Borrower and/or the Property until sixty (60) days after Subordinate Lender has delivered to Senior Lender written notice that it intends to exercise its remedies, provided that during such 60-day period or such longer period as may be provided herein, Subordinate Lender will be entitled to seek specific performance to enforce covenants and agreements of Borrower relating to income, rent, or affordability restrictions contained in a covenant or regulatory agreement, subject to Senior Lender's right to cure a Subordinate Deed of Trust Default as set forth herein and/or the Subordinate Loan Documents. Subordinate Lender may not exercise any of its remedies, including any foreclosure action under the Subordinate Loan Documents, until the earlier of (i) the expiration of such 60-day period or such longer period as provided herein or in the Subordinate Loan Documents, or (ii) the delivery by Senior Lender to Subordinate Lender of Senior Lender's written consent to such remedial action by Subordinate Lender. Subordinate Lender's exercise of any of its remedies will be subject to the provisions of this Agreement. Subordinate Lender acknowledges that the provisions of this Section 4) are fair and reasonable under the circumstances, that Subordinate Lender has received a substantial benefit from Senior Lender having granted its consent to the Subordinate Deed of Trust, and that Senior Lender would not have granted such consent without the inclusion of these provisions in this Agreement.

5. **Senior Lender Right to Cure.** Subordinate Lender agrees that it will not, without first providing written notice to the Senior Lender and a reasonable opportunity for the Senior Lender to cure, as set forth in Section 4 above: (a) collect, enforce or receive payment upon, by setoff or in any other manner, all or any portion of the Subordinate Loan now or hereafter existing; (b) enforce or foreclose upon the Subordinate Deed of Trust or enforce or apply any other security now or hereafter existing for the Subordinate Loan; (c) commence, prosecute, or participate in any

administrative, legal or equitable action against Borrower with respect to the Subordinate Loan; (d) join in any petition for bankruptcy, assignment for the benefit of creditors or creditor's agreement involving the assets of Borrower, or incur any obligation to or receive any loans, advances or gifts from Borrower with respect to the Subordinate Loan. Notwithstanding the foregoing, Borrower may make payments under the Subordinate Loan to Subordinate Lender as long as all payments under the Senior Loan Documents and the CMF Loan Documents are current and not delinquent or in arrears, and only so long as at the time of such payment: (x) no default under the Senior Loan Documents or the CMF Loan Documents exists and no event exists which, with the lapse of time or the giving of notice or both, would be an event of default under the Senior Loan Documents or the CMF Loan Documents of which Subordinate Lender has received notice; and (y) such payment would not result in a violation of any of Borrower's financial covenants set forth in any of the Senior Loan Documents or the CMF Loan Documents.

6. **Senior Lender Rights.** The Senior Lender shall have no obligation to the Subordinate Lender with respect to the Property, the Senior Loan or the CMF Loan. The Senior Lender may in accordance with the Senior Deed of Trust or the CMF Deed of Trust (a) exercise collection rights, (b) take possession of, sell or dispose of, and otherwise deal with, the Property, (c) in the Senior Lender's name, the Subordinate Lender's name or in the Borrower's name, demand, sue for, collect or receive any money or property at any time payable or receivable on account of, the Property; (d) prosecute, settle and receive proceeds on any insurance claims relating to the Property, and (e) exercise and enforce any right or remedy available to the Senior Lender with respect to the Property, whether available before or after the occurrence of any default; all without notice to or consent by anyone except as specifically required by law. The Senior Lender may apply the proceeds of the Property in any order the Senior Lender deems appropriate in its sole discretion, except as required by law.

7. **Subordination After Reinstatement of Senior Loan or CMF Loan.** The subordination of the Subordinate Loan will continue if any payment under the Senior Loan Documents or the CMF Loan Documents (whether by or on behalf of Borrower, as proceeds of security or enforcement of any right of set-off or otherwise) is for any reason repaid or returned to Borrower or its insolvent estate, or avoided, set aside or required to be paid to Borrower, a trustee, receiver or other similar party under any bankruptcy, insolvency, receivership or similar law. In such event, any or all of the Senior Loan and/or the CMF Loan originally intended to be satisfied will be deemed to be reinstated and outstanding to the extent of any repayment, return, or other action, as if such payment on account of the Senior Loan or the CMF Loan had not been made.

8. **Subordinate Lender Representations.** All necessary action on the part of the Subordinate Lender, its officers, directors, partners, members and shareholders, as applicable, necessary for the authorization of this Agreement and the performance of all obligations of the Subordinate Lender hereunder has been taken. This Agreement constitutes the legal, valid and binding obligation of Subordinate Lender, enforceable against Subordinate Lender in accordance with its terms. The execution, delivery and performance of and compliance with this Agreement by Subordinate Lender will not (i) result in any material violation or default of any term of any of the Subordinate Lender's charter, formation or other organizational documents (such as Articles

or Certificate of Incorporation, bylaws, partnership agreement, operating agreement, etc.) or (ii) violate any material applicable law, rule or regulation. Subordinate Lender further represents and warrants that each of the following is true as of the date of this Agreement: (i) the Subordinate Loan Documents are now in full force and effect; (ii) the Subordinate Loan Documents have not been modified or amended; (iii) no Subordinate Deed of Trust Default has occurred; (iv) Subordinate Lender is the beneficiary of the Subordinate Loan Documents; and (v) none of the rights of Subordinate Lender under any of the Subordinate Loan Documents are subject to the rights of any third parties, by way of subrogation, indemnification or otherwise.

9. **Confirmation of Subordinate Loan Terms.** Within 10 days after request by Senior Lender, Subordinate Lender will furnish Senior Lender with a statement, duly acknowledged and certified setting forth the then-current amount and terms of the Subordinate Loan, confirming that there exists no default under the Subordinate Loan Documents (or describing any default that does exist), and certifying to such other information with respect to the Subordinate Loan as Senior Lender may request.

10. **Notice.** Any notice which any party hereto may desire or may be required to give to any other party under this Agreement shall be in writing, and shall be deemed to have been given (i) one (1) business day after being delivered to a nationally recognized overnight delivery service, (ii) on the day sent by telecopier or other facsimile transmission, answerback requested, or (iii) on the day delivered personally, in each case, to the parties at the addresses set forth as follows: if to Senior Lender, at the address identified in the Senior Deed of Trust and the CMF Deed of Trust; if to Subordinate Lender, at the address identified in the Subordinate Deed of Trust, if to Borrower, at the address identified in the Senior Deed of Trust and the CMF Deed of Trust.

11. **Further Assurances.** Subordinate Lender hereby agrees to execute such documents and/or take such further action as Senior Lender may at any time or times reasonably request in order to carry out the provisions and intent of this Agreement, including, without limitation, ratifications and confirmations of this Agreement from time to time hereafter, as and when requested by Senior Lender.

12. **Consent to Insert Information.** The Subordinate Lender hereby agrees that Senior Lender, or any person or entity acting upon the directions of the Senior Lender, is permitted to change this Agreement only for the sole and limited purpose of inserting information in this Agreement regarding the date and recording of the Senior Deed of Trust and the CMF Deed of Trust.

13. **Payment of Costs.** Borrower shall pay all costs and expenses, including without limitation, court costs and reasonable attorneys' fees, incurred by Senior Lender in enforcing performance of the obligations of Borrower or in exercising the rights and remedies of Senior Lender hereunder. All such costs and expenses shall be secured by this Agreement and by the Senior Loan Documents and the CMF Loan Documents. In the event of any court proceedings, court costs and attorneys' fees shall be set by the court and not by jury and shall be included in any judgment obtained by Senior Lender.

14. **Termination.** Upon payment in full of the principal, interest and all other indebtedness evidenced by the Senior Loan Documents and the CMF Loan Documents, this Agreement shall cease, terminate and be of no further effect; provided, however, that the affidavit, certificate, letter or statement of Senior Lender or any officer, agent or attorney of Senior Lender showing any part of the principal, interest or other indebtedness on the Senior Note and the CMF Note being unpaid shall constitute conclusive evidence of the validity, effectiveness, and continuing force of this Agreement and any person may, and is hereby authorized to, rely thereon.

15. **Severability.** If any provision of this Agreement shall be invalid or unenforceable to any extent, the remainder of this Agreement shall not be affected thereby and shall be enforced to the greatest extent permitted by law.

16. **Entire Agreement; Amendment.** This Agreement contains the entire agreement between and among the parties hereto with respect to the subordination of the Subordinate Deed of Trust and the other Subordinate Loan Documents as to the Senior Deed of Trust, the Senior Regulatory Agreement, the Senior Loan Documents, the CMF Deed of Trust, the CMF Regulatory Agreement and the CMF Loan Documents. Subordinate Lender is not relying on any representations by Senior Lender or Borrower in entering into this Agreement, and Subordinate Lender has kept and will continue to keep itself fully apprised of the financial and other condition of Borrower. This Agreement may be amended only by written instrument signed by Senior Lender and Subordinate Lender.

17. **Inurement; No Third-Party Beneficiaries.** This Agreement and each and every covenant, agreement and other provisions hereof shall be binding upon the parties hereto and their respective successors and assigns. This Agreement shall remain effective until terminated in writing by Senior Lender. This Agreement is solely for the benefit of Subordinate Lender and Senior Lender and not for the benefit of Borrower or any other party.

18. **Governing Law.** This Agreement is made and executed under and in all respects will be governed and construed by the laws of the State of Colorado.

19. **Remedies.** Each party to this Agreement acknowledges that if any party fails to comply with its obligations under this Agreement, the other parties will have all rights available at law and in equity, including the right to obtain specific performance of the obligations of such defaulting party and injunctive relief.

20. **Counterparts.** This Agreement may be executed in multiple counterparts, each of which shall be deemed an original and all of which, when taken together, shall be deemed one and the same instrument.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

SIGNATURE PAGES TO FOLLOW]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date and year first written.

SUBORDINATE LENDER:

THE CITY OF ARVADA, COLORADO, a public
body corporate and politic of the State of Colorado

By: _____

Name: _____

Title: _____

STATE OF COLORADO)
) ss.
_____ COUNTY)

The foregoing instrument was acknowledged before me on _____, 2024 by
_____ as _____ of The City of Arvada, Colorado, a public body corporate and
politic of the State of Colorado.

Witness my hand and official seal.

(S E A L)

Notary Public

My commission expires: _____

BORROWER:

VANCE STREET FLATS LLLP, a Colorado
limited liability limited partnership

By: Vance Street Flats GP LLC, a Colorado limited liability company, its General Partner

By: _____
Josh Russell, Manager

STATE OF COLORADO)
) ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this ____ day of _____, 2024, by Josh Russell, as Manager of Vance Street Flats GP LLC, a Colorado limited liability company, as General Partner of Vance Street Flats LLLP, a Colorado limited liability limited partnership.

Witness my hand and official seal.

My Commission expires: _____

[SEAL]

Notary Public

CHFA Loan No: 5006520
CHFA Loan No: 5006539

SENIOR LENDER:

COLORADO HOUSING AND FINANCE
AUTHORITY, a body corporate and political
subdivision of the State of Colorado

By: _____
Steve Johnson, Chief Operating Officer

STATE OF COLORADO)
) ss.
CITY AND COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this ____ day of _____, 2024, by Steve Johnson, Chief Operating Officer of Colorado Housing and Finance Authority, a body corporate and political subdivision of the State of Colorado.

Witness my hand and official seal.

(S E A L)

Notary Public

My commission expires:

EXHIBIT A

LEGAL DESCRIPTION

Lot 1, Vance Street Flats Minor Replat, County of Jefferson, State of Colorado.

Also known as (for informational purposes only): 5854 Vance Street, Arvada, Colorado 80003.



REPORT TO CITY COUNCIL RESOLUTION

AGENDA ITEM
8.B.2.

TO: THE HONORABLE CITY COUNCIL

DATE: August 19, 2024

SUBJECT: R24-087, A Resolution Authorizing an Intergovernmental Joint Agreement and HOME Consortium Agreement Between Jefferson County, Colorado, the City of Lakewood, Colorado and the City of Arvada, Colorado (Presenter: Carrie Espinosa, Housing Manager)

Report in Brief

Presenter: Carrie Espinosa

The HOME Investment Partnerships Program (HOME) provides formula grants to states and localities that communities use to fund a wide range of activities including building, buying, and/or rehabilitating affordable housing for rent or homeownership or providing direct rental assistance to low-income households. HOME funds are awarded annually as formula grants to participating jurisdictions (PJs). Jefferson County Human Services serves as the participating jurisdiction for the area and receives HOME funds to serve communities that have opted into the HOME Consortium. The City of Arvada is not a member of the Jefferson County HOME Consortium meaning that Jefferson County cannot use HOME funds to support affordable housing activities in Arvada. The City team is interested in joining the HOME Consortium to allow Jefferson County to use HOME funds to support affordable housing activities in Arvada.

The Arvada team recommends that the City Council approve R24-087, A Resolution Authorizing an Intergovernmental Joint Agreement and HOME Consortium Agreement Between Jefferson County, Colorado, the City of Lakewood, Colorado and the City of Arvada, Colorado.

Financial Impact

There is no financial impact related to this agenda item.

Background

The HOME Investment Partnerships Program (HOME) provides formula grants to states and localities that communities use - often in partnership with local nonprofit groups - to fund a wide range of activities including building, buying, and/or rehabilitating affordable housing for rent or homeownership or providing direct rental assistance to low-income people. HOME is the largest federal block grant to state and local governments designed exclusively to create affordable housing for low-income households. HOME funds are awarded annually as formula grants to participating jurisdictions (PJs). The program's flexibility allows states and local governments to use HOME funds for grants, direct loans, loan guarantees or other forms of credit enhancements, or rental assistance or security deposits.

The program reinforces several important values and principles of community development:

- Flexibility empowers people and communities to design and implement strategies tailored to their own needs and priorities.
- Emphasis on consolidated planning expands and strengthens partnerships among all levels of government and the private sector in the development of affordable housing.
- Technical assistance activities and set-aside for qualified community-based nonprofit housing groups builds the capacity of these partners.

- Requirement that participating jurisdictions match 25 cents of every dollar in program funds mobilizes community resources in support of affordable housing.

Jefferson County Human Services serves as the Participating Jurisdiction covering all of Jefferson County. Jefferson County is authorized to use HOME funds in municipalities that have opted into the Jefferson County HOME Consortium. The City of Arvada is not a member of the HOME Consortium meaning that Jefferson County cannot utilize this funding source to support affordable housing activities.

Discussion

As the Participating Jurisdiction, Jefferson County serves as the lead entity for the HOME program. Jefferson County would assume all administrative duties related to spending HOME funds in Arvada meaning this partnership would not place additional administrative responsibilities on the Housing team.

If Arvada does join the HOME Consortium, it is estimated to provide \$250,000 annually in HOME funding to be utilized in Arvada.

Public Contact

Posting of the City Council agenda.

Commission Recommendation

N/A

Strategic Alignment

This Intergovernmental Agreement supports the City Council Strategic Result to improve access to quality housing that is affordable to a broad range of income levels and to provide resources, housing, and neighborhood assistance to Arvada residents, neighborhoods, property owners, and stakeholders.

Alternative Courses of Action

The City could not join the Jefferson County HOME Consortium and compete for HOME funding from the Colorado Department of Local Affairs.

Recommendation for Action

The Arvada team recommends that the City Council approve R24-087, A Resolution Authorizing an Intergovernmental Joint Agreement and HOME Consortium Agreement Between Jefferson County, Colorado, the City of Lakewood, Colorado and the City of Arvada, Colorado.

Suggested Motion:

I move that R24-087, A Resolution Authorizing an Intergovernmental Joint Agreement and HOME Consortium Agreement Between Jefferson County, Colorado, the City of Lakewood, Colorado and the City of Arvada, Colorado, be (approved) (rejected).

Prepared by:

Carrie Espinosa, Manager of Housing Preservation and Resources

Reviewed by:

SUBJECT: R24-087, A Resolution Authorizing an Intergovernmental Joint Agreement and HOME Consortium Agreement Between Jefferson County, Colorado, the City of Lakewood, Colorado and the City of Arvada, Colorado (Presenter: Carrie Espinosa, Housing Manager)

PAGE: 3
ITEM: 8.B.2.

Approved by:

Carrie Espinosa, Manager of Housing Preservation and Resources	6/13/2024
Jessica Garner, Director of Community and Economic Development	6/13/2024
Gail Walker, Legal Specialist-Contracts	7/1/2024
Tammy Hedlund, Legal Specialist	7/18/2024
Gail Walker, Legal Specialist-Contracts	8/2/2024
Emily Grogg, Senior Assistant City Attorney	8/2/2024
Rachel Morris, City Attorney	8/6/2024
Linda Haley, Deputy City Manager	8/6/2024

Enclosure, exhibits & attachments required to support the report

RESOLUTION NO. R24-087

A RESOLUTION AUTHORIZING AN INTERGOVERNMENTAL
JOINT AGREEMENT AND HOME CONSORTIUM AGREEMENT
BETWEEN JEFFERSON COUNTY, COLORADO, THE CITY OF
LAKEWOOD, COLORADO, AND THE CITY OF ARVADA,
COLORADO

WHEREAS, in 1974 the U.S. Congress enacted the Housing and Community Development Act of 1974, as since amended (42 U.S.C. 5301 et seq.) (“HCDA”), permitting and providing for the participation of the United States government in a wide range of local housing and community development activities and programs under Title I of HCDA which activities and programs are administered by the U.S. Department of Housing and Urban Development (“HUD”); and the Home Investment Partnerships Program (“HOME”) was enacted under Title II (42 U.S.C. 12701-12839) of the Cranston-Gonzalez National Affordable Housing Act (“NAHA”) which activities and programs are administered by HUD; and

WHEREAS, the primary objective of Title I of HCDA is the development of viable urban communities, by providing decent housing and a suitable living environment and expanding economic opportunities, principally for persons of low and moderate income, and the primary objective of the HOME program is to expand the supply of decent, safe, sanitary and affordable housing for low and moderate income Americans; and

WHEREAS, in 2012, the Jefferson County qualified as an “urban county” and formed a HOME consortium (the “Jefferson County HOME Consortium” or the “Consortium”); and

WHEREAS, Arvada wishes to join the Jefferson County HOME Consortium beginning with its ensuing qualification period; and

WHEREAS, Arvada has determined that it will be beneficial and in the public interest to enter into this intergovernmental agreement regarding the conduct of the County’s HOME program.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ARVADA, COLORADO:

Section 1. The Mayor or Mayor Pro Tem is authorized to sign and the City Clerk to attest, in form approved by the City Attorney, an Agreement that is in substantially the same form as that attached hereto.

Section 2. This resolution shall be effective upon its approval by the City Council.

APPROVED AND ADOPTED this 19th day of August, 2024.

Lauren Simpson, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:
Rachel A. Morris, City Attorney

By: _____

**INTERGOVERNMENTAL JOINT COOPERATION AGREEMENT
AND HOME CONSORTIUM AGREEMENT
BETWEEN
JEFFERSON COUNTY, COLORADO,
THE CITY OF LAKEWOOD, COLORADO
AND
THE CITY OF ARVADA, COLORADO**

THIS AGREEMENT (the “Agreement”) is entered into by and between Jefferson County, Colorado, a body corporate and politic of the State of Colorado (the “County”), the City of Lakewood, a home rule municipal corporation located in Jefferson County, Colorado (“Lakewood”), and the City of Arvada, a home rule municipality located in Jefferson County, Colorado (“Arvada”), and is effective October 1, 2024. Lakewood and Arvada may be referred to herein individually as the “City” and collectively as the “Cities,” and the County, Lakewood and Arvada may be referred to herein individually as a “Party” and collectively as the “Parties.”

RECITALS

- A. In 1974 the U.S. Congress enacted the Housing and Community Development Act of 1974, as since amended (42 U.S.C. 5301 et seq.) (“HCDA”), permitting and providing for the participation of the United States government in a wide range of local housing and community development activities and programs under Title I of HCDA which activities and programs are administered by the U.S. Department of Housing and Urban Development (“HUD”); and the Home Investment Partnerships Program (“HOME”) was enacted under Title II (42 U.S.C. 12701-12839) of the Cranston-Gonzalez National Affordable Housing Act (“NAHA”) which activities and programs are administered by HUD;
- B. The primary objective of Title I of HCDA is the development of viable urban communities, by providing decent housing and a suitable living environment and expanding economic opportunities, principally for persons of low and moderate income, and the primary objective of the HOME program is to expand the supply of decent, safe, sanitary and affordable housing for low and moderate income Americans. These objectives are to be accomplished by the federal government providing financial assistance pursuant to HCDA and NAHA in the form of Community Development Block Grant (“CDBG”) funds and HOME funds to the state and local governments to be used in the conduct and administration of housing and community development activities and projects as contemplated by the primary objectives of the HOME program;
- C. To implement the policies, objectives and other provision of HCDA and NAHA, HUD has issued rules and regulations governing the conduct of HOME program, published in 24 Code of Federal Regulations (C.F.R.), Part 92 (the “Regulations”), which provide that a county that qualifies as an urban county may form a consortium with one or more geographically contiguous units of local government, as outlined in Section 92.101, and that a metropolitan city that qualifies for a separate entitlement grant may be included as a part of the HOME consortium by entering into a HOME consortium agreement with the urban county in accordance with the requirements of the Regulations;
- D. In 2012, the County qualified as an “urban county” and formed a HOME consortium (the “Jefferson County HOME Consortium” or the “Consortium”). Pursuant to an Intergovernmental Joint Cooperation Agreement and HOME Consortium Agreement between the County and Lakewood (the “Original Consortium Agreement”), which became effective on June 1, 2013, Lakewood elected to participate in the Jefferson County HOME Consortium. The City of Wheat Ridge, the City of Golden, the City of Edgewater, the Town of Lakeside and the Town of Morrison comprise the other members of the Jefferson County HOME Consortium through their participation in the Jefferson County urban county;
- E. Arvada wishes to join the Jefferson County HOME Consortium beginning with its ensuing qualification period;

- F. The County also desires to modify the Jefferson County HOME Consortium's qualification period to synchronize with the federal fiscal year and the County CDBG program's qualification period. To effectuate the foregoing, the initial term of this Agreement will be an abbreviated term beginning October 1, 2024, and ending September 30, 2026, after which any future renewals of the Agreement will be for a full three-year qualification period;
- G. Upon execution of this Agreement by all parties, an executed copy thereof will be included in the documentation for the Jefferson County HOME Consortium's ensuing qualification period and, if the County re-qualifies as a HOME consortium, the Cities will be included as a part of the Jefferson County HOME Consortium and be eligible to participate in the County's HOME program. As metropolitan cities, Lakewood and Arvada will continue to receive their respective annual entitlement CDBG funds from HUD;
- H. The County recognizes and understands that it does not have independent legal authority to conduct community development and housing assistance activities within the boundaries of the Cities and therefore, its ability to conduct the HOME program in the Cities is limited by the requirement that it must obtain permission from the Cities to perform activities therein, and accordingly, in order for the Cities to be considered a part of the Jefferson County HOME Consortium and be included in the County's annual request to HUD for HOME funds, it is required by the Regulations that the Cities and the County enter into a cooperation agreement whereby the Cities authorize the County to undertake or to assist in undertaking essential community development and housing assistance activities within the Cities as may be specified in the "Consolidated Plan" to be submitted to HUD annually by the County to receive its annual HOME entitlement grant;
- I. Under general provisions of Colorado law governing contracting between governmental entities and by virtue of specific authority granted in Part 2 of Article 1 of Title 29, C.R.S., any two or more political subdivisions of the state may enter into agreements with one another for joint cooperative action and any one or more political subdivisions may contract with another or with a legal or administrative entity created pursuant to that act to perform any governmental service, activity or undertaking which each political subdivision entering into the contract is authorized by law to perform, and
- J. Accordingly, the Parties have determined that it will be mutually beneficial and in the public interest of all Parties to enter into this intergovernmental agreement regarding the conduct of the County's HOME program.

THEREFORE, in consideration of the premises and cooperative actions contemplated hereunder, the Parties agree as follows:

1. The initial qualification period for the Jefferson County HOME Consortium under this Agreement is from Federal fiscal year 2025 to Federal fiscal year 2026. The initial term of this Agreement shall encompass this same time period, beginning October 1, 2024, and ending September 30, 2026. The initial term of this Agreement is intended to cover activities carried out with HOME consortium grant funds from federal fiscal year 2025 and 2026 appropriations and from any Program Income (as that term is defined in the Regulations) generated from the expenditures of those funds, and will remain in effect, at a minimum, until such funds are expended on eligible activities or returned to HUD.
2. Upon expiration of the initial term of this Agreement, this Agreement will be automatically renewed for the Jefferson County HOME Consortium's participation in successive qualification periods of three federal fiscal years each. No later than the date specified by HUD's consortia designation notice or HOME consortia web page, the County, as lead entity for the Consortium, shall (a) notify each Consortium member in writing of its right to decide not to participate in the Consortium for the next qualification period and (b) send a copy of each notification to the HUD Field Office.

If a member of the Jefferson County HOME Consortium decides not to participate in the Consortium for the next qualification period, the Consortium member shall notify the County, and the County shall notify the HUD Field Office, before the beginning of the new qualification period.

Before the beginning of each new qualification period, the County shall submit to the HUD Field Office a statement of whether or not any amendments have been made to this Agreement, a copy of each amendment to this Agreement, and, if the Consortium's membership has changed, the state certificate required under 24 C.F.R. § 92.101(a)(2)(i). The Consortium shall adopt any amendments to this Agreement that are necessary to meet HUD requirements for consortium agreements in successive qualification periods.

The automatic renewal of this Agreement will be void if the County fails to (a) notify a Consortium member as required under this automatic renewal provision, or (b) submit a copy of each amendment to this Agreement as required under this automatic renewal provision.

If the Jefferson County urban county fails to re-qualify as an urban county for the CDBG program during the qualification period included in this Agreement, the Agreement shall terminate following the last fiscal year for which the urban county qualified for the CDBG program.

At a minimum, this Agreement will remain in effect until the HOME funds received by the Consortium during each federal fiscal year of the Agreement's initial qualification period, and each successive qualification period for which the Agreement is renewed, are expended on eligible activities or returned to HUD.

3. By entering into this Agreement with the County, the Cities shall be included as a part of Jefferson County HOME Consortium for qualification and grant calculation purposes, upon the re-qualification by HUD of the Jefferson County HOME Consortium.
4. The County shall submit a fully executed copy of this Agreement, together with the authorizing resolutions of each Party, to HUD as part of its qualification documentation.
5. The Jefferson County HOME Consortium's program year shall begin on ~~October~~ June 1st each year and end on ~~May~~ September 31st of the following year.
6. The Cities agree to, and shall cooperate in, the preparation of detailed HOME program activities and projects to be conducted or performed in their respective jurisdiction during each qualification period covered by this Agreement, and these activities and projects will be included in the Consortium's Consolidated Plan and requests for funds for those periods. The Cities understand and agree, however, that the County shall have final responsibility for selecting the program activities and projects to be included in each annual grant request and project grant request and for filing the Consolidated Plan with HUD on an annual basis.
7. The Parties agree that the County will serve as the lead entity for the Jefferson County HOME Consortium. The County, as lead entity, is authorized to act in a representative capacity for all members of the Jefferson County HOME Consortium for the purposes of administering the HOME program. As the lead entity for the Consortium, the County agrees to assume overall responsibility for ensuring that the Jefferson County HOME Consortium's HOME program is carried out in compliance with all applicable requirements, including requirements concerning the Consortium's Consolidated Plan. Further, the County, as lead entity, will to the extent required by HUD, be the responsible entity under all HOME program fund grant agreements received from HUD, including for projects and activities conducted within the Cities' jurisdictions. Accordingly, the Cities agree that, as to all projects and activities performed or conducted in their jurisdictions under any HOME grant agreement, the County shall have the ultimate supervisory and administrative control and compliance responsibility. The County will accept project recommendations from all Jefferson County HOME Consortium members but reserves the right to make final funding decisions based upon the recommended projects.

8. The Parties agree to cooperate to undertake or to assist in undertaking housing assistance activities for the HOME program. The Cities shall cooperate fully with the County in all HOME program efforts planned and performed hereunder and allow and permit the County to undertake or assist in undertaking essential community development and housing assistance activities within the Cities' jurisdictions, as may be approved and authorized in the County's agreements, including the Consolidated Plan. The Parties also agree to cooperate to undertake, or assist in undertaking, community development housing assistance activities for the HOME program, as they may be planned and specified in the Consortium's Consolidated Plan submitted annually to HUD for the qualification periods specified herein and for such additional time as may be required for the expenditure HOME funds granted by the County for such activities.
9. The County will identify and review projects through the Consortium's online application portal. Projects will be selected based on funding availability, timing, compatibility with the goals identified in the Consortium's current Consolidated Plan, and other appropriate criteria. In the event that the Consortium has insufficient funding to support competing projects located within the boundaries of the Urban County, Lakewood and/or Arvada, the County agrees to select projects in reference to the Parties' respective HOME funding allocations identified by HUD's Consortia Builder Tool, available here: <https://www.hudexchange.info/resource/2450/home-consortia-builder-a-tool-to-estimate-funding>.
10. HOME program funds may be accessed by the Cities in two ways: (a) each City may approve a project or activity, carried out by a third entity, as appropriate for the needs of such City, and endorse the application; or (b) each City may originate a grant or loan request on its own behalf for an eligible project or activity. If a City applies for HOME funds itself, then the provisions in Paragraph 11 shall apply. For example, if a City opts to create an eligible homeowner rehabilitation program, such City would be subject to the same requirements as a subrecipient, including a written agreement. If a City approves or endorses a third-party application, then such City's continuing participation in the project or activity is not required.
11. Pursuant to 24 C.F.R. 92.504, if the Cities receive HOME program funds, the Cities shall be subject to the same requirements applicable to all subrecipients. The Cities understand and agree that, pursuant to Section 92.504 of the Regulations, the Cities will need to enter into separate written agreements or subgrants with the County with respect to the actual conduct of the projects and activities approved for performance by such City and that the funds designated in the Consortium's Consolidated Plan for those projects and activities will also be funded to such City under those separate project agreements or subgrants. Subject to the provisions of Paragraph 7 above, the Cities will administer and control the performance of the projects and activities specified in those separate project agreements and will be responsible for the expenditure of the funds allocated for each such project or activity and will conduct and perform the projects and activities in compliance with the Regulations and all other applicable federal laws and requirements relating to the HOME program.
12. All HOME program funds that are approved by HUD for expenditure under the County's grant agreements, including those that are identified for projects and activities in the Cities, will be budgeted and allocated to the specific projects and activities described and listed in the Consortium's Consolidated Plan and One Year Action Plan to the Consolidated Plan submitted annually to HUD, and those allocated funds shall be used and expended only for the projects or activities to which the funds are identified. No project or activity, nor the amount allocated therefore, may be changed, modified, substituted or eliminated by the Cities without the prior written approval of the County and the approval of HUD, if required by the Regulations.
13. During the term of this Agreement, each City shall:
 - (a) Inform the County of any income generated by the expenditure of HOME program funds received by such City;

- (b) Pay over to the County any Program Income received by such City, or retain and use that Program Income subject to, and in accordance with, the requirements and provisions of the applicable separate HOME project agreement;
 - (c) Use any Program Income such City is authorized by the County to retain only for eligible activities in accordance with all HOME program requirements as may then apply and the terms of all applicable project agreements;
 - (d) Keep appropriate records regarding the receipt of, use of, or disposition of all Program Income by such City and make reports therein to the County as will be required under the separate project agreements; and
 - (e) Pay over to the County any Program Income that may be on hand in the event of close-out or change in status of such City or that may be received subsequent to the close-out or change in status as provided for in the separate project agreement.
14. The separate project agreements or sub-grant agreements that will be entered into between the County and the Cities for the conduct of the HOME program shall include provisions setting forth the standards which shall apply to any real property acquired or improved by the Cities, in whole or in part, using HOME program funds. These standards will require the Cities to:
- (a) Notify the County in a timely manner of any modification or change in the use of that property from that which was planned at the time of acquisition or improvement and this notice requirement shall include any disposition of such property;
 - (b) Reimburse the County in an amount equal to the current fair market value of property acquired or improved with HOME funds (less any portion thereof attributable to expenditures of non-HOME funds) that is sold or transferred for a use which does not qualify under the Regulations; and
 - (c) Pay over to the County any Program Income that is generated from the disposition or transfer of property either prior to, or subsequent to, any close-out, change of status or termination of this Agreement.
15. The Cities understand and agree that they may not participate in a HOME consortium except the Jefferson County HOME Consortium, regardless of whether the Jefferson County HOME Consortium receives a HOME formula allocation. The Cities may, however, apply for State HOME funds. As metropolitan cities, the Cities may also continue to receive their respective annual entitlement CDBG funds from HUD.
16. The County shall, in accordance with the applicable requirements of 24 C.F.R. Part 92, collect an administrative fee for the performance of its duties administering the HOME program, pursuant to this Agreement. In no event shall the administrative fee exceed ten percent (10%) of the overall annual HOME allocation. The County can elect to enter into an annual agreement with a City if the County and City mutually agree that the City will perform administrative functions relating to the HOME program. In this occurrence the City would be subject to the same requirements as a subrecipient, including execution of a written agreement and adherence to all Regulations.
17. Each Party agrees that it will affirmatively further fair housing.
18. Pursuant to the provisions of 24 C.F.R. § 91.225, each Party affirms that it has adopted and is enforcing the following policies:
- (a) A policy prohibiting the use of excessive force by law enforcement agencies within its jurisdiction against any individuals engaged in nonviolent civil rights demonstrations; and

- (b) A policy enforcing applicable State and local laws against physically barring entrance to or exit from a facility or location which is the subject of such nonviolent civil rights demonstration within its jurisdiction.
19. The Cities authorize the County to amend this Agreement on behalf of the entire Consortium to add new members of the Consortium or for other reasons approved by HUD. With the exception of the foregoing, any changes and modifications to this Agreement shall be made in writing and shall be executed by all Parties and be approved by HUD, if necessary to comply with the Regulations.
20. The Parties agree not to veto or otherwise obstruct the implementation of the Consortium's approved Consolidated Plan during the applicable three-year qualification period and for such additional time as may be required for the expenditure of funds granted for that period.
21. The Parties agree to maintain a complete set of books and records that account for the HOME monies and the supervision and administration of the HOME program. The Parties agree that they will provide access to these books and records to each other and to HUD, as necessary or requested, to confirm compliance with Federal laws and regulations.
22. The Parties agree that no Consortium member may withdraw from nor be removed from inclusion in the Jefferson County HOME Consortium during any qualification period.
23. This Agreement and the rights and duties of the Parties shall be interpreted in accordance with the laws of the State of Colorado applicable to contracts made and to be performed entirely within the state.
24. The courts of the State of Colorado shall have sole and exclusive jurisdiction of any disputes or litigation arising hereunder.
25. Venue for any and all legal actions arising hereunder shall lie in the District Court in and for the County of Jefferson, State of Colorado.
26. No City or County employees, commissioners, city council members or other elected officials shall receive any share or part of this Agreement or any benefit that may arise therefrom.
27. The Cities hereby give the County the authority to carry out and administer HOME program activities and projects using Program Income paid over to the County from a City prior to such City joining the Jefferson County HOME Consortium. With respect to the rental housing project located at 500 South Reed Street, Lakewood, CO 80226 (the "Cityscape Project"), Lakewood grants the County the authority to continue providing oversight and monitoring as required by the Regulations and the applicable contracts between Lakewood and the County and the Lakewood Housing Authority d/b/a Metro West Housing Solutions ("MWHS"). The County will thereby be able to provide the monitoring and oversight for the overall Cityscape Project, which was funded by both Jefferson County HOME Consortium funds and Lakewood HOME funds. Lakewood shall remain responsible for the enforcement of its contract with MWHS and for preparation and filing of any required reports for Lakewood's portion of the HOME funding for the Cityscape Project. The County's monitoring of the Cityscape Project may include monitoring compliance with the occupancy requirements, HOME rent limits, inspections for construction progress and suitability for occupancy, and any other monitoring deemed necessary by the County.
28. Upon execution of this Agreement by all Parties, this Agreement shall supersede and replace the Original Consortium Agreement, which shall be deemed to have been terminated by mutual agreement of Lakewood and the County. Notwithstanding the foregoing, the terms and conditions of the Original Consortium Agreement shall remain in effect for funding received by the Consortium during the 2022-2024 qualification period.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly authorized and executed by each on the date specified as follows:

JEFFERSON COUNTY, COLORADO

By: _____
Lesley Dahlkemper, Chair
Board of County Commissioners

Approved as to form:

By _____
Jean R. Biondi
Assistant County Attorney

DRAFT

CITY OF LAKEWOOD, COLORADO

CITY OF LAKEWOOD

ATTEST:

Wendi Strom, Mayor

Jay Robb, City Clerk

Attestation Date

Approved as to form:

Lauren Stanek, Senior Assistant City Attorney

Recommended and approved as to content:

Travis Parker, Director of Planning

CITY OF ARVADA, COLORADO

By: _____
Lauren Simpson, Mayor

Approved as to form:

By _____

APPROVED AS TO FORM:

Rachel A. Morris, City Attorney

By: _____

City Attorney



REPORT TO CITY COUNCIL PUBLIC HEARING

AGENDA ITEM
10.A.

TO: THE HONORABLE CITY COUNCIL

DATE: August 19, 2024

SUBJECT: CB24-009, An Ordinance Repealing and Reenacting Chapter 50, Irrigation and Drainage, of the Arvada City Code (Ordinance No. 4875) (Presenter: Jacob Moyer, Stormwater Administrator)

Report in Brief

PRESENTER: Jacob Moyer, Stormwater Administrator

Updates to Chapter 50, Irrigation and Drainage, of Arvada's Municipal Code are proposed to comply with current federal and state environmental regulation. This will also include updates to the City's Stormwater Program that impacts Construction Site Disturbance Permits, updating the associated requirements and fees. The proposed program updates also allow the City to become a Qualifying Local Program with the Colorado Department of Health and Environment (CDPHE) that allows the City to control permit administration and oversight in lieu of CDPHE for all projects resulting in five acres or less of land disturbance.

The Arvada team recommends that the City Council approve CB24-009, An Ordinance Repealing and Reenacting Chapter 50, Irrigation and Drainage, of the Arvada City Code.

Financial Impact

No financial impact. The ordinance does not have a direct financial impact; however, a future proposed resolution to the Public Works Administrative Fee Schedule will include updates to the fees for Site Disturbance Permits that are allocated to the Stormwater Utility Enterprise fund.

Background

The City of Arvada holds a Municipal Separate Storm Sewer System (MS4) Phase II General Permit ("MS4 permit") with the Colorado Department of Health and Environment, Water Quality Control Division (Division). The MS4 permit was delegated to the Division by the Environmental Protection Agency (EPA) for the purpose of regulating requirements set forth in the Clean Water Act. Arvada is required to renew the MS4 permit on a five-year cycle; however, due to resource and staff shortages within the Division, this cycle has historically been delayed. The Division first issued an MS4 permit to the City in 2003. The City has twice renewed the MS4 permit, once in 2008 and once in 2016. Under the currently issued 2016 permit, the City is required to fulfill many regulatory requirements within six different program areas. Failure to meet the specific requirements of the MS4 Permit is subject to federal and state enforcement including fines, sanctions, and additional permit requirements.

Chapter 50, Irrigation and Drainage, of Arvada's municipal code has not been updated since 2007, including the associated permit fees. Internal and external audits of the program were conducted in 2019 by the Colorado Department of Health and Environment (CDPHE) and again in 2021 by an outside consultant. In response to these audit findings and municipal code update needs, the City staff examined and proposed revisions to Chapter 50 of the Arvada City Code, which pertains to drainage and stormwater quality. The proposed ordinance revisions close the gaps in language, address compliance with federal and state regulations, and modify and evolve Stormwater Program elements to better align with the City's strategic goals and resources.

Discussion

The primary revisions to Chapter 50 of the Arvada City Code include:

1. Changing Site Disturbance Permit threshold requirements from 10,000 sq. ft. to 0.5 acres.
2. Removing specific permit fees from Chapter 50 and adding the fees to the Public Works Administrative Fee Schedule, which will be presented under a separate resolution.
3. Providing clear references to enforcement provisions that apply to the entire chapter and not just specific sections of the chapter.
4. Introducing fees related to compliance procedures, remediation, and municipal liens for non-compliance with stormwater requirements.
5. Adding an administrative appeals procedure for determinations made by the director.
6. Adding of “Right-of-Entry” for municipal staff to inspect stormwater facilities when necessary.
7. Adding specific exemptions in accordance with the City’s MS4 Permit pertaining to unlawful discharges to comply with federal and state regulations.

The proposed ordinance revisions ensure that the City has the necessary clarification and enforcement measures to not only comply with state and federal environmental regulation, but also to ensure that both the Stormwater Program and the City are leaders in the State for stormwater regulation. The revised ordinance is straightforward, fair, and ensures the City’s MS4 remains protected from pollutants that could impact the environment or the health, safety, and welfare of the public. The revisions further align Chapter 50 with the City Council’s strategic goals of creating a comprehensive environmental regulatory compliance program.

By making these revisions, Arvada staff is also eligible to become a Qualifying Local Program (QLP) with CDPHE. This is considered a prestigious program related to Stormwater Construction Site Management/Oversight and would make Arvada the fourth jurisdiction to be a part of this program throughout the State (others include Lakewood, Golden and Durango). Becoming a QLP eliminates the need for persons (including the City) seeking to develop land and causing land disturbances to obtain a separate permit from the Division if the project is less than five acres. Eliminating this requirement allows the City to have more direct control over the permitting process for small construction projects, reduces possible permit delays by handling permits in-house, and streamlines the permit process related to stormwater construction. There are no foreseen drawbacks to this program as it would not introduce significant changes to workflow and resources for the City.

Approving this ordinance ensures compliance with the Division and the EPA and preserves enforcement options in the event of environmental contamination.

Public Contact

Public Postings of the proposed City Code and Stormwater Program updates include the following:

1. Posting of the City Council agenda.
2. Email correspondence to the list of developers, contractors and engineers on file within the Community and Economic Development Department.
3. Public office hours were held on July 18th and August 1st to discuss proposed updates.

Commission Recommendation

Strategic Alignment

These actions align with the 2024 City Council Strategic Plan Strategic Results and Services, including:

- Local Economy Strategic Goal 2: Strive to understand the unique needs of our business community and optimize City operations to improve the customer experience.
- Quality of Life Strategic Goal 4: Prioritize policies, practices, and projects for development that protect and sustain a high quality of life for residents and businesses.

- Infrastructure Work System Service 1: Provides the community with a safe, resilient, high-quality water supply, drainage system, waste-water disposal, and solid waste management services for full city build-out, as defined by the Comprehensive Plan. This includes maintaining utility rates at lowest practical levels with accurate billing that supports robust and reliable infrastructure.

Alternative Courses of Action

N/A

Recommendation for Action

The Arvada team recommends that the City Council approve An Ordinance Repealing and Reenacting Chapter 50, Irrigation and Drainage, of the Arvada City Code.

Suggested Motion:

I move that CB24-009, An Ordinance Repealing and Reenacting Chapter 50, Irrigation and Drainage, of the Arvada City Code, be (approved on final reading, numbered 4875 and ordered published by title only) (rejected).

Prepared by:
Chris Koch, CCO Admin

Reviewed by:

Approved by:

Jenny Wolfschlag, City Engineer	7/26/2024
Jacqueline Rhoades, Public Works Director	7/31/2024
Bryan Archer, Director of Finance	8/1/2024
Tammy Hedlund, Legal Specialist	8/2/2024
Laura Hemler, Assistant City Attorney	8/5/2024
Don Wick, Deputy City Manager	8/5/2024
Rachel Morris, City Attorney	8/6/2024
Linda Haley, Deputy City Manager	8/7/2024
Debra Nielson, Deputy Director of Finance	8/7/2024

Enclosure, exhibits & attachments required to support the report

COUNCIL BILL NO. 24-009
ORDINANCE NO. 4875

AN ORDINANCE REPEALING AND REENACTING CHAPTER 50, IRRIGATION AND
DRAINAGE, OF THE ARVADA CITY CODE

WHEREAS, the City of Arvada, Colorado, (“City”), is a home rule municipality, organized and existing under Article XX, Section 6 of the Colorado Constitution; and

WHEREAS, the City owns and operates a municipal separate storm sewer system (“MS4”) to promote the safe, efficient, and effective drainage of stormwater and other runoff or discharges;

WHEREAS, the City Council finds that the quality of runoff discharged into the MS4 must, to the maximum extent practicable, be protected from pollutants that could impact the environment or the health, safety, and welfare of the public; and

WHEREAS, the City protects such runoff by regulating land disturbance activities during construction that are likely to cause or increase soil erosion that would cause sediment and pollutants to flow into the City’s MS4, waterways, streams, rivers, ponds, and other similar areas; and

WHEREAS, such regulation occurs through the permitting, inspection, and enforcement requirements stated in Chapter 50 of the Arvada City Code; and

WHEREAS, significant portions of Chapter 50 relating to the regulations have not been updated since 2007; and

WHEREAS, other portions of Chapter 50 pertaining to ditches have not been updated since at least 1960; and

WHEREAS, the City’s requirements and processes related to the regulations have changed since these last updates; and

WHEREAS, such requirements and processes must be compliant with any permit issued to the City by the Colorado Department of Public Health and Environment, and

WHEREAS, the Arvada City Council now wishes to update Chapter 50 to conform with current City practices and any permit issued to the City by the Colorado Department of Public Health and Environment.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ARVADA, COLORADO:

Section 1. Chapter 50, Irrigation and Drainage, of the Arvada City Code is hereby repealed and reenacted to read as follows:

“DRAINAGE AND STORMWATER QUALITY

Article I. IRRIGATION AND DRAINAGE DITCHES

Sec. 50-1. Legislative intent and purpose.

The city has multiple irrigation and drainage ditches located within its limits. The City Council has determined that it is pertinent that all such irrigation and drainage ditches are kept, repaired, maintained, and operated in a safe manner in order to enhance the quality of water discharged into the city’s municipal separate storm system and reduce the risk of flooding.

Sec. 50-2. Scope.

This article applies to all canals and ditches located within the city.

Sec. 50-3. Definitions.

Ditch or canal means a man-made channel or trench or any part thereof within the city designed to manage surface water runoff or convey water for a specific purpose, such as for irrigation.

Owner means any corporation, company, or partnership, regardless of whether created by special act or organized under the general incorporation laws of Colorado, or any persons who own or control any canal or ditch.

User means a person, including a natural person, corporation, company, or other organization, that has the legal right to access and use water from any canal or ditch. A user may include an owner.

Sec. 50-4. Depositing waste; damming or clogging ditches.

It shall be unlawful for any person to deposit waste or debris of any kind or description or in any way dam, clog, or interfere with the water running in any canal or ditch or cause the same to overflow upon the streets, alleys, or public highways of the city.

Sec. 50-5. Owner responsibilities.

- (a) *Guards required.* If an owner's ditch pass through a flume or covered ditch having a cross-sectional area equal to or greater than 50 square inches and a length of 20 feet or more, the owner shall ensure that the flume or covered ditch area is guarded at the intake end by suitable bars of steel or wood, spaced not to exceed five inches from centers vertically or horizontally, or some other form of guard equivalent thereto in the opinion of the city's engineering division. It shall be unlawful for any owner to fail to have such guards in place.
- (b) *Clearing required.* All owners shall ensure that any canal or ditch, including any ditch rights-of-way within the city, are free from rubbish and weeds.
 - (1) It shall be unlawful for any owner to fail to keep any canal or ditch, including any ditch rights-of-way within the city, free from rubbish, weeds, and other materials at all times.
 - (2) It shall be unlawful for any owner to permit any waste or overflow water or any water from any canal, ditch, tail ditch, waste ditch, or any part thereof to flow in or upon any street, or alley in the city so as to damage the same in any way.
- (c) *Good condition required.* An owner shall ensure that all embankments or other parts of any canal or ditch are maintained in good repair and condition so that the waters within are not wasted and will not flood or damage the premises of others. Failure to do so shall be unlawful.
- (d) *Tail ditch required during repair or maintenance required.* During any repair or maintenance activities, the owner must make a tail ditch so as to return the water within the canal or ditch with as little waste as possible into the stream from which it was taken. Failure to do so shall be unlawful.

Sec. 50-6. User responsibilities.

- (a) *Overflow prohibited.* A user shall ensure that any use of a canal or ditch does not result in any waste or overflow water encroaching upon or overtaking any street, or alley in the city so as to damage the same in any way. It shall be unlawful for any user to permit any waster or overflow water or any water from any canal, ditch, tail ditch, waste ditch, or any part thereof to flow in or upon any street, or alley in the city so as to damage the same in any way.

- (b) *Repair and maintenance.* A user shall ensure that all embankments of any canal or ditch related to, or affected by their use are maintained in good repair and condition so that the waters within are not wasted and will not flood or damage the premises of others.
- (c) *Tail ditch required during repair or maintenance required.* During any repair or maintenance activities, the user must make a tail ditch so as to return the water within the canal or ditch with as little waste as possible into the stream from which it was taken. Failure to do so shall be unlawful.

Sec. 50-7. Penalty; continuing violation.

- (a) *Penalty.* A violation of this article shall be punished by a fine or imprisonment not to exceed the limits established in section 1-5 of this Code.
- (b) *Continuing violation.* In accordance with section 1-5 of this Code, every day any violation of this article continues or is permitted or allowed to continue shall constitute a separate offense.
- (c) *Concurrent remedies.* The initiation of a prosecution for a violation of this article shall not preclude any other remedies available to the city under this Code.

Sec. 50-8–50-20. Reserved.

Article II. DRAINAGE AND STORMWATER

DIVISION 1. PURPOSE AND DEFINITIONS

Sec. 50-21. Legislative intent and purpose.

The city owns and operates a municipal separate storm sewer system (“MS4”) to promote the safe, efficient, and effective drainage of stormwater and other runoff or discharges. To enhance the functions of the MS4, the City Council has determined that the quality of the runoff discharged into the MS4 must, to the maximum extent practicable, be protected from pollutants that could impact the environment or the health, safety, and welfare of the public. The city protects its MS4 by regulating land disturbance activities likely to cause or increase soil erosion, or that may contribute other pollutants to stormwater runoff during construction. These activities cause sediment and pollutants to flow into the MS4, waterways, streams, rivers, ponds, and other similar areas. Regulation of land disturbance activities during construction occurs through the

permitting, inspection, and enforcement requirements of this article. The purpose of this article is to establish the specific procedures and requirements necessary to promote such protection.

Sec. 50-22. Authority.

The authority to establish, implement, and enforce drainage and stormwater regulations is derived from the city's powers and authority as a home rule city under articles 15 and 35 of Title 31 of the Colorado Revised Statutes and from the Engineering Code of Standards and Specifications as adopted and amended by the city.

Sec. 50-23. Definitions.

The following words, terms, and phrases, when used in this article, shall have the following meanings, unless the context clearly indicates otherwise:

Applicant means a person applying for a site disturbance permit.

Best management practices, BMP, control measures, or erosion and sediment control measures mean the schedules of activities, prohibitions of practices, maintenance procedures, and other management practices used to prevent or reduce the pollution of the municipal separate storm sewer system. BMP also includes treatment requirements, operating procedures, and practices to control plant site runoff, spillage of leaks, sludge or waste disposal, and drainage from raw material storage.

CDPHE means the Colorado Department of Public Health and Environment.

City inspector means a person authorized by the director to inspect a site for the purpose of determining compliance with the provisions of this article.

City manager means the city manager or their designee.

Construction activities mean clearing, grading, excavation, and other ground disturbance activities. Construction activities do not include routine maintenance performed by public or private agencies or their agents to maintain original line grade, hydraulic capacity, the original purpose of a facility, or any agricultural activities.

Day means a calendar day unless otherwise specified.

Development means any activity, excavation or fill, alteration, subdivision, change in land use or practice, undertaken by private or public entities that affect the discharge of stormwater runoff.

Director means the director or public works or their designee.

Division means the Colorado Department of Public Health and Environment Water Quality Control Division.

Engineering Standards means the most recent edition of the Engineering Code of Standards and Specifications as amended and adopted by the City.

Erosion and sediment control plan or *ESC* means engineering construction drawings that show the proposed BMP on a site throughout the duration of a project.

Final drainage report means a design report that is approved by the city with construction drawings presenting the final stormwater infrastructure design calculations and details.

Final stabilization means a state when all land disturbance activity at a site has been completed and uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels or equivalent permanent, physical erosion reduction methods have been employed.

Illicit connection means any tie-in to the city's MS4 that is not related to stormwater or groundwater and is not authorized by the city. Examples of an illicit connection include but are not limited to:

- (1) a connection made in the past, regardless of whether the connection was permissible under law or practices applicable at the time the connection was made; and
- (2) a line connected to the MS4 that conveys sewage or allows sewage to be conveyed to the MS4.

Land disturbance activity means any activity that changes the volume or peak flow discharge rate of stormwater runoff from the land surface. This includes but is not limited to the grading, digging, cutting, scraping or excavating or soil, placement of fill materials, paving, construction, substantial removal of vegetation or any activity that bares soil or rock or involves the diversion or piping of any natural or man-made watercourse.

Landscape materials mean any material used in or derived from the landscape or improvements to the landscape of real property, including without limitation, trees, branches, shrubs, plants, vegetation, brush, yard trimmings, leaves, side, dead plant material, soil, dirt, sand, gravel, rock, stone, boulders, mulch, fencing, paving materials, or other similar materials.

MS4 permit means a water quality municipal MS4 permit issued to the city by the Colorado Department of Public Health and Environment (CDPHE).

Municipal separate storm sewer system or MS4 means a conveyance or system of conveyances owned by the city, that are designed or used for collecting or conveying any naturally occurring stormwater runoff whether such system is manmade or natural. This conveyance or system of conveyances includes but is not limited to:

- (a) pipes, culverts, flumes, ditches, storm sewers, cisterns, tanks, drains, lakes, ponds, streams, ravines, inlet/catch basins, man-made channels, gullies or other similar facilities, or natural features that contain, hold, transport, divert, channel, impound, or drain stormwater; and
- (b) streets, sidewalks, curbs, alleys, gutters, bridges, parking lots, and other surfaces within the city across which any naturally occurring stormwater runoff may seep, percolate, or flow.

Owner means the person identified as the record owner of the real property and their lessee or designee, if applicable.

Permittee means an owner and the owner's authorized agent who has obtained a site disturbance permit from the city.

Person means an individual, as well as a corporation, company, association, firm, partnership, society, or other organization.

Project means all of the development to be performed by an applicant as described in the proposed plan(s), including all phases of a proposed subdivision, or the development by an applicant of multiple lots or parcels that are contiguous, abutting, adjacent, adjoining, bordering, neighboring, or tangential to each other.

Public property means any street, right-of-way, road, highway, place, alley, sidewalk, easement, park, open space, square, median, parkway, boulevard, plaza, or other similar area within the city that is dedicated to public use or is owned or maintained by the city.

Receiving waters means a river, lake, stream, drainage ditch, or other watercourse.

Site means a parcel of land, or a contiguous combination thereof, where earth disturbing activity is performed.

Site plan means the planning document approved by the city that identifies improvements and other responsibilities associated with the development or redevelopment of parcel(s) of land.

State means the State of Colorado or any division thereof.

Stop work order means an order issued by the city requiring all construction activity on a site be stopped.

Stormwater means precipitation-induced surface runoff.

Stormwater construction permit means a permit issued by the Division to the permittee that regulates stormwater discharges from construction activities under the Colorado Discharge Permit System (CDPS) general permit for stormwater discharges associated with construction activities.

Stormwater drainage facilities mean constructed facilities or technology designed to reduce stormwater runoff volume, peak flow, and pollutants before discharging to receiving waters or the city's MS4.

Stormwater management plan (SWMP) means a narrative plan designed to minimize the accelerated erosion and sediment runoff at a site during construction activities.

Stormwater runoff means that part of snowfall, rainfall, or other precipitation that is not absorbed, transpired, evaporated, or left in surface depressions, and that then flows controlled or uncontrolled into a watercourse or body of water.

Temporary BMP means those temporary pollution control measures including, but not limited to, silt fences, wattles, vehicle tracking pads, inlet filters, diversions, sediment ponds and dewatering structures, to be installed and regularly maintained until the site is sufficiently stabilized.

Vegetative cover means grasses, shrubs, bushes, trees, ground cover, and other similar plants.

Watercourse means a natural or human-made channel, ditch, conveyance, or the standing body of water into which stormwater is discharged.

Sec. 50-24-50-34. Reserved.

DIVISION 2. DUTIES AND POWERS OF THE DIRECTOR

Sec. 50-35. Duties and powers of the director.

- (a) *General.* The director is authorized and directed to implement, administer, and enforce the provisions of this article. The director may:
 - (1) Implement, administer, and enforce any processes or requirements necessary for an applicant to obtain a site disturbance permit;

- (2) Determine when land disturbance activity may impact an environmentally sensitive or hazardous area or determine that a site disturbance permit should otherwise be required;
- (3) Waive any security requirement for a site disturbance permit when the director determines it is in the city's best interest to do so;
- (4) Require access to the property of applicants or permittees to ensure compliance with any requirements under this article;
- (5) Establish and collect fees for issuing site disturbance permits;
- (6) Render interpretations of this article and adopt policies and procedures in order to clarify the application of its provisions. These interpretations, policies, and procedures shall be in compliance with the intent and purpose of this article, and shall not have the effect of waiving requirements specifically provided for in this chapter;
- (7) Revoke any site disturbance permit due to noncompliance with any requirement in this chapter; and
- (8) Otherwise implement, administer, and enforce the provisions of this chapter.

Sec. 50-36. Director action authorized: compliance procedures.

- (a) *Notice and order.* The director may give notice to any person who is in violation of any requirement imposed by this article or has committed, or caused to be committed, any unlawful act under this article.
 - (1) Content of written notice and order. The notice and order shall set forth any order or orders stating the actions necessary to comply with the terms of a site disturbance permit, correct any failing BMP, control, contain, or stop a discharge or spill, remove an illicit connection, remediate damage caused by an unlawful discharge or illicit connection, or any other order or orders related to an unlawful act stated in this article. The notice shall allow the person a reasonable amount of time as determined by the director from the date of the notice and order to comply with each order listed in the notice and order. The notice and order shall also remind the person of their obligations under this article, and note that inspection fees, re-inspection fees, and other fees, charges, and penalties will be assessed for non-compliance. The director may order a person to take, permit, or

allow any action reasonably necessary to ensure compliance with this article.

- (b) *Violation notice.* In the event the person subject to the notice and order in subsection (a) does not comply with the order or orders within the time frame set forth in the notice and order, or within the period of any extension requested by the person subject to the violation and granted by the director, whichever date is applicable, the director shall send a notice of violation to the person subject to the notice and order. The violation notice shall contain notice that the city will be taking action necessary to remediate the violation and any related damage, and that all costs or fees associated with such action will be assessed against the property associated with the site.
- (c) *Mailing and posting of notices.* Each notice and order or violation notice issued under this section shall be sent by electronic mail and mailed to the person by first class U.S. Mail. In addition, a violation notice shall be posted on the property. Each notice must state any appeal available.
- (d) *Other actions authorized.* In addition to taking any action authorized under section 50-35 of this article following discovery of a violation or suspected violation, the director may issue a summons and complaint, revoke a site disturbance permit, withhold city inspections, decline to issue a building permit or a certificate of occupancy, or take any other enforcement action reasonably calculated to gain compliance with a permit or to protect the city's MS4. The director may coordinate with the director of the community and economic development to stop work on the site in a manner similar to the process described in subsection 10-1-2-2E1 of the Arvada Land Development Code (LDC) but made applicable to this article. A stop work order issued under this subsection shall remain in effect until such time the site returns to a reasonable compliance level as determined by the director. Once a violation is remedied, the director may lift a stop work order, reissue a revoked site disturbance permit, or take other similar action to allow work to continue in compliance with this article.
- (e) *Emergency action authorized.* Notwithstanding anything in this article to the contrary, the director may take any action necessary to correct or remediate a violation of this article or a suspected violation of this article that poses an acute risk to the health, safety, and welfare of the public. In these situations, the notice and order requirements of this section do not apply and the director may issue a notice of violation and require the owner or permittee to perform remediation once the acute risk has subsided.

- (f) *Recovery of expenses and fees.* The city may recover any expenses and fees associated with the enforcement and remediation activities described in this article. These expenses include but are not limited to costs of work necessary to ensure proper erosion and sediment control, sampling and monitoring expenses, the costs of any actual damage incurred by the city, and inspection and re-inspection fees.
 - (1) Upon an owner or permittee's failure to reimburse the city for such expenses and fees, the city may, in its sole discretion:
 - (i) Recover the expenses and fees through a lien in accordance with section 50-37 of this Code; or
 - (ii) Draw against any applicable cash escrow or letter of credit required under section 50-54. If the city draws against such cash escrow or letter of credit, the cash escrow or letter of credit must be restored to its full value before any construction activity may resume at the site. If the city revokes a site disturbance permit due to a violation of this article, and the city incurred fees and expenses related to the violation, the city must return the balance of the cash escrow or letter of credit to the permittee following deductions made for the city's incurred expenses and fees.

Sec. 50-37. Fees, charges, and expenses to be a lien upon property.

- (a) *Debt due and owing.* Unless paid within 30 days of assessment or request for reimbursement, all fees, rates, charges, penalties, or expenses incurred by the city under this article constitute a debt owing to the city, and the city has the right to recover on any such debt in the manner provided by law in any court of competent jurisdiction.
- (b) *Lien.* Unless paid within 30 days of assessment or request for reimbursement, all fees, rates, charges, penalties, or expenses incurred by the city under this article constitute a perpetual lien on and against the site, and any such lien may be foreclosed by the city at any time in the manner as provided by the laws of the state for the foreclosure of mechanics' liens or in accordance with chapter 59 of this Code entitled "Municipal Liens." Such lien foreclosure by the city is subject to all rights of redemptions granted by C.R.S. §38-39-101 *et seq.*, as amended.

Sec. 50-38. Appeals of a determination or order of the director.

- (a) *Filing; timeliness.* Except for an emergency action taken by the director under section 50-42 (e), a permittee or owner whose property is affected by a

determination of the director made under this article, who is subject to a notice or order of the director made under section 50-36, may appeal that determination or order on a form prescribed by the city and available from the director on the city's website or by hard copy. The appeal must be in writing and be submitted to the city clerk within 14 days of the date of the director's determination or order. An appeal form that is not complete in all respects or that does not state the grounds for appeal shall be promptly returned by the clerk to the customer. The customer may resubmit an appeal form deemed incomplete by the clerk, and the clerk shall accept it, if the resubmitted form is complete and submitted to the clerk within the deadline set forth in this subsection. Compliance with the 14-day time limit noted in this subsection (a) shall be a jurisdictional prerequisite to any appeal brought under this article. Failure to comply shall bar any such appeal.

- (b) *Grounds.* The appeal shall be based on a claim that:
 - (1) The provisions of this article do not apply; or
 - (2) The true intent of this article has been incorrectly interpreted by the director.
- (c) *Procedure.* The appeal form, and any other documentation submitted to the city clerk by the owner or permittee, as well as any response or documentation submitted by the director, will be submitted by the city clerk to the city manager for review. Notwithstanding any other provision of this Code, the appeal of the director's determination shall consist of a review of all relevant documentation on file with the city in the case, as well as the appeal form and any accompanying materials. All documents may be reviewed electronically. The city bears the burden of proof in an appeal to establish that the director's action or determination was reasonable in light of the intent of this article, that the terms of this article applied to the customer in question. The city manager shall review the information submitted, and within 14 days of the date of the filing of the appeal, issue a written decision on the appeal. The decision must contain the reason or reasons for the decision. The decision must set forth appeal rights, if any. The decision may be mailed by first class U.S. Mail or furnished to the customer electronically. Should the city manager fail to issue a written decision on the appeal within the time frame set forth herein, the claim shall be deemed denied, and the customer may proceed as if an adverse decision has been issued.
- (d) *Appeal of city manager's decision.* The city manager's decision, or denial of an appeal as a result of the manager's failure to issue a written decision, shall be considered a final agency decision. The appeal may proceed under Rule 106 of the Colorado Rules of Civil Procedure.

Sec. 50-39. Right of entry.

- (a) *Generally.* Where it is necessary to make an inspection or perform other work necessary to implement or administer this article, or where the director has reasonable cause to believe that there exists upon a structure or premises a condition or violation of this article that poses an immediate risk of harm to the city's MS4 or a serious threat to the health, safety, and welfare of the public, the director shall have the authority to enter the structure or premises at all reasonable times based upon the circumstances to inspect or to perform the duties imposed upon the director under this article. This right of entry exists to protect the environment by reducing or preventing pollutants from entering into the city's MS4 and to protect the health, safety, and welfare of the public.
- (b) *Occupied premises.* If the structure or premises is occupied, the director shall present credentials to the occupant and request entry, unless the city has an easement allowing entry, or unless the structure or the building is located on common property of an HOA or other similar entity. If, after presentation of the director's credentials, entry is refused, the director shall have recourse to every remedy provided by law to secure entry, including seeking a warrant for entry.
- (c) *Unoccupied premises.* If the structure or premises is unoccupied, the director shall first make a reasonable effort to contact the owner or other person having charge or control of the structure or premises and request entry, unless the city has an easement allowing entry or unless the structure or building is located on common property of an HOA or other similar entity. If entry is refused or unable to be obtained, the director shall have recourse to every remedy provided by law to secure entry, including seeking a warrant for entry.
- (d) *Warrant process.* If entry is refused or unable to be obtained, and if there is reasonable cause to believe there exists upon a structure or a premises a violation of this article, the director may apply to the municipal court for a warrant, if the violation involves a serious threat to the health, safety, and welfare of the public, and if the violation is not also a violation prohibited by state statute for which a search warrant could be issued by a district or county court. The warrant may authorize entry on the structure or premises to inspect for the presence of a discharge or spill, to test or sample a discharge or spill, inspect for a connection to the MS4, to determine compliance with, or lack of, a site disturbance permit, or to otherwise determine compliance with this article.

Sec. 50-40–50-50. Reserved.

DIVISION 3. SITE DISTURBANCE PERMIT REGULATIONS

Sec. 50-51. Land disturbance activity and permit required.

- (a) *Generally.* All land disturbance activity must comply with the city's Land Development Code, the Engineering Standards, this article, and any other applicable guidelines and standards adopted by the city. No land disturbance activity may exceed 60 acres on any one site unless authorized by the director.
- (b) *Permit required.* Except for the land disturbance activity described in section (c), a site disturbance permit is required for each site or subdivision filing prior to conducting any land disturbance activity that:
 - (1) Covers an area equal to or greater than 0.5 acres, including stockpiles, construction staging, employee parking, and building material storage areas;
 - (2) Covers an area less than 0.5 acres but is part of a larger planned development;
 - (3) Involves environmentally sensitive or hazardous areas, as determined by the director; or
 - (4) Involves a project for which the director deems a site disturbance permit to be necessary.
- (c) *When not required.*
 - (1) A site disturbance permit is not required for any land disturbance activity which is immediately necessary for the protection of life, property, or natural resources. However, the person responsible for the land disturbance activity is required to apply for a site disturbance permit within 14 days of commencing emergency activities if those activities meet the requirements of Sec. 50-51(b).

Sec. 50-52. Site disturbance permit authorized discharges.

- (a) The site disturbance permit authorizes the following discharges:
 - (1) Stormwater associated with construction activity.
 - (2) Stormwater associated with producing earthen materials, such as soils, sand, and gravel dedicated to providing material to a single contiguous site

or within one quarter mile of the construction site also covered by the site disturbance permit.

- (3) Stormwater associated with dedicated asphalt, concrete batch plants, and masonry mixing stations.
 - (4) Discharges from uncontaminated springs that do not originate from an area of land disturbance.
 - (5) Discharges to the ground of concrete or masonry washout water associated with the washing of concrete or masonry tools and concrete or masonry mixer chutes, and water used to wash vehicles, equipment, and external buildings. Discharges of concrete or masonry washout water must not leave the site as surface runoff or reach a watercourse as defined by the code. The addition of soaps, solvents, and detergents is prohibited.
 - (6) Discharges of landscape irrigation return flow.
 - (7) Discharges from diversions of waters of the state within the permitted site.
 - (8) Discharges resulting from emergency firefighting activities during the active emergency response.
- (b) All discharges from sites operating under a site development permit must consist only of the sources listed above, or must be covered under an additional or alternative permit.

Sec. 50-52. Site disturbance permit application requirements.

- (a) *Application requirements.* An applicant seeking a site disturbance permit shall submit a completed permit application, meet all of the requirements set forth in the application, provide any other documents required by the director to support the application, and satisfy any other requirements established by the director.
 - (1) All documents required by the director to be submitted in support of an application must satisfy any requirements established by the director.
- (b) *Application changes.* Prior to the issuance of a site disturbance permit, an applicant must update any new information on any permit application, including any changes to a document included in a permit application, within ten days of any change occurring.

Sec. 50-53. Site disturbance permit fee.

Before a permit is issued pursuant to this article, the applicant shall pay to the city a site disturbance permit fee in an amount set forth in the public works administrative fees and costs schedule.

Sec. 50-54. Cash escrow or letter of credit required.

- (a) *Cash escrow or letter of credit required.* No site disturbance permit shall be issued until such time as a cash escrow or letter of credit has been received and approved by the city. This cash escrow or letter of credit shall serve as security for the performance of work necessary to stabilize the site if the permittee fails to install or maintain the necessary BMP or to complete the work under the permit. The amount of the cash escrow or letter of credit shall include, at a minimum, the cost estimate for the proposed BMP associated with the project.
- (b) *Waiver of requirement.* Notwithstanding the requirements for providing security set forth in this section, the director may waive posting of a cash escrow or letter of credit if the applicant is a public or quasi-governmental entity, the applicant has already posted a cash escrow or letter of credit for the project subject to these requirements, or the waiver would be within the city's best interests.
- (c) *Drawing and replenishment.* The cash escrow or letter of credit shall remain at the amount specified herein through the final inspection for final stabilization. In the event the city draws against the security, the applicant in question shall replenish the security to the amount required within 30 days after notice by the city to do so.

Sec. 50-55. City responsibilities.

- (a) *Review and approval of permit applications.*
 - (1) The city will review each site disturbance permit application or revised application to determine the application's conformance with the provisions of this article, the Land Development Code, and the Engineering Standards. Upon the receipt and review of an application, the director may, in writing:
 - (i) Approve the permit application;
 - (ii) Approve the permit application subject to such reasonable conditions as may be necessary to substantially secure the

objectives of this article, and issue the permit subject to such conditions; or

- (iii) Disapprove the permit application, indicating the deficiencies. The applicant may submit a revised site disturbance permit application for review and approval, upon payment of a resubmittal fee as set forth in the public works administrative fees and costs schedule.

(b) *Closure of permit without violation of this article.*

- (1) The city may close a site disturbance permit when:
 - (i) Final stabilization has occurred at the opinion of the director;
 - (ii) The final site conditions are in accordance with all terms of the site disturbance permit; and
 - (iii) The condition of the site is approved by the director.
- (2) The city may also close a site disturbance permit when there has been no activity at the site for a period of more than 60 days when doing so is in the best interest of the city.
- (3) Nothing in this subsection (b) shall prohibit the city from revoking a site disturbance permit due to a violation of this article.

(c) *After final stabilization.* Following city final inspection, the permittee will confirm that final stabilization has been achieved by:

- (1) Removing all temporary BMP and completing any final landscaping; and
- (2) The city will confirm no other outstanding site disturbance permit requirements remain incomplete, close out the permit, and return any escrow amounts as appropriate.

Sec. 50-56. Site disturbance permit transfers; sale of individual lots.

- (a) *Transfers.* In the event an owner sells, conveys, assigns, dedicates, or otherwise effectuates a change in ownership of all or part of a site, subdivision filing, or lot that is subject to a site disturbance permit, the new owner of the site, subdivision filing, or lot, or their authorized representative must agree with and be subject to the terms and conditions of the site disturbance permit as approved and that are applicable to the portion of the site acquired by the new owner. Any term or condition contained in the original site disturbance permit that could apply to any

or all of the property sold, conveyed, assigned, dedicated, or otherwise transferred to the new owner will remain in effect as to the property that is conveyed.

- (1) Transfer of the site disturbance permit to a new owner as set forth herein will become effective upon payment by the new owner to the city of a site disturbance permit transfer fee. Should the new owner fail to pay the fee within 14 days of the transfer, the new owner must apply for a new site disturbance permit.
 - (2) The director may also require a new owner to complete a permit transfer form or any other process deemed necessary by the director to transfer the permit.
 - (3) Upon a transfer described in this subsection (a), the new owner must, within 14 days of the transfer, designate a new site disturbance permit contact person to the site, inform the city of the change of contact person, and take any other action deemed necessary by the director to facilitate the transfer of the permit.
- (b) *Sale of individual lots.* The permittee's obligations under this article for an individual lot end after the following conditions have been met:
- (1) The lot has been sold to a private homeowner for private residential use;
 - (2) A certificate of occupancy or equivalent is maintained on-site or electronically and is available for review upon request by the city or division;
 - (3) The lot is less than one half acre of land disturbance activity;
 - (4) All construction activity on the lot by the permittee is complete, including the installation of sediment and erosion control measures that minimize sediment from exiting the lot, or the installation of temporary stabilization on remaining disturbance where the permittee is not responsible for final stabilization (e.g. backyards);
 - (5) The permittee is not responsible for final stabilization of the remaining disturbed areas on the lot; and
 - (6) The SWMP is modified to indicate that the lot is no longer part of the construction activity.

The permittee's obligations for the rest of the development continue as established by this article.

Sec. 50-57. Site disturbance permittee – inspection responsibilities.

- (a) *Generally.* The permittee shall perform any action or inspection as requested by and in accordance with direction from the director. The permittee shall also allow representatives of the city to enter the permitted site as necessary to make regular inspections to ensure the validity of the reports filed pursuant to this article and the permittee's compliance with the permit's conditions and requirements. The director has the right of entry pursuant to section 50-39.
- (b) *Before construction.* Following the issuance of a site disturbance permit but before any land disturbance activity begins, the applicant shall install all initial BMP and schedule an initial inspection with the public works department. The purpose of the inspection is to ensure all BMP are adequate, installed correctly, and functioning properly.
- (c) *During construction.* The permittee must inspect all erosion and sediment control measures on the site on a regular basis but no less than every 14 days. The permittee must also inspect all erosion and sediment control measures on the site within 24 hours after the end of any precipitation, windstorm, or snowmelt event that causes surface erosion.
 - (1) Inspections shall include observations of the construction site perimeter, all disturbed areas, materials storage areas that are exposed to precipitation, discharge locations, and locations where vehicles access the site for evidence of, or potential for, pollutants entering the stormwater drainage system. The inspection shall also confirm that the site is in compliance with the BMP identified in the site disturbance permit, the erosion and sediment control plans, and/or SWMP shall be evaluated to ensure that they are operating correctly.
 - (2) All inspections shall be documented in written form and maintained with the onsite SWMP. The documented permittee inspections must contain, at a minimum, the name of the inspector, the date of the inspection, any concerns noted during the inspection, the date that each concern was addressed, and any revisions to the site disturbance permit as a result of the inspection. A copy of the inspection must be made available to the director upon request.
 - (3) Should revisions to the control measures be implemented as a result of deficiencies noted during site inspections, those revisions must be approved by the director and recorded within three business days on the approved supporting documentation for the site disturbance permit.

- (d) *Final inspections.* The permittee, in coordination with the city, must conduct all final inspections for all erosion and sediment control measures on the site and document the findings of such inspections in accordance with requirements established by the director.

Sec. 50-58. Site disturbance permittee – other responsibilities while permit is open.

- (a) *Generally.* Once land disturbance activities begin, the permittee must follow all permit conditions and requirements established by the city until such time as the site has reached final stabilization in accordance with section 50-56(b).
- (b) *Before and during construction.* Before and during construction, the permittee shall be responsible for ensuring that:
 - (1) Any installed temporary BMP are properly maintained and are in good working order up to and until the site has reached final stabilization;
 - (2) The site is fully developed and final stabilization is achieved;
 - (3) Any deficiencies noted by the director prior to the expiration of the warranty period for any public improvements in the project have been corrected;
 - (4) Stormwater drainage facilities are constructed and installed in accordance with the approved SWMP, Site Plan, construction plans, and final drainage report;
 - (5) All temporary BMP are removed within 14 calendar days after final stabilization has been achieved and the temporary measures are no longer needed as determined by the director; and
 - (6) The city is notified that construction has been completed and that the permittee cooperates with the city's final inspection to confirm whether final stabilization has been achieved.

Sec. 50-59. Site disturbance permittee – maintenance responsibilities after permit is closed.

- (a) Following the closure of a site disturbance permit pursuant to section 50-56, the owner is responsible for maintaining all stormwater drainage facilities shown on the approved site plan, construction plans, and final drainage report.
- (b) Notwithstanding any other provision in this article to the contrary, an owner must allow a regular inspection of stormwater drainage facilities by the City or a representative thereof on any lot or property that is or was subject to a site plan, construction plans, and final drainage report.

Sec. 50-60–50-71. Reserved.

DIVISION 4. UNLAWFUL ACTS

Sec. 50-72. Unlawful discharge.

- (a) *Unlawful discharges.* It shall be unlawful for any person to discharge or cause to be discharged or spilled any substance other than naturally occurring stormwater runoff, including naturally occurring stormwater runoff containing incidental pollutants, into the city's MS4.

Exceptions: The following discharges or spills shall not be considered an illegal discharge if the discharge or spill originates from:

- (1) Uncontaminated pumped groundwater that has not come into contact with construction activity;
- (2) Landscape irrigation, lawn watering, or irrigation return flows;
- (3) Diverted stream flows, natural springs, or flows from naturally existing riparian habitats and wetlands;
- (4) Rising groundwater;
- (5) Uncontaminated groundwater infiltration;
- (6) Uncontaminated water from crawl space pumps, foundation drains, or footing drains;
- (7) Air conditioning condensation;
- (8) Individual or residential car washing;
- (9) Water incidental to street sweeping (including associated sidewalks and medians) not associated with construction;
- (10) Emergency firefighting activity;
- (11) Dye testing approved by the director prior to the discharge in which the person engaging in the discharge must provide sufficient analysis of the environmental impacts of the product(s) used for the dye;
- (12) Agricultural stormwater runoff;

- (13) Discharges authorized by a Colorado Discharge Permit System or National Permit Discharge Elimination System permit; or
 - (14) Discharges that are made in accordance with the Division's Low Risk Discharge Guidance documents relating to various types of discharges and water line flushing, including but not limited to discharges of potable water and pools, as well as other Division policies and guidance documents where the Division has stated that it will not pursue permit coverage or enforcement for a specified point source discharge.
- (b) Nothing contained herein shall be construed to relieve any person discharging, causing to be discharged, allowing to be discharged, spilling, or causing to be spilled, water or any authorized discharge into the MS4 from any liability for damage caused by the volume or poor quality of the water or authorized discharge.
 - (c) Any person notified of an actual or threatened unlawful discharge shall immediately take actions to stop the unlawful discharge or spill or take any action necessary to prevent the threatened unlawful discharge or spill from occurring.

Sec. 50-73. Failure to comply; conducting operations without permit.

- (a) No person shall construct, enlarge, alter, repair, or maintain any grading, excavation, or fill, or cause the same to be done, without a site disturbance permit or contrary to or in violation of any terms of this chapter or any conditions or requirements for an approved site disturbance permit.

Sec. 50-74. Other unlawful acts.

- (a) *False statements.* It shall be unlawful for any person to make any false statement, representations or certifications in any application, record, report, plan, or other documentation filed, or required to be maintained, pursuant to this article, land disturbance permit, or order issued by the director in accordance with this article.
- (b) *Failure to maintain.* It shall be unlawful for a permittee to fail to maintain any and all temporary BMP and stormwater drainage facilities provided for in the SWMP both during and after completion of the development, redevelopment, or construction associated with the SWMP.
- (c) *Failure to keep plans on site.* It shall be unlawful for a permittee to fail to keep a copy of the ESC or SWMP, as required, at the site at all times until the site disturbance permit is closed.

- (d) *Failure to inspect.* It shall be unlawful for any permittee to fail to perform any inspection required by this article or by any State permit.
- (e) *Refusal to allow inspection.* It shall be unlawful for any person to refuse to allow an inspection required under this article.
- (f) *Refusal to allow entry.* It shall be unlawful for any person who owns or occupies property upon which a discharge or spill has occurred or originated from, or which contains a connection to the MS4, to refuse to allow the director to survey or inspect the property in accordance with the provisions of this article.
- (g) *Failure to obey.* It shall be unlawful for any person to fail to obey an order, rule, or regulation issued by the director under this article. For purposes of this subsection (i), “fail to obey” includes but is not limited to a person’s failure to comply with a directive issued under section 50-36, failure to remove a connection to the MS4, failure to take action to control or stop an unlawful discharge, or failure to remediate damage caused by an unlawful discharge or illicit connection.
- (h) *Illicit connections.* It shall be unlawful for any person to construct, use, maintain, or permit the continued existence of any illicit connection to the MS4.
- (i) *Unlawful substances.* It shall be unlawful for any person to introduce any substance into the MS4 that may cause personal injury or damage to public or private property.
- (j) *Unlawful storage.* It shall be unlawful for any person to place, store, maintain, allow to accumulate or permit any other person to place, store, maintain, or allow to accumulate on any public property or right-of-way any stockpile, pile, storage, accumulation of construction materials or landscape materials, or any roll-off dumpster, unless such person is an employee, official or contractor of the city acting within the scope of their municipal functions.
- (k) *Unlawful blocking.* It shall be unlawful for any owner to fail to keep and maintain any watercourse within their property free from trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse.
- (l) *Unlawful hazard.* It shall be unlawful for any owner of private property to allow a privately-owned structure within or adjacent to a watercourse to interfere with or become a hazard to the use, function, or physical integrity of such watercourse or any part thereof. In addition, the owner shall maintain each privately owned structure within or adjacent to a watercourse so that the structure does not

interfere with or become a hazard to the use, function, or physical integrity of such watercourse or any part thereof.

Sec. 50-75. Criminal penalty; continuing violation.

- (a) *Penalty.* A violation of this article shall be punished by a fine or imprisonment not to exceed the limits established in section 1-5 of this Code.
- (b) *Continuing violation.* In accordance with section 1-5 of this Code, every day any violation of this article continues or is permitted or allowed to continue shall constitute a separate offense.
- (c) *Concurrent remedies.* The initiation of a prosecution for a violation of this article shall not preclude the director from instituting other appropriate action to restrain, correct, or abate a violation or to stop an illegal act or unlawful discharge, conduct, or the utilization of an illicit connection on or about any property. The initiation of a prosecution for a violation of this article shall also not preclude the director from taking any actions under section 50-36.

Sec. 50-76. Conflicts.

If a dispute or conflict arises between a provision of this article and the provisions of any technical code, specification, rule, or regulation adopted by the city, the director shall determine the prevailing interpretation of this article in light of the technical code, specification, rule or regulation based on the relevant circumstances.

Sec. 50-77–50-90. Reserved.”

Section 8. Savings. This repeal will not affect or prevent the prosecution or punishment of any person for any act done or committed prior to the effective date of this ordinance and that is in violation of a section repealed by this ordinance.

Section 9. Severability. Should any provision of this ordinance be declared by a court to be unconstitutional or invalid, such decision shall not affect the validity of the ordinance as a whole, or any part thereof, other than the part so declared unconstitutional or invalid. The city council declares it would have adopted this ordinance and each part or parts thereof irrespective of the fact that any one part or parts be declared unconstitutional or invalid.

Section 10. Effective Dates.

(a) All sections of this ordinance, except for Division 3 – Site Disturbance Permit Regulations of Article II – Drainage and Stormwater, shall be effective five days after publication following final passage.

(b) Division 3 – Site Disturbance Permit Regulations of Article II – Drainage and Stormwater, shall be effective on January 1, 2025.

INTRODUCED, READ, AND ORDERED PUBLISHED this 15th day of July, 2024.

PASSED, ADOPTED AND APPROVED this 19th day of August, 2024.

Lauren Simpson, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:
Rachel A. Morris, City Attorney:

BY: _____

Publication Dates: July 18, 2024
 August 22, 2024

~~REDLINE/STRIKEOVER VERSION~~

FOR INFORMATION ONLY -- NOT PART OF THE ORDINANCE

Underlined indicates new material

~~Strikethrough~~ indicates deleted material

**~~“Chapter 50 Irrigation and Drainage”¹~~
~~“DRAINAGE AND STORMWATER QUALITY~~**

~~Article I. IN GENERAL~~ IRRIGATION AND DRAINAGE DITCHES

Sec. 50-1. ~~Irrigation~~ Legislative intent and ~~drainage ditches~~. purpose.

~~All~~The city has multiple irrigation and drainage ditches ~~shall be~~ located within its limits. The City Council has determined that it is pertinent that all such irrigation and drainage ditches are kept ~~free of rubbish, weeds, repaired, maintained, and other materials,~~ operated in a safe manner in order to enhance the quality of water discharged into the city’s municipal separate storm system and reduce the ~~failure~~ risk of flooding.

Sec. 50-2. Scope.

This article applies to all canals and ditches located within the city.

Sec. 50-3. Definitions.

Ditch or canal means a man-made channel or trench or any part thereof within the city designed to manage surface water runoff or convey water for a specific purpose, such as for irrigation.

Owner means any corporation, company, or partnership, regardless of whether created by special act or organized under the general incorporation laws of Colorado, or any persons who own or control any canal or ditch.

User means a ~~person who is the owner of such ditch or~~, including a natural person, corporation, company, or other organization, that has the legal right ~~of way to adequately maintain and clear such premises shall constitute a nuisance to access and shall be subject to abatement and other penalties provided for in this chapter~~ use water from any canal or ditch. A user may include an owner.

¹ ~~Cross reference(s) — Environment, ch. 38; utilities, ch. 102; stormwater drainage and erosion control, pt. III, § 6.12 et seq.~~[¶]

[¶] ~~State law reference(s) — Irrigation and drainage, C.R.S. title 37.~~[¶]

Sec. 50-~~¶~~

~~Secs. 50-24-50-20. Reserved.¶~~

~~¶~~

~~Article II. IRRIGATION DITCHES²¶~~

~~¶~~

~~Sec. 50-21. Depositing waste; damming or clogging ditches.~~

~~No~~It shall be unlawful for any person ~~shall~~ to deposit waste or debris of any kind or description or in any way dam, clog, or interfere with the water running in any canal or ditch or cause the same to overflow upon the streets ~~and~~, alleys, or public highways of the city.

~~¶~~

~~State law reference(s) – Litter of watercourses, C.R.S. 18-4-511.¶~~

~~Sec. 50-22. Ditches to be cleared of weeds and grass.~~5. Owner responsibilities.

~~All irrigation ditches and ditch rights-of-way within the city shall be cleared of weeds and tall grass on or before July 1 and August 1 of each year.¶~~

~~¶~~

~~Sec. 50-23. (a) Guards at opening of flumes and certain ditches.¶~~

~~In all cases, where the water of an irrigation~~*required.* If an owner's ditch ~~within the city~~ ~~passes~~pass through a flume or covered ditch having a cross-sectional area equal to or greater than 50 square inches and a length of 20 feet or more ~~it shall be~~, the owner shall ensure that the flume or covered ditch area is guarded at the intake end by suitable bars of steel or wood, spaced not to exceed five inches from centers; vertically or horizontally, or some other form of guard equivalent thereto in the opinion of the city's engineering division. It shall be unlawful for any owner to fail to have such guards in place.

~~State law reference(s) – Head of ditch to be latticed, C.R.S. 37-84-110, 37-84-111.¶~~

~~¶~~

~~Sec. 50-24. Responsibility of user of water.¶~~

~~¶~~

~~Any person using water out of~~

(b) *Clearing required.* All owners shall ensure that any ~~irrigation ditch~~canal or ditch, including any ditch rights-of-way within the city ~~shall be considered, for the purpose of the following two sections, the owner of such ditch, are free from~~ rubbish and weeds.

² ~~State law reference(s) – Water rights and irrigation, C.R.S. § 37-80-101 et seq.; constitutional provisions as to irrigation, Colo. Const. Art. XVI, § 5 et seq.¶~~

- (1) It shall be ~~held responsible under such sections~~ unlawful for any owner to fail to keep any canal or ditch, including any ditch rights-of-way within the city, free from rubbish, weeds, and other materials at all times.

~~State law reference(s) Responsibility of owner, C.R.S. § 37-84-101 et seq~~(2) It shall be unlawful for any owner to:¶

¶

~~Sec. 50-25. Overflow of water on streets, etc.~~¶

~~No person who is the owner or user of water out of any ditch within the city shall permit any waste or overflow water or any water from such ditches any canal, ditch, tail ditches or ditch, waste ditches ditch, or any part thereof to flow in or upon any street, or alley in the city so as to damage the same in any way."~~

- (c) ~~Cross reference(s) Streets, sidewalks and certain other public places, ch. 94.~~*Good condition required.* An owner shall ensure that all¶

~~Sec. 50-26. Maintenance and repair of embankments, etc.~~¶

~~The owner of any ditch for irrigation or other purpose shall carefully maintain the embankments thereof and keep such ditch thoroughly clean, parts of any canal or ditch are maintained in good repair and condition so that the water of such ditch may waters within are not flow uponwasted and will not flood or damage the premises of others or the streets or alleys of the city. He shall make and keep in repair tail or waste ditches conveying the overflow water of such ditches beyond the city with as little waste as possible. Failure to do so shall be unlawful.~~

- (d) ~~State law reference(s) Similar provisions, C.R.S. §§ 37-84-101, 37-84-107~~*Tail ditch required during repair or maintenance required.* During any repair or maintenance activities, the owner must make a tail ditch so as to return the water within the canal or ditch with as little waste as possible into the stream from which it was taken. Failure to do so shall be unlawful.

¶

~~Sec. 50-27-50-50. Reserved.~~¶

~~ARTICLE III. STORMWATER~~¶

~~Sec. 50-51. Storm drainage system defined.~~¶

~~The term "storm drainage system" as used in this chapter shall mean every:~~¶

- ~~(1) Pipe, culvert, flume, ditch, storm sewer, cistern, tank, drain, lake, pond, stream, ravine, gully or other facility or natural feature, that contains, holds, transports, diverts, channels, impounds, or drains water, into which any naturally occurring stormwater runoff within the city may seep, percolate or flow; and¶~~
- ~~(2) Street, sidewalk, curb, alley, gutter, bridge, parking lot and other surface within the city across which any naturally occurring stormwater runoff may seep, percolate or flow.¶~~

~~Cross-reference(s) Definitions, § 1-2.~~

Sec. 50-6. User responsibilities.

- ~~(a) *Overflow prohibited.* A user shall ensure¶~~

~~**Sec. 50-** that any use of a canal or ditch does not result in any waste or overflow water encroaching upon or overtaking any street, or alley in the city so as to damage the same in any way. It shall be unlawful for any user to permit any waster or overflow water or any water from any canal, ditch, tail ditch, waste ditch, or any part thereof to flow in or upon any street, or alley in the city so as to damage the same in any way.~~

- ~~(b) **52. Unlawful discharges into storm drainage system.¶**~~

~~(a) It shall be unlawful for any person to discharge or cause to be discharged or spilled into the city's storm drainage system any substance, including but not limited to dirt, mud, landscape materials, hazardous substances such as but not limited to oil products or gasoline, paint, concrete, or any type of cleaning waste or residue. Only naturally occurring stormwater runoff can be discharged into the city's storm drainage system, with the following exceptions: Water used for emergency firefighting activities, discharges of water from ditches and canals as necessary to protect public drinking water supplies, runoff from individual residential car washing, and other discharges that are reasonably expected not to be significant sources of pollutants to the storm drainage system because of either the nature of the discharges or conditions the city has established for allowing these discharges.¶~~

~~(b) Nothing contained herein shall be construed to relieve any person discharging water into the storm drainage system from any liability for damage caused by the volume or quality of water thus discharged. For purposes of this section the term "storm drainage system" shall be defined as provided in section 50-51 and the term "stormwater runoff" shall be defined to include any flow of water resulting~~

~~from rain or other forms of natural precipitation.~~*Repair and maintenance.* A user shall ensure ¶

- (c) ~~The discharge prohibition shall not apply to any non-stormwater discharge permitted under the National Pollutant Discharge Elimination System or Colorado Discharge Permit System permit, or Colorado Department of Public Health and Environment (CDPHE) issued policy or guidance, or waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency (EPA) or CDPHE under the authority of the EPA, unless the city determines that the discharge is a significant source of contamination.~~¶

~~Secs. 50-53-50-69. Reserved.~~¶

~~ARTICLE IV. SITE DEVELOPMENT PERMIT~~¶

~~Sec. 50-70. Short title.~~¶

~~This article shall be known and may be cited as the “Site Development Permit Regulations.”~~¶

~~Sec. 50-71. Introduction/purpose.~~¶

~~The purpose of this article is to establish a system of permitting, inspection, and enforcement to control soil erosion from wind and water on land that all embankments of any canal or ditch related to, or affected by their use are maintained in good repair and condition so that the waters within are not wasted and will not flood or damage the premises of others.~~

- (c) ~~is undergoing earth-disturbing~~*Tail ditch required during repair or maintenance required.* During any repair or maintenance activities, the user must make a tail ditch so as to return the water within the canal or ditch with as little waste as possible into the stream from which it was taken. Failure to do so shall be unlawful.

~~Sec. 50-7. Penalty; continuing violation.~~

- (a) *Penalty.* A violation of this article shall be punished by a fine or imprisonment not to exceed the limits established in section 1-5 of this Code.
- (b) ~~and~~*Continuing violation.* In accordance with section 1-5 of this Code, every day any violation of this article continues or is permitted or allowed to continue shall constitute a separate offense.

- (c) *Concurrent remedies.* The initiation of a prosecution for a violation of this article shall not preclude any other remedies available to the city under this Code.

Sec. 50-8-50-20. Reserved.

Article II. DRAINAGE AND STORMWATER

DIVISION 1. PURPOSE AND DEFINITIONS

Sec. 50-21prevent. Legislative intent and purpose.

The city owns and operates a municipal separate storm sewer system (“MS4”) to promote the safe, efficient, and effective drainage of stormwater and other runoff or discharges. To enhance the functions of the MS4, the City Council has determined that the quality of the runoff discharged into the MS4 must, to the maximum extent practicable, be protected from pollutants that could impact the environment or the health, safety, and welfare of the public. The city protects its MS4 by regulating land disturbance activities likely to cause or increase soil erosion, or that may contribute other pollutants to stormwater runoff during construction. These activities cause sediment and ~~eroded soil from being transported onto adjacent property, and into storm drainage systems~~ pollutants to flow into the MS4, waterways, streams, rivers, ponds, ~~or~~ and other similar areas.— Regulation of land disturbance activities during construction occurs through the permitting, inspection, and enforcement requirements of this article. The purpose of this article is to establish the specific procedures and requirements necessary to promote such protection.

Sec. 50-22. Authority.

The authority to establish, implement, and enforce drainage and stormwater regulations is derived from the city’s powers and authority as a home rule city under articles 15 and 35 of Title 31 of the Colorado Revised Statutes and from the Engineering Code of Standards and Specifications as adopted and amended by the city.

Sec. 50-7223. Definitions.



The following words, terms, and phrases, when used in this article, shall have the following meanings ~~ascribed to them in this section, except where the~~, unless the context clearly indicates ~~a different meaning~~; otherwise:



Applicant means ~~any~~ a person ~~that files an application~~ applying for a site disturbance permit ~~pursuant to this article.~~

~~Best management practices (BMPs) means, BMP, control measures, or erosion and sediment control measures~~ mean the schedules of activities, prohibitions of practices, maintenance procedures, and other management practices used to prevent or reduce the pollution ~~BMPs~~ of the municipal separate storm sewer system. BMP also ~~include~~ includes treatment requirements, operating procedures, and practices to control plant site runoff, spillage ~~or~~ of leaks, sludge or waste disposal, ~~or~~ and drainage from raw material storage.

~~City engineer~~ CDPHE means the Colorado Department of Public Health and Environment.

City inspector means a person authorized by the director to inspect a site for the purpose of determining compliance with the provisions of this article.

~~City manager of~~ means the city's engineering division, ~~city manager or the manager's designated representatives, designee~~ their designee.

Construction activities mean clearing, grading, excavation, and other ground disturbance activities. Construction activities do not include routine maintenance performed by public or private agencies or their agents to maintain original line grade, hydraulic capacity, the original purpose of a facility, or any agricultural activities.

~~Clearing~~ Day means a calendar day unless otherwise specified.

Development means any activity ~~which removes, whether purposefully, excavation or incidentally,~~ fill, alteration, subdivision, change in land use or practice, undertaken by private or public entities that affect the ~~vegetative surface cover~~ discharge of stormwater runoff.

Director means the director ~~of the city's utilities department or the director's representative, designee or agent.~~ ¶

~~Drainageway~~ means any channel, whether manmade or natural, that conveys surface runoff throughout the site. ¶

~~Earth disturbance or earth disturbing activity means any manmade change in the natural vegetative or soil cover or public works or the change in the existing topography of land, including all grading, filling, excavating, stripping, construction of improvements, or other activities, which may result in or contribute to soil erosion or sedimentation into any storm drainage system or waterway, or create airborne dust.~~ their designee.

~~Emergency activity/emergency work~~ means work made necessary to restore property to a safe condition following a public calamity or work required to protect persons or property from imminent exposure to danger (see Environment, ch. 38). ¶

~~Erosion means the process by which the ground surface is worn away by action of wind, water, gravity, or a combination thereof.¶~~

~~Erosion Division means the Colorado Department of Public Health and Environment Water Quality Control Division.~~

~~Engineering Standards means the most recent edition of the Engineering Code of Standards and Specifications as amended and adopted by the City.~~

~~Erosion and sediment control plan or ESC means measures engineering construction drawings that prevent soil erosion from wind or water show the proposed BMP on land a site throughout the duration of a project.~~

~~Final drainage report means a design report that is undergoing earth disturbing activity approved by the city with construction drawings presenting the final stormwater infrastructure design calculations and details.~~

~~Excavation means any act by which soil or rock is cut into, dug, quarried, uncovered, removed, displaced, relocated, or stockpiled.¶~~

~~Filling means any act by which soil, rock or other construction materials are placed, stockpiled, relocated, moved, dumped, or a combination thereof onto the surface of the earth.¶~~

~~Grading means any stripping, excavating, filling, or stockpiling of soil or rock, or any combination thereof, and also included shall be the land and its excavated or filled condition.¶~~

~~Grading plan means a set of plans showing the changes being proposed to the current land surface.¶~~

~~Perimeter control means a barrier that prevents sediment from leaving a site either by filtering sediment-laden runoff, or diverting it to a sediment trap or basin.¶~~

~~PermanentFinal stabilization means that a state when all land disturbance activity at a site has been completed and uniform vegetative cover has been established with an individual plant density of at least 70 percent density, or that best management of pre-disturbance levels or equivalent permanent, physical erosion reduction methods have been employed.~~

~~Illicit connection means any tie-in to the city's MS4 that is not related to stormwater or groundwater and is not authorized by the city. Examples of an illicit connection include but are not limited to:~~

- ~~(1) a connection made in the past, regardless of whether the connection was permissible under law or practices preventing exposed soil from eroding were implemented applicable at the time the connection was made; and~~

- (2) a line connected to the MS4 that conveys sewage or allows sewage to be conveyed to the MS4.

Land disturbance activity means any activity that changes the volume or peak flow discharge rate of stormwater runoff from the land surface. This includes but is not limited to the grading, digging, cutting, scraping or excavating of soil, placement of fill materials, paving, construction, substantial removal of vegetation or any activity that bares soil or rock or involves the diversion or piping of any natural or man-made watercourse.

Landscape materials mean any material used in or derived from the landscape or improvements to the landscape of real property, including without limitation, trees, branches, shrubs, plants, vegetation, brush, yard trimmings, leaves, side, dead plant material, soil, dirt, sand, gravel, rock, stone, boulders, mulch, fencing, paving materials, or other similar materials.

MS4 permit means a water quality municipal MS4 permit issued to the city by the Colorado Department of Public Health and Environment (CDPHE).

Municipal separate storm sewer system or MS4 means a conveyance or system of conveyances owned by the city, that are designed or used for collecting or conveying any naturally occurring stormwater runoff whether such system is manmade or natural. This conveyance or system of conveyances includes but is not limited to:

- (a) pipes, culverts, flumes, ditches, storm sewers, cisterns, tanks, drains, lakes, ponds, streams, ravines, inlet/catch basins, man-made channels, gullies or other similar facilities, or natural features that contain, hold, transport, divert, channel, impound, or drain stormwater; and
- (b) streets, sidewalks, curbs, alleys, gutters, bridges, parking lots, and other surfaces within the city across which any naturally occurring stormwater runoff may seep, percolate, or flow.

Owner means the person identified as the record owner of the real property and their lessee or designee, if applicable.

Permittee means ~~the person~~ an owner and the owner's authorized agent who ~~is designated the owner-developer on the~~ has obtained a site development disturbance permit application from the city.

Person means ~~a natural person, firm, an individual, as well as a corporation (either profit or nonprofit), , company, association, firm, partnership, association, group or business entity.~~¶

Phasing means ~~clearing a parcel of land in distinct areas, with the stabilization of each disturbance before the clearing of the next~~society, or other organization.

Project means all of the development to be performed by the applicant as described in the proposed plan(s), including all phases of a proposed subdivision, or the development by the applicant of multiple lots or parcels that are contiguous, abutting, adjacent, adjoining, bordering, neighboring, or tangential to each other.

~~*Sediment control* means measures that prevent eroded sediment from leaving the site.~~

~~*Significant storm event* means any event, such as precipitation, snowmelt, or wind, which results in visible erosion of any portion of the site.~~

Public property means any street, right-of-way, road, highway, place, alley, sidewalk, easement, park, open space, square, median, parkway, boulevard, plaza, or other similar area within the city that is dedicated to public use or is owned or maintained by the city.

Receiving waters means a river, lake, stream, drainage ditch, or other watercourse.

Site means a parcel of land, or a contiguous combination thereof, where earth disturbing activity is performed.

~~*Site development permit plan* means a permit issued the planning document approved by the city for the control of erosion, runoff, and grading when altering the ground, or constructing that identifies improvements and structures other responsibilities associated with the development or redevelopment of parcel(s) of land.~~

~~*Site development permit contact* means an individual who has received erosion and sediment control training and is responsible for installation, inspection, and maintenance of erosion and sediment control practices, and recordkeeping.~~

~~*Stabilized* means adequate measures are in place, vegetative, structural or both, to prevent erosion from occurring.~~

~~*Stormwater management plan (SWMP)* means a plan required by~~ *State* means the State of Colorado ~~as part of the permitting process to be in compliance with the state or any division thereof.~~

Stop work order means an order issued by the city requiring all construction activity on a site be stopped.

Stormwater means precipitation-induced surface runoff.

Stormwater construction permit means a permit issued by the Division to the permittee that regulates stormwater discharges from construction activities under the Colorado Discharge Permit System (CDPS) general permit for stormwater discharges associated with construction

activities, which "describes the appropriate controls and measures to improve water quality by reducing pollutants in stormwater discharges and ensure permittee compliance with the requirements of the stormwater permit."

~~Temporary soil sediment and erosion control measures means interim or temporary control measures which are installed or constructed and maintained to control, manage, or prevent accelerated soil erosion which occurs from earth disturbing activities until permanent stabilization measures are implemented, installed, or completed.~~

~~Waterway means a channel~~ *Stormwater drainage facilities* mean constructed facilities or technology designed to reduce stormwater runoff volume, peak flow, and pollutants before discharging to receiving waters or the city's MS4.

Stormwater management plan (SWMP) means a narrative plan designed to minimize the accelerated erosion and sediment runoff at a site during construction activities.

Stormwater runoff means ~~that directs~~ part of snowfall, rainfall, or other precipitation that is not absorbed, transpired, evaporated, or left in surface runoff to any depressions, and that then flows controlled or uncontrolled into a watercourse or body of water.

Temporary BMP means those temporary pollution control measures including, but not limited to ~~lakes, silt fences, wattles, vehicle tracking pads, inlet filters, diversions, sediment ponds, rivers, and streams, or to the public storm drain.~~ and dewatering structures, to be installed and regularly maintained until the site is sufficiently stabilized.

Vegetative cover means grasses, shrubs, bushes, trees, ground cover, and other similar plants.

Watercourse means a natural or human-made channel, ditch, conveyance, or the standing body of water into which stormwater is discharged.

Sec. ~~Sec. 50-24-50-34.~~ Reserved.

DIVISION 2. DUTIES AND POWERS OF THE DIRECTOR

Sec. 50-35. Duties and powers of the director.

(a) *General.* The director is authorized and directed to implement, administer, and enforce the provisions of this article. The director may:

- (1) Implement, administer, and enforce any processes or requirements necessary for an applicant to obtain a site disturbance permit;

- (2) Determine when land disturbance activity may impact an environmentally sensitive or hazardous area or determine that a site disturbance permit should otherwise be required;
- (3) Waive any security requirement for a site disturbance permit when the director determines it is in the city's best interest to do so;
- (4) Require access to the property of applicants or permittees to ensure compliance with any requirements under this article;
- (5) Establish and collect fees for issuing site disturbance permits;
- (6) Render interpretations of this article and adopt policies and procedures in order to clarify the application of its provisions. These interpretations, policies, and procedures shall be in compliance with the intent and purpose of this article, and shall not have the effect of waiving requirements specifically provided for in this chapter;
- (7) Revoke any site disturbance permit due to noncompliance with any requirement in this chapter; and
- (8) Otherwise implement, administer, and enforce the provisions of this chapter.

Sec. 50-73. Site 36. Director action authorized: compliance procedures.

- (a) *Notice and order.* The director may give notice to any person who is in violation of any requirement imposed by this article or has committed, or caused to be committed, any unlawful act under this article.
 - (1) Content of written notice and order. The notice and order shall set forth any order or orders stating the actions necessary to comply with the terms of a site disturbance permit, correct any failing BMP, control, contain, or stop a discharge or spill, remove an illicit connection, remediate damage caused by an unlawful discharge or illicit connection, or any other order or orders related to an unlawful act stated in this article. The notice shall allow the person a reasonable amount of time as determined by the director from the date of the notice and order to comply with each order listed in the notice and order. The notice and order shall also remind the person of their obligations under this article, and note that inspection fees, re-inspection fees, and other fees, charges, and penalties will be assessed for non-compliance. The director may order a person to take, permit, or allow any action reasonably necessary to ensure compliance with this article.

(b) *Violation notice.* In the event the person subject to the notice and order in subsection (a) does not comply with the order or orders within the time frame set forth in the notice and order, or within the period of any extension requested by the person subject to the violation and granted by the director, whichever date is applicable, the director shall send a notice of violation to the person subject to the notice and order. The violation notice shall contain notice that the city will be taking action necessary to remediate the violation and any related damage, and that all costs or fees associated with such action will be assessed against the property associated with the site.

(c) *Mailing and posting of notices.* Each notice and order or violation notice issued under this section shall be sent by electronic mail and mailed to the person by first class U.S. Mail. In addition, a violation notice shall be posted on the property. Each notice must state any appeal available.

(d) *Other actions authorized.* In addition to taking any action authorized under section 50-35 of this article following discovery of a violation or suspected violation, the director may issue a summons and complaint, revoke a site disturbance permit, withhold city inspections, decline to issue a building permit or a certificate of occupancy, or take any other enforcement action reasonably calculated to gain compliance with a permit or to protect the city's MS4. The director may coordinate with the director of the community and economic development ~~permits~~ to stop work on the site in a manner similar to the process described in subsection 10-1-2-2E1 of the Arvada Land Development Code (LDC) but made applicable to this article. A stop work order issued under this subsection shall remain in effect until such time the site returns to a reasonable compliance level as determined by the director. Once a violation is remedied, the director may lift a stop work order, reissue a revoked site disturbance permit, or take other similar action to allow work to continue in compliance with this article.

(e) *Emergency action authorized.* Notwithstanding anything in this article to the contrary, the director may take any action necessary to correct or remediate a violation of this article or a suspected violation of this article that poses an acute risk to the health, safety, and welfare of the public. In these situations, the notice and order requirements of this section do not apply and the director may issue a notice of violation and require the owner or permittee to perform remediation once the acute risk has subsided.

(f) *Recovery of expenses and fees.* The city may recover any expenses and fees associated with the enforcement and remediation activities described in this article. These expenses include but are not limited to costs of work necessary to ensure proper erosion and sediment control, sampling and monitoring expenses, the costs of any actual damage incurred by the city, and inspection and re-inspection fees.

- (1) Upon an owner or permittee's failure to reimburse the city for such expenses and fees, the city may, in its sole discretion:
 - (i) Recover the expenses and fees through a lien in accordance with section 50-37 of this Code; or
 - (ii) Draw against any applicable cash escrow or letter of credit required under section 50-54. If the city draws against such cash escrow or letter of credit, the cash escrow or letter of credit must be restored to its full value before any construction activity may resume at the site. If the city revokes a site disturbance permit due to a violation of this article, and the city incurred fees and expenses related to the violation, the city must return the balance of the cash escrow or letter of credit to the permittee following deductions made for the city's incurred expenses and fees.

Sec. 50-37. Fees, charges, and expenses to be a lien upon property.

- (a) *Debt due and owing.* Unless paid within 30 days of assessment or request for reimbursement, all fees, rates, charges, penalties, or expenses incurred by the city under this article constitute a debt owing to the city, and the city has the right to recover on any such debt in the manner provided by law in any court of competent jurisdiction.
- (b) *Lien.* Unless paid within 30 days of assessment or request for reimbursement, all fees, rates, charges, penalties, or expenses incurred by the city under this article constitute a perpetual lien on and against the site, and any such lien may be foreclosed by the city at any time in the manner as provided by the laws of the state for the foreclosure of mechanics' liens or in accordance with chapter 59 of this Code entitled "Municipal Liens." Such lien foreclosure by the city is subject to all rights of redemptions granted by C.R.S. §38-39-101 *et seq.*, as amended.

Sec. 50-38. Appeals of a determination or order of the director.

- (a) *Filing; timeliness.* Except for an emergency action taken by the director under section 50-42 (e), a permittee or owner whose property is affected by a determination of the director made under this article, who is subject to a notice or order of the director made under section 50-36, may appeal that determination or order on a form prescribed by the city and available from the director on the city's website or by hard copy. The appeal must be in writing and be submitted to the city clerk within 14 days of the date of the director's determination or order. An appeal form that is not complete in all respects or that does not state the grounds for appeal shall be promptly returned by the clerk to the customer. The customer may resubmit an appeal form deemed incomplete by the clerk, and the clerk shall accept it, if the resubmitted form is complete and submitted to the clerk within the deadline set forth in this subsection. Compliance with the 14-day time

limit noted in this subsection (a) shall be a jurisdictional prerequisite to any appeal brought under this article. Failure to comply shall bar any such appeal.

(b) *Grounds.* The appeal shall be based on a claim that:

(1) The provisions of this article do not apply; or

(2) The true intent of this article has been incorrectly interpreted by the director.

(c) *Procedure.* The appeal form, and any other documentation submitted to the city clerk by the owner or permittee, as well as any response or documentation submitted by the director, will be submitted by the city clerk to the city manager for review. Notwithstanding any other provision of this Code, the appeal of the director's determination shall consist of a review of all relevant documentation on file with the city in the case, as well as the appeal form and any accompanying materials. All documents may be reviewed electronically. The city bears the burden of proof in an appeal to establish that the director's action or determination was reasonable in light of the intent of this article, that the terms of this article applied to the customer in question. The city manager shall review the information submitted, and within 14 days of the date of the filing of the appeal, issue a written decision on the appeal. The decision must contain the reason or reasons for the decision. The decision must set forth appeal rights, if any. The decision may be mailed by first class U.S. Mail or furnished to the customer electronically. Should the city manager fail to issue a written decision on the appeal within the time frame set forth herein, the claim shall be deemed denied, and the customer may proceed as if an adverse decision has been issued.

(d) *Appeal of city manager's decision.* The city manager's decision, or denial of an appeal as a result of the manager's failure to issue a written decision, shall be considered a final agency decision. The appeal may proceed under Rule 106 of the Colorado Rules of Civil Procedure.

Sec. 50-39. Right of entry.

(a) *Generally.* Where it is necessary to make an inspection or perform other work necessary to implement or administer this article, or where the director has reasonable cause to believe that there exists upon a structure or premises a condition or violation of this article that poses an immediate risk of harm to the city's MS4 or a serious threat to the health, safety, and welfare of the public, the director shall have the authority to enter the structure or premises at all reasonable times based upon the circumstances to inspect or to perform the duties imposed upon the director under this article. This right of entry exists to protect the environment by reducing or preventing pollutants from entering into the city's MS4 and to protect the health, safety, and welfare of the public.

(b) *Occupied premises.* If the structure or premises is occupied, the director shall present credentials to the occupant and request entry, unless the city has an easement allowing entry, or unless the structure or the building is located on common property of an HOA or other similar entity. If, after presentation of the director's credentials, entry is refused, the director shall have recourse to every remedy provided by law to secure entry, including seeking a warrant for entry.

(c) *Unoccupied premises.* If the structure or premises is unoccupied, the director shall first make a reasonable effort to contact the owner or other person having charge or control of the structure or premises and request entry, unless the city has an easement allowing entry or unless the structure or building is located on common property of an HOA or other similar entity. If entry is refused or unable to be obtained, the director shall have recourse to every remedy provided by law to secure entry, including seeking a warrant for entry.

(d) *Warrant process.* If entry is refused or unable to be obtained, and if there is reasonable cause to believe there exists upon a structure or a premises a violation of this article, the director may apply to the municipal court for a warrant, if the violation involves a serious threat to the health, safety, and welfare of the public, and if the violation is not also a violation prohibited by state statute for which a search warrant could be issued by a district or county court. The warrant may authorize entry on the structure or premises to inspect for the presence of a discharge or spill, to test or sample a discharge or spill, inspect for a connection to the MS4, to determine compliance with, or lack of, a site disturbance permit, or to otherwise determine compliance with this article.

Sec. 50-40–50-50. Reserved.

DIVISION 3. SITE DISTURBANCE PERMIT REGULATIONS

Sec. 50-51. ¶

~~(a) A site development permit is required for earth-disturbing activities which disturbs an area of more than 10,000 square feet, except. ¶~~

~~¶~~

~~(1) Any emergency~~ **Land disturbance activity and permit required.**

(a) *Generally.* All land disturbance activity must comply with the city's Land Development Code, the Engineering Standards, this article, and any other applicable guidelines and standards adopted by the city. No land disturbance activity may exceed 60 acres on any one site unless authorized by the director.

(b) *Permit required.* Except for the land disturbance activity described in section (c), a site disturbance permit is required for each site or subdivision filing prior to conducting any land disturbance activity that:

- (1) Covers an area equal to or greater than 0.5 acres, including stockpiles, construction staging, employee parking, and building material storage areas;
- (2) Covers an area less than 0.5 acres but is part of a larger planned development;
- (3) Involves environmentally sensitive or hazardous areas, as determined by the director; or
- (4) Involves a project for which the director deems a site disturbance permit to be necessary.

(c) *When not required.*

- (1) A site disturbance permit is not required for any land disturbance activity which is immediately necessary for the protection of life, property, or natural resources ~~as approved by the director.~~ However, the person responsible for the land disturbance activity is required to apply for a site disturbance permit within 14 days of commencing emergency activities if those activities meet the requirements of Sec. 50-51(b).

~~(2) Nursery and agricultural operations.~~

Sec. 50-52. Site disturbance permit authorized discharges.

(a) The site disturbance permit authorizes the following discharges:

- (1) Stormwater associated with construction activity.
- (2) stormwater associated with producing earthen materials, such as soils, sand, and gravel dedicated to providing material to a single contiguous site or within one quarter mile of the construction site also covered by the site disturbance permit.
- (3) Stormwater associated with dedicated asphalt, concrete batch plants, and masonry mixing stations.
- (4) Discharges from uncontaminated springs that do not originate from an area of land disturbance.
- (5) Discharges to the ground of concrete or masonry washout water associated with the washing of concrete or masonry tools and concrete or masonry mixer chutes, and water used to wash vehicles, equipment, and external buildings. Discharges of concrete or masonry washout water must not leave the site as surface runoff or

reach a watercourse as defined by the code. The addition of soaps, solvents, and detergents is prohibited.

(6) Discharges of landscape irrigation return flow.

(7) Discharges from diversions of waters of the state within the permitted site.

(8) Discharges resulting from emergency firefighting activities during the active emergency response.

(b) All discharges from sites operating under a site development permit must consist only of the sources listed above, or must be covered under an additional or alternative permit.

Sec. 50-52. Site disturbance permit ¶¶

~~(b) A separate site development permit is required for each site and/or subdivision filing. Sites 10,000 square feet or less, that are a part of a larger development, whereas the obligations under the site development permit for that parcel have been transferred to the person intending to improve the parcel, will be issued a site development permit by the city in accordance with section 50-78 of this article.¶¶~~

~~¶¶~~

~~(c) Each application shall be accompanied by an~~ **application requirements.**

(a) *Application requirements.* An applicant seeking a site disturbance permit shall submit a completed permit application, meet all of the requirements set forth in the application, provide any other documents required by the director to support the application, and satisfy any other requirements established by the director.

(1) All documents required by the director to be submitted in support of an application must satisfy any requirements established by the director.

(b) *Application changes.* Prior to the issuance of a site disturbance permit, an applicant must update any new information on any permit application, including any changes to a document included in a permit application, within ten days of any change occurring.

Sec. 50-53. Site disturbance permit fee~~in accordance with the table below:.~~

Disturbed Earth square feet (SF)¶¶	Application Fee¶¶	Resubmittal Fee¶¶
0 – 10,000¶¶	\$0.00¶¶	\$0.00¶¶
10,001 – 50,000¶¶	50.00¶¶	25.00¶¶
50,001 – 250,000¶¶	75.00¶¶	38.00¶¶

250,001 – 500,000 ¶	100.00 ¶	50.00 ¶
Greater than 500,000 ¶	125.00 ¶	63.00 ¶

Before a permit is issued pursuant to this article, the applicant shall pay to the city a site disturbance permit fee in an amount set forth in the public works administrative fees and costs schedule.

Sec. 50-54. Cash escrow or letter of credit required.

(a) *Cash escrow or letter or credit required.* No site disturbance ¶

~~(d) Except as provided in this subsection (d)(2), no site development permit shall be issued until such time as a cash escrow or letter of credit has been received and approved by the city. Public and quasi-governmental entities are waived from the cash escrow or letter of credit requirement. This cash escrow or letter of credit shall serve as security for the performance of work necessary to stabilize the site if the permittee with the site development permit fails to install or maintain the necessary BMPsBMP or to complete the work under the permit. The amount of the cash escrow or letter of credit shall include, at a minimum, the cost estimate for the proposed BMP associated with the project.~~

~~(1) Upon~~ (b) *Waiver of requirement.* Notwithstanding the effective date of requirements for providing security set forth in this article, before the first permit required by this article is issued to, or on behalf of, any person, the applicant shall post with the director as security for said permit, may waive posting of a cash escrow or a letter of credit in the amount of \$2,000.00 plus \$200.00 per acre for any parcel that is the subject of a site development permit. ¶

¶

~~(2) If the applicant is a public or quasi-governmental entity, the applicant has already posted a cash escrow or letter of credit shall for the project subject to these requirements, or the waiver would be executed consistent with section 78-298(c) of within the Code city's best interests.~~

~~(3)~~ (c) *Drawing and replenishment.* The cash escrow or letter of credit shall remain at the ~~amounts~~ amount specified herein, through the final inspection for final stabilization. In the event the city draws against the security, the ~~developer~~ applicant in question shall replenish the security to the amount required within 30 days after notice by the city to do so.

~~(4) This section shall not apply to permittees who have already posted a cash escrow or letter of credit.~~¶

~~¶~~

~~(5) Notwithstanding the requirements for providing security set forth in section 78-298 of this Code, the director may waive posting of a cash escrow or letter of credit.~~¶

~~¶~~

~~(e)~~**Sec. 50-55. City responsibilities.**

~~(a)~~ *Review and approval of permit applications.*

~~(1) The city will review each site developmentdisturbance permit application or revised application to determine its the application's conformance with the provisions of this chapterarticle, the Land Development Code, and the Engineering Code of Standards and Specifications. Within 30 business days after physical. Upon the receipt and review of an application or within 20 business days after physical receipt of a revised application, the city shall, the director may, in writing:~~

~~(1)~~ ~~(i)~~ Approve the permit application; ~~or~~

~~(2)~~~~(ii)~~ Approve the permit application subject to such reasonable conditions as may be necessary to substantially secure the objectives of this article, and issue the permit subject to such conditions; or

~~¶~~

~~(3)~~~~(iii)~~ Disapprove the permit application, indicating the deficiencies. The applicant may submit a revised site developmentdisturbance permit application for review and approval, subject to upon payment of a resubmittal fee as set forth herein. An additional 20 business days may be required for review.in the public works administrative fees and costs schedule.

~~¶~~

~~(b)~~ *Closure of* **Sec. 50-74. Site development permit application.** ¶

~~¶~~

~~(a) The site development permit application supporting documentation must show the following.~~ ¶

~~¶~~

- ~~(1) Construction site boundaries and all areas of earth disturbance, including areas of cut and fill, locations of springs, wetlands, and other surface waters including dry drainageways.¶¶~~
 - ~~(2) Contours will not be more than one-foot intervals on individual lots, will not be more than two-foot intervals on other submittals, and shall show both existing and proposed grade on an appropriate scale and proposed parcel specific and lot specific drainage.¶¶~~
 - ~~(3) Erosion and sediment control plans must show all temporary measures necessary to meet the objectives without violation of this article throughout all phases of construction and permanently, after completion of development of the site..~~
 - ~~(4) Installation details of each erosion and sediment control practice to be utilized on-site in accordance with the specifications found in the most recent version of Urban Storm Drainage Criteria Manual, Volume 3 Best Management Practices, published by the Urban Drainage and Flood Control District or in the city's Engineering Standards and Specifications. In the event of a conflict between these two sources, the city's Engineering Standards and Specifications shall be followed.¶¶~~
 - ~~(5) Alternative erosion and sediment control measures different from those available in the above subsection (4) by which are needed for unique situations may be approved by the city engineer on a case-by-case basis.¶¶~~
 - ~~(6) For any development proposed within the city for which a stormwater management plan must be prepared and implemented pursuant to the laws or regulations of the state, a copy of the plan shall be submitted to the city along with the site development permit application.¶¶~~
 - ~~(7) Any additional information needed by the city to properly evaluate the application.¶¶~~
- (1) The city may close a site disturbance permit when:
 - (i) ~~Final Sec. 50-75. Site development permit requirements.¶¶~~
 - ~~(a) Once earth disturbing activities begin, the permit must be followed until such time as the site has reached final stabilization; has occurred at the opinion of the ¶¶~~
 - ~~(b) The director is authorized to create standardized permit;~~
 - (ii) The final site conditions and enforce those conditions to give effect to the purpose of this article.¶¶

~~(c) Clearing and grading.¶¶~~

~~(1) Clearing techniques that retain natural vegetation and retain natural drainage patterns shall be incorporated to the maximum extent practicable.¶¶~~

~~(2) Phasing shall be required on all sites. The maximum area of earthare in accordance with all terms of the site disturbance at any one time is 60 acres, with the size of each phase to be established at plan review and approved by the director. Exceptions to this phasing requirement, up to 50 percent of the maximum 60 acres, may be granted with written approval from the director; permit; and~~

~~(3) Clearing, except that which is necessary to establish sediment control devices, shall not begin until initial sediment control devices have been installed.¶¶~~

~~(4) Cut and fill slopes shall be no greater than 3:1, except as~~ (iii) ~~The condition of the site is approved by the city engineer to meet other community or environmental objectives.¶¶~~

~~(5) Final grading shall be performed in such a manner as to provide adequate drainage. Drainage from the project must be controlled so it will not result in property damage.¶¶~~

~~(d) Erosion and sediment control.¶¶~~

~~(1) BMPs shall be employed and maintained so as to limit erosion, capture sediment, divert runoff around disturbed areas and prevent the movement of dust or sediment from the site. BMPs shall be employed and maintained to control building material storage and construction site waste, such as discarded building materials, concrete truck washout, chemicals, litter, sanitary waste and other non-stormwater discharges including construction dewatering and wash water that may cause adverse impacts to water quality.¶¶~~

~~(2) Soil must be stabilized within 45 days of inactivity.¶¶~~

~~(3) If vegetative erosion control methods, such as seeding, have not become established within the time frame designated in the permit conditions, the director may require that an additional vegetative option or a nonvegetative option be employed.~~

~~(4) On slopes 3:1 or greater or in drainage ways, special techniques that meet the design criteria in the most recent version of Urban Storm Drainage Criteria Manuals published by the Urban Drainage and Flood Control District, the city's Engineering Standards and Specifications, and the city's Land Development Code~~

~~shall be used to ensure stabilization. In the event of a conflict between these three sources, the city's Engineering Standards and Specifications shall be followed.¶~~

- ~~(5) Soil stockpiles must be stabilized or covered when remaining in place for 14 days or more.¶~~
- ~~(6) Sediment controls shall prevent impact to adjacent properties. ¶~~
- ~~(c) Best management practices shall be installed to control potential tracking onto roads and city right-of-way. Should off-site tracking occur, all practicable measures to clean roads and storm drainage ways, at a minimum by the end of each work day, must be utilized. The director is authorized to order a cleanup of a road more frequently.¶~~
- ~~(f) The permittee(2) The city may also close a site disturbance permit when there has been no activity at the site for a period of more than 60 days when doing so is in the best interest of the city.~~
- (3) Nothing in this subsection (b) shall prohibit the city from revoking a site disturbance permit due to a violation of this article.
- (c) *After final stabilization.* Following city final inspection, the permittee will confirm that final stabilization has been achieved by:
 - (1) Removing all temporary BMP and completing any final landscaping; and
 - (2) The city will confirm no other outstanding site disturbance permit requirements remain incomplete, close out the permit, and return any escrow amounts as appropriate.

Sec. 50-56. Site disturbance permit transfers; sale of individual lots.

- (a) *Transfers.* In the event an owner sells, conveys, assigns, dedicates, or otherwise effectuates a change in ownership of all or part of a site, subdivision filing, or lot that is subject to a site disturbance permit, the new owner of the site, subdivision filing, or lot, or their authorized representative must agree with and be subject to the terms and conditions of the site disturbance permit as approved and that are applicable to the portion of the site acquired by the new owner. Any term or condition contained in the original site disturbance permit that could apply to any or all of the property sold, conveyed, assigned, dedicated, or otherwise transferred to the new owner will remain in effect as to the property that is conveyed.
- (1) Transfer of the site disturbance permit to a new owner as set forth herein will become effective upon payment by the new owner to the city of a site disturbance

permit transfer fee. Should the new owner fail to pay the fee within 14 days of the transfer, the new owner must apply for a new site disturbance permit.

- (2) The director may also require a new owner to complete a permit transfer form or any other process deemed necessary by the director to transfer the permit.
- (3) Upon a transfer described in this subsection (a), the new owner must, within 14 days of the transfer, designate a new site disturbance permit contact person to the site, inform the city of the change of contact person, and take any other action deemed necessary by the director to facilitate the transfer of the permit.

(b) *Sale of individual lots.* The permittee's obligations under this article for an individual lot end after the following conditions have been met:

- (1) The lot has been sold to a private homeowner for private residential use;
- (2) A certificate of occupancy or ~~his/her agent shall conduct~~ equivalent is maintained on-site or ~~electronically~~ and is available for review upon request by the city or ~~division~~;
- (3) The lot is less than one half acre of land disturbance activity;
- (4) All construction activity on the lot by the permittee is complete, including the installation of sediment and erosion control measures that minimize sediment from exiting the lot, or the installation of temporary stabilization on remaining disturbance where the permittee is not responsible for final stabilization (e.g. backyards);
- (5) The permittee is not responsible for final stabilization of the remaining disturbed areas on the lot; and
- (6) The SWMP is modified to indicate that the lot is no longer part of the construction activity.

The permittee's obligations for the rest of the development continue as established by this article.

Sec. 50-57. Site disturbance permittee – inspection responsibilities.

- (a) *Generally.* The permittee shall perform any action or inspection as requested by and in accordance with direction from the director. The permittee shall also allow representatives of the city to enter the permitted site as necessary to make regular inspections of ~~to~~ ensure the validity of the reports filed pursuant to this article and the

permittee's compliance with the permit's conditions and requirements. The director has the right of entry pursuant to section 50-39.

- (b) *Before construction.* Following the issuance of a site disturbance permit but before any land disturbance activity begins, the applicant shall install all initial BMP and schedule an initial inspection with the public works department. The purpose of the inspection is to ensure all BMP are adequate, installed correctly, and functioning properly.
- (c) *During construction.* The permittee must inspect all erosion and sediment control measures ~~at least~~ on the site on a regular basis but no less than every 14 days. ~~Post-storm inspections must be conducted~~ The permittee must also inspect all erosion and sediment control measures on the site within 24 hours after the end of any precipitation, windstorm, or snowmelt event that causes surface erosion.
 - (1) Inspections shall include observations of the construction site perimeter, all disturbed areas, ~~material~~ materials storage areas that are exposed to precipitation, discharge locations, and locations where vehicles access the site for evidence of, or potential for, pollutants entering the stormwater drainage system, ~~erosion and sediment control practices~~. The inspection shall also confirm that the site is in compliance with the BMP identified in the site ~~development~~ disturbance permit, the erosion and sediment control plans, and/or SWMP shall be evaluated to ensure that they are operating correctly.
 - (2) All inspections shall be documented in written form and maintained with the onsite ~~site development permit~~ SWMP. The documented ~~permittee~~ permittee inspections must contain, at a minimum, the name of the inspector, the date of the inspection, any concerns noted during the inspection, the date that each concern was addressed, and any revisions to the site ~~development~~ disturbance permit as a result of the inspection. A copy of the inspection must be made available to the director upon request.
 - (3) Should revisions to the ~~best management practices~~ control measures be implemented as a result of deficiencies noted during site inspections, those revisions must be approved by the director and recorded within ~~3~~ three business days on the approved supporting documentation for the site ~~development~~ disturbance permit.
- ~~(g) As a condition of receipt of a site development permit, the authorized representatives of the city staff, including a designated agent, may enter the development site identified in the permit as necessary to make regular inspections to ensure the validity of the reports filed pursuant to this article.~~
- (d) *Final inspections.* The permittee, in coordination with the city, must conduct all final inspections for all erosion and sediment control

measures on the site and document the findings of such inspections in accordance with requirements established by the director.

¶

- (h) ~~Unless emergency work is necessary, the person to whom the permit has been issued shall have a maximum of seven calendar days from receipt of a city inspection that notes where work fails to comply with the site development permit or SWMP to repair, replace, or otherwise remediate noncompliance conditions or activity noted on the inspection report unless otherwise advised. A written request for an extension may be submitted to the director, who is authorized to grant or deny such extensions.~~¶

Sec. 50-76.58. Site development disturbance permittee – other responsibilities while permit is open.

- (a) *Generally.* Once land disturbance activities begin, the permittee must follow all permit conditions and requirements established by the city until such time as the site has reached final stabilization in accordance with section 50-56(b).
- (b) *Before and during construction.* Before and during construction, the permittee shall be responsible for ensuring that:
- (1) Any installed temporary BMP are properly maintained and are in good working order up to and until the site has reached final stabilization;
 - (2) The site is fully developed and final stabilization is achieved;
 - (3) Any deficiencies noted by the director prior to the expiration of the warranty period for any public improvements in the project have been corrected;
 - (4) Stormwater drainage facilities are constructed and installed in accordance with the approved SWMP, Site Plan, construction plans, and final drainage report;
 - (5) All temporary BMP are removed within 14 calendar days after final stabilization has been achieved and the temporary measures are no longer needed as determined by the director; and
 - (6) The city is notified that construction has been completed and that the permittee cooperates with the city's final inspection to confirm whether final stabilization has been achieved.

Sec. 50-59. Site disturbance permittee – maintenance responsibilities after permit is closed.

- (a) Following the closure of a site disturbance permit pursuant to section 50-56, the owner is responsible for maintaining all stormwater drainage facilities shown on the approved site plan, construction plans, and final drainage report.
- (b) Notwithstanding any other provision in this article to the contrary, an owner must allow a regular inspection of stormwater drainage facilities by the City or a representative thereof on any lot or property that is or was subject to a site plan, construction plans, and final drainage report.

Sec. 50-60–50-71. Reserved.

DIVISION 4. UNLAWFUL ACTS

Sec. 50-72. Unlawful discharge.

- (a) *Unlawful discharges.* It shall be unlawful for any person to discharge or cause to be discharged or spilled any substance other than naturally occurring stormwater runoff, including naturally occurring stormwater runoff containing incidental pollutants, into the city's MS4.

Exceptions: The following discharges or spills shall not be considered an illegal discharge if the discharge or spill originates from:

- (1) Uncontaminated pumped groundwater that has not come into contact with construction activity;
- (2) Landscape irrigation, lawn watering, or irrigation return flows;
- (3) Diverted stream flows, natural springs, or flows from naturally existing riparian habitats and wetlands;
- (4) Rising groundwater;
- (5) Uncontaminated groundwater infiltration;
- (6) Uncontaminated water from crawl space pumps, foundation drains, or footing drains;
- (7) Air conditioning condensation;
- (8) Individual or residential car washing;
- (9) Water incidental to street sweeping (including associated sidewalks and medians) not associated with construction;

- (10) Emergency firefighting activity;
 - (11) Dye testing approved by the director prior to the discharge in which the person engaging in the discharge must provide sufficient analysis of the environmental impacts of the product(s) used for the dye;
 - (12) Agricultural stormwater runoff;
 - (13) Discharges authorized by a Colorado Discharge Permit System or National Permit Discharge Elimination System permit ~~compliance and~~; or
 - (14) Discharges that are made in accordance with the Division's Low Risk Discharge Guidance documents relating to various types of discharges and water line flushing, including but not limited to discharges of potable water and pools, as well as other Division policies and guidance documents where the Division has stated that it will not pursue permit coverage or enforcement for a specified point source discharge.
- (b) Nothing contained herein shall be construed to relieve any person discharging, causing to be discharged, allowing to be discharged, spilling, or causing to be spilled, water or any authorized discharge into the MS4 from any liability for damage caused by the volume or poor quality of the water or authorized discharge.
 - (c) Any person notified of an actual or threatened unlawful discharge shall immediately take actions to stop the unlawful discharge or spill or take any action necessary to prevent the threatened unlawful discharge or spill from occurring.

Sec. 50-73. Failure to comply; conducting operations without permit.

- (a) No person shall construct, enlarge, alter, repair, or maintain any grading, excavation, or fill, or cause the same to be done, without a site disturbance permit or contrary to or in violation of any terms of this ~~article or the chapter~~ or any conditions or requirements for an approved site ~~development~~ disturbance permit.

Sec. 50-74. (1) ~~Any~~ Other unlawful acts.

- (a) *False statements.* It shall be unlawful for any person to make any false statement, representations or certifications in any application, record, report, plan, or other documentation filed, or required to be maintained, pursuant to this article, land disturbance permit, or order issued by the director in accordance with this article.
- (b) *Failure to maintain.* It shall be unlawful for a permittee ~~violating any of~~ to fail to maintain any and all temporary BMP and stormwater drainage facilities provided for in the SWMP both during and after completion of the development, redevelopment, or construction associated with the SWMP.

- (c) *Failure to keep plans on site.* It shall be unlawful for a permittee to fail to keep a copy of the ESC or SWMP, as required, at the site at all times until the site disturbance permit is closed.
- (d) *Failure to inspect.* It shall be unlawful for any permittee to fail to perform any inspection required by this article or by any State permit.
- (e) *Refusal to allow inspection.* It shall be unlawful for any person to refuse to allow an inspection required under this article.
- (f) *Refusal to allow entry.* It shall be unlawful for any person who owns or occupies property upon which a discharge or spill has occurred or originated from, or which contains a connection to the MS4, to refuse to allow the director to survey or inspect the property in accordance with the provisions of this article ~~or the approved site development permit shall be deemed guilty of a misdemeanor, and each day during which any violation.~~
- (g) *Failure to obey.* It shall be unlawful for any person to fail to obey an order, rule, or regulation issued by the director under this article. For purposes of this subsection (i), “fail to obey” includes but is not limited to a person’s failure to comply with a directive issued under section 50-36, failure to remove a connection to the MS4, failure to take action to control or stop an unlawful discharge, or failure to remediate damage caused by an unlawful discharge or illicit connection.
- (h) ~~any of the provisions of this article is committed,~~ *Illicit connections.* It shall be unlawful for any person to construct, use, maintain, or permit the continued ~~or permitted, shall constitute a separate offense.~~ existence of any illicit connection to the MS4.
- ~~(2) Upon conviction~~ (i) *Unlawful substances.* It shall be unlawful for any person to introduce any substance into the MS4 that may cause personal injury or damage to public or private property.
- (j) *Unlawful storage.* It shall be unlawful for any person to place, store, maintain, allow to accumulate or permit any other person to place, store, maintain, or allow to accumulate on any public property or right-of-way any stockpile, pile, storage, accumulation of ~~any~~ construction materials or landscape materials, or any roll-off dumpster, unless such person is an employee, official or contractor of the city acting within the scope of their municipal functions.
- (k) *Unlawful blocking.* It shall be unlawful for any owner to fail to keep and maintain any watercourse within their property free from trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse.

- (1) *Unlawful hazard.* It shall be unlawful for any owner of private property to allow a privately-owned structure within or adjacent to a watercourse to interfere with or become a hazard to the use, function, or physical integrity of such watercourse or any part thereof. In addition, the owner shall maintain each privately owned structure within or adjacent to a watercourse so that the structure does not interfere with or become a hazard to the use, function, or physical integrity of such watercourse or any part thereof.

Sec. 50-75. Criminal penalty; continuing violation.

(a) *Penalty.* A violation, ~~such permittee~~ of this article shall be punished by a fine or imprisonment not to exceed the limits established in section 1-5 of this Code ~~for each offense. In addition to any other penalty authorized by this section, any permittee, partnership, or corporation convicted of violating any of the provisions of this article shall be required to bear the expense of such restoration.~~

~~(3) — The city may withhold~~ (b) *Continuing violation.* In accordance with section 1-5 of this Code, every day any violation of this article continues or is permitted or allowed to continue shall constitute a separate offense.

(c) *Concurrent remedies.* The initiation of a prosecution for a violation of this article shall not preclude the director from instituting other appropriate action to restrain, correct, or abate a violation or to stop an illegal act or unlawful discharge, conduct, or the utilization of an illicit connection on or about any property. The initiation of a prosecution for a violation of this article shall also not preclude the director from taking any actions under section 50-36.

Sec. 50 ~~city inspections, building permits,~~ 76. Conflicts.

~~If a dispute or certificates conflict arises between a provision of occupancy for any site which is not in compliance with the site development permit. ¶~~

~~(4) — The penalties provided in this article shall be cumulative and not in lieu of each other and may be exercised in any order. ¶~~

~~(b) — In the event any person holding a site development permit pursuant to this article violates the requirements the provisions of any technical code, specification, rule, or terms regulation adopted by the city, the director shall determine the prevailing interpretation of this article, or implements site development in such a manner as to materially adversely affect the health, welfare, or safety in light of persons residing or working in the neighborhood or development site, so as to be materially detrimental to the public welfare or injurious to property or improvements in the neighborhood, or so as to be materially detrimental to the environment or nearby waterways, the director may stop work technical code, specification, rule or regulation based on the site, as described in subsection 10-1-2-2E1 of the Arvada Land Development Code,~~

~~until such time the site returns to a reasonable compliance level as determined by the director~~relevant circumstances.

- ~~(c) In the event any person holding a site development permit pursuant to this article fails to comply with a notice of violation or order to stop work, fails to remedy the violation to the satisfaction of the director within the required period of time, or repeatedly is in violation due to systemic issues within the management of the site, then the director, in consultation with the city attorney, shall determine whether to subject the violator to criminal prosecution pursuant to section 10-1-2-3 of the Arvada Land Development Code, or to any other remedy available.¶¶~~
- ~~(d) In the event any person holding a site development permit pursuant to this article fails to comply with all of the terms of the site development permit or if the erosion and sediment control measures fail to function properly, the city may do the required work or cause it to be done and collect from the person or their security all costs incurred, including a 50 percent administrative and inspection fee. Before construction activity may resume at the site, the deposit or letter of credit shall be restored to full value. If the site development permit is terminated, any remaining portion of a deposit or letter of credit shall be refunded to the person after deduction by the city of 150 percent of the cost of the work.¶¶~~
- ~~(e) Notwithstanding the availability of any other remedy, any violation of this article shall constitute a violation of the city code and shall be subject to the general penalty and continuing violation provisions of section 1-5 of the Code.¶¶~~

~~Sec. 50-77. Appeals. 50-90. Reserved."~~

- ~~(a) Appeals as a result of enforcement of this article may be made pursuant to article V of chapter 2 of the Code, with the determination made by any authorized representative or employee of the city.¶¶~~
- ~~(b) Intermediate appeals as a result of enforcement of this article shall be by petition to the director from the site development permit holder for a hearing on a revision, adjustment or modification of the enforcement action. The director may hold the appeals hearing, or designate another as a hearing officer with authority to hold such hearing. The filing of a petition shall not stay any owner's obligation to comply with the enforcement during pendency of the hearing.¶¶~~
- ~~(c) Any petition filed pursuant to this article shall be in writing, and the facts submitted shall be likewise submitted in writing as sworn statements, in form generally acceptable in similar proceedings. Any hearing shall take place within the city at a date and time set by the director, but no later than seven working days from the date of receipt of the petition by the director, unless a different time and date is agreed to by the petitioner and the~~

~~director. Hearings held pursuant to this article shall be held in accordance with the procedures set forth in section 2-171 et seq. of this Code.¶¶~~

~~(d) The director shall make a final determination and may confirm or modify the enforcement remedy in accordance with facts submitted. The director's decision shall be in writing and shall be mailed to or served upon petitioner within ten business days of the conclusion of the hearing. Service by certified mail, return receipt requested, shall be conclusive evidence of notice for the purpose of this article. The decision of the director following an appeal pursuant to this article shall be considered a final order of the director, and any review thereof shall be by the district court pursuant to Rule 106(a)(4) of the Colorado Rules of Civil Procedure.¶¶~~

~~(e) Contest of any criminal citation shall be in the Arvada Municipal Court.¶¶~~

~~Sec. 50-78. Site development permit transfers, awards, or termination.¶¶~~

~~(a) In the event an applicant sells, conveys, assigns, dedicates or otherwise effectuates a change in ownership of all or part of a site, subdivision filing, or lot that is subject to a valid site development permit, the new owner of the site, subdivision filing, or lot, or an authorized representative of the new owner shall either (i) take such interest subject to the existing site development permit or (ii) must obtain a new and separate site development permit. The new owner of the site and/or subdivision filing, or an authorized representative of the new owner, shall either:¶¶~~

~~(1) Agree with and be subject to the terms and conditions of the site development permit as approved that are applicable to the portion of the site acquired by the new owner, in which case the site development permit, or a portion thereof, can, upon payment of a transfer fee and execution of an acknowledgment of transfer, be transferred to the new owner; or¶¶~~

~~(2) If the new owner does not agree with the terms and conditions under the site development permit and submits a new application to be reviewed and approved under the provisions of this article, the terms and conditions of the existing site development permit shall apply during any review period.¶¶~~

~~(b) In all cases, a new site development permit contact will be assigned to the site.¶¶~~

~~(c) Should the portion of the site development permit assigned to a new owner contain an area 10,000 square feet or less, a new site development permit will be awarded to the new owner.¶¶~~

~~(d) The sale of individual lots where structures have been built and completed to private homeowners will not release the person first obtaining a site development permit from~~

~~the obligation to prevent sediment from moving from these lots onto the areas still covered under the site development permit.¶¶~~

~~(c) Termination of a site development permit requires that 1) the site is permanently stabilized, 2) final site conditions are in accordance with permit conditions, and 3) approval by the director. The city may terminate a permit based upon inactivity and permanent stabilization upon notice sent to the site development permit contact when to do so is in the best interest of the city.¶¶~~

~~(f) Nothing herein shall be construed to modify the time period for the city to complete its final inspection and approval, nor shall anything herein be deemed to constitute a termination of a site development permit other than as set forth in section 50-78(a) of this article.¶¶~~

~~Sec. 50-79. Separability.¶¶~~

~~The provisions and sections of this article shall be deemed to be separable, and the invalidity of any portion of this article shall not affect the validity of the remainder.¶¶~~

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REPORT TO CITY COUNCIL PUBLIC HEARING

AGENDA ITEM
10.B.

TO: THE HONORABLE CITY COUNCIL

DATE: August 19, 2024

SUBJECT: CB24-010, An Ordinance Permitting Concealed Handgun Permit Holders to Lawfully Carry a Concealed Handgun at the Arvada City Hall Located at 8101 Ralston Road (Ordinance No. 4876) (Presenter: Rachel Morris, City Attorney)

Report in Brief

PRESENTER: City Attorney Rachel Morris

On May 31, 2024, Governor Polis signed Senate Bill 24-131 (SB-131), which enacted Colorado Revised Statute 18-12-105.3, "Unlawful carrying of a firearm in government buildings," effective July 1, 2024. The statute prohibits anyone, subject to limited exceptions, from carrying a firearm, whether openly or concealed, on the property of certain government buildings. Arvada City Hall is subject to the statute. The statute provides that a local government may enact an ordinance, regulation, or other law that permits a person to carry a firearm on government property that is otherwise subject to the statute.

City Council requested Staff to prepare for its consideration an ordinance which would "opt out" Arvada City Hall from the statute.

This ordinance would permit persons who hold a valid concealed handgun permit to lawfully carry a concealed handgun on Arvada City Hall property, subject to certain limitations with respect to the Municipal Court and Arvada Police Department headquarters. This ordinance does not negate or affect enforcement of existing Arvada City Code Section 62-71, which prohibits open carry of all firearms at any property owned by the City or the Apex Park and Recreation District.

The Arvada team provides for City Council's consideration CB24-010, An Ordinance Permitting Concealed Handgun Permit Holders to Lawfully Carry a Concealed Handgun at the Arvada City Hall Located at 8101 Ralston Road.

Financial Impact

There is not financial impact associated with this ordinance. Passage would revert firearms laws applicable to City Hall to those in place prior to July 1, 2024.

Background

Prior to July 1, 2024, a valid concealed handgun permit holder could lawfully carry a concealed handgun on Arvada City Hall property. Open carry of a handgun or other firearm at City Hall was, and continues to be, a violation of ACC 62-71. Carrying a concealed handgun or other firearm without a valid concealed handgun permit was, and remains, a violation of State law.

Under SB-131, most persons, other than peace officers and the City's contracted private security guards, are now prohibited from possessing a firearm on the Arvada City Hall property at 8101 Ralston Road, to include adjacent landscaped areas and parking lots. The provisions of the statute do not include facilities other than the City Hall property (i.e. the City Hall Annex, APD Community Stations, etc.).

This ordinance would "opt out" Arvada City Hall from the statute enacted by SB-131.

Discussion

This ordinance would exclude City Hall from the provisions of SB-131. It would essentially revert firearms laws applicable to City Hall to those in place before July 1, 2024. Staff have sought feedback from City employees who may have concerns or questions about SB-131 and this proposed ordinance. That feedback has been provided to Council separately.

Public Contact

Posting of the City Council agenda.

Commission Recommendation

Strategic Alignment

This ordinance relates to community safety at the City Hall facility.

Alternative Courses of Action

Recommendation for Action

The Arvada team provides for City Council's consideration CB24-010, An Ordinance Permitting Concealed Handgun Permit Holders to Lawfully Carry a Concealed Handgun at the Arvada City Hall Located at 8101 Ralston Road.

Suggested Motion:

I move that CB24-010, An Ordinance Permitting Concealed Handgun Permit Holders to Lawfully Carry a Concealed Handgun at the Arvada City Hall Located at 8101 Ralston Road, be (approved on final reading, numbered 4876 and ordered published by title only) (rejected).

Prepared by:
Chris Koch, CCO Admin

Reviewed by:
Gail Walker, Legal Specialist-Contracts 7/26/2024

Approved by:

Aaron Jacks, Assistant City Attorney 7/26/2024
Rachel Morris, City Attorney 8/6/2024
Linda Haley, Deputy City Manager 8/7/2024

Enclosure, exhibits & attachments required to support the report

COUNCIL BILL NO. 24-010
ORDINANCE NO. 4876

AN ORDINANCE PERMITTING CONCEALED HANDGUN PERMIT HOLDERS TO
LAWFULLY CARRY A CONCEALED HANDGUN AT THE ARVADA CITY HALL
LOCATED AT 8101 RALSTON ROAD

WHEREAS, on May 31, 2024, the Governor of the State of Colorado signed into law Senate Bill 2024-131 (SB 24-131); and

WHEREAS, SB 24-131 enacted C.R.S. § 18-12-105.3, Unlawful carrying of a firearm in government buildings, which prohibits carrying a firearm, whether openly or concealed, on the property of certain government buildings, including adjacent parking areas, effective July 1, 2024; and

WHEREAS, the Arvada City Hall located at 8101 Ralston Road is subject to the statutory criteria set forth at C.R.S. §§ 18-12-105.3(1)(b)(I-III) and (c); and

WHEREAS, C.R.S. § 18-12-105.3(4)(b) provides that a local government may enact an ordinance, regulation or other law that permits a person to carry a firearm on government property that is otherwise subject to the statute; and

WHEREAS, the City Council has determined it is the best interest of the City to permit persons who hold a valid concealed handgun permit to lawfully possess a concealed handgun on Arvada City Hall property, subject to certain limitations; and

WHEREAS, this ordinance shall not negate or otherwise affect the enforceability of existing Arvada City Code § 62-71, Open carry of firearms prohibited, which prohibits open carry of any firearm at all public buildings, facilities, and properties owned, operated, or leased by the City of Arvada or the Apex Park and Recreation District.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ARVADA, COLORADO:

Section 1. Section 62-71.5 of Article II, Miscellaneous Offenses, of Chapter 62, Offenses, of the Arvada City Code is hereby enacted to read as follows:

“Sec. 62-71.5. Valid concealed handgun permit holders permitted to carry concealed handgun on City Hall property- limitations.

- (a) *Legislative intent and purpose.* Section 18-12-105.3, C.R.S., effective July 1, 2024, provides that it is illegal for a person to carry a firearm in certain government buildings and adjacent parking areas. The Arvada City Hall is subject to the statute. The City Council has determined that it is in the best interest of the City and the health and safety of the public to permit persons who hold a valid concealed handgun permit to carry a concealed handgun at Arvada City Hall, subject to limitations applicable to certain areas

of the City Hall facility.

- (b) *Definitions.* The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Handgun means a pistol, revolver, or other firearm of any description, loaded or unloaded, from which any shot, bullet, or other missile can be discharged, the length of the barrel of which, not including any revolving, detachable, or magazine breech, does not exceed twelve inches.

- (c) *Authority.* C.R.S. 18-12-105.3(4)(b) provides that a local government may enact an ordinance, regulation, or other law that permits a person to carry a firearm on government property that is otherwise subject to the statute.

- (d) *Applicability.* This ordinance applies to valid concealed handgun permit holders who may carry a concealed handgun at the Arvada City Hall. This ordinance does not permit open carry of firearms at the Arvada City Hall otherwise in violation of section 62-71(c).

- (e) *Valid concealed handgun permit holders permitted to carry concealed handguns on City Hall property.* Notwithstanding any provision of Section 18-12-105.3(1)(b), C.R.S. to the contrary, a person who holds a valid concealed handgun permit may lawfully carry a concealed handgun on the Arvada City Hall property located at 8101 Ralston Road, subject to the limitations provided herein.

- (f) *Authority to prohibit firearms in certain areas of City Hall.* Notwithstanding subsection (e), the Presiding Municipal Judge shall have the authority to issue and enforce orders prohibiting firearms in the Municipal Courtroom at any time, and from the Municipal Court lobby during any time the Municipal Court is in session. Furthermore, the Chief of Police may prohibit possession of a firearm by anyone other than a peace officer in any secure portion of the Arvada City Hall property utilized by the Arvada Police Department.”

Section 2. Severability. Should any provision of this ordinance be declared by a court to be unconstitutional or invalid, such decision shall not affect the validity of the ordinance as a whole, or any part thereof, other than the part so declared unconstitutional or invalid. The City Council declares it would have adopted this ordinance and each part or parts hereof irrespective of the fact that any one part or parts be declared unconstitutional or invalid.

Section 3. This ordinance shall be effective five days after publication following final passage.

INTRODUCED, READ, AND ORDERED PUBLISHED this 5th day of August, 2024.

PASSED, ADOPTED AND APPROVED this 19th day of August, 2024.

Lauren Simpson, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:
Rachel A. Morris, City Attorney:

BY: _____

Publication Dates: August 8, 2024
 August 22, 2024

REDLINE/STRIKETHROUGH VERSION

FOR INFORMATION ONLY -- NOT PART OF THE ORDINANCE

Underlined indicates new material
~~Strikethrough~~ indicates deleted material

Written Public Comment for the Public Record

08/04/2024 8:04 PM (MDT)

All public comment submitted here will be shared with all City Councilmembers prior to the upcoming City Council Business Meeting. These comments will also be added to the public record.

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Email Address anjaliepasrich@gmail.com

Name Anjalie Pasrich

Address 12212 W 57th Dr

Phone Number 720-757-2424

Aug 5 Business Meeting

Public Hearings None

Your Comment/Testimony The allowance to carry firearms in the government buildings of Arvada is dangerous not only to the public but government officials as well. Anger surrounding public policy, or controversial issues may lead to confrontation that puts the risk of gun violence much higher. According to Brady, people living in homes with firearms are more than four times as likely than those living without firearms to be fatally shot showing that the presence of guns does not in fact lead to less violence or safety. Concealed carry in a government building is a risk to public safety. In January of 2024, an armed man inflicted damage to the Colorado Supreme Court building, further showing the danger in allowing guns in government building.

Thank you! A copy of your responses will be emailed to the address you provided.

City of Arvada City Council - Written Public Comment for the Public Record

07/24/2024 7:51 PM (MDT)

City of Arvada City Council - Written Public Comment for Public Hearings

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Email Address	leah3333@gmail.com
Name	Leah Hickler
Address	4204 West 61st Place, Arvada CO 80003
Phone Number	3039088799

Aug 5 Business Meeting

Public Hearings	None
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Your Comment/Testimony	As a teacher in a public charter school: It has come to my attention that city council is considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. Opting out would allow concealed carry of firearms on Arvada city property. I am asking you to follow the state's lead and keep SB24-131 in effect in Arvada. Allowing firearms on our city property does not make us safer, and surrounding communities agree. Westminster just rejected a similar proposal at their city council meeting on 7/22/24: https://www.denver7.com/news/local-news/westminster-city-council-hears-from-community-about-sensitive-spaces-gun-ban Data has proven that gun-free zones work; when Mother Jones looked at every mass shooting that did occur in a public place over a 30-year span, they were unable to find evidence that a single mass shooter chose to target a place because it prohibited guns (source: https://www.motherjones.com/politics/2013/04/gun-free-zones-mass-shootings/). More guns do not equal more safety; tragedies have proven this time and time again. SB24-131 makes our public spaces safer, and I am asking you to enforce it here in Arvada, please!
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Thank you! A copy of your responses will be emailed to the address you provided.

Written Public Comment for the Public Record

07/29/2024 9:47 AM (MDT)

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Email Address	mari_bart@hotmail.com
Name	Marí Vasel
Address	8644 W. 67th Pl. Arvada. 80004
Phone Number	7203756133

Aug 5 Business Meeting

Public Hearings	None
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Your Comment/Testimony	It has come to my attention that city council is considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. Opting out would allow concealed carry of firearms on Arvada city property. I am asking you to follow the state's lead and keep SB24-131 in effect in Arvada. Allowing firearms on our city property does not make us safer, and surrounding communities agree. Westminster just rejected a similar proposal at their city council meeting on 7/22/24: https://www.denver7.com/news/local-news/westminster-city-council-hears-from-community-about-sensitive-spaces-gun-ban
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Data has proven that gun-free zones work; when Mother Jones looked at every mass shooting that did occur in a public place over a 30-year span, they were unable to find evidence that a single mass shooter chose to target a place because it prohibited guns (source: <https://www.motherjones.com/politics/2013/04/gun-free-zones-mass-shootings/>). More guns do not equal more safety; tragedies have proven this time and time again.

SB24-131 makes our public spaces safer, and I am asking you to enforce it here in Arvada.

I strongly urge you to support SB24-131.

Sincerely,

Marí Vasel

Mother, substitute teacher, Arvada business owner (chamber member) & long time resident.

Thank you! A copy of your responses will be emailed to the address you provided.

Written Public Comment for the Public Record

07/31/2024 10:15 AM (MDT)

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Email Address catherinebherzog@gmail.com

Name Catherine Herzog

Address 8568 Ingalls Cir

Phone Number 9494249652

Aug 5 Business Meeting

Public Hearings None

Your Comment/Testimony Dear Arvada City Council,

It has come to my attention that city council is considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. Opting out would allow concealed carry of firearms on Arvada city property. I am asking you to follow the state's lead and keep SB24-131 in effect in Arvada. Allowing firearms on our city property does not make us safer, and surrounding communities agree. Westminster just rejected a similar proposal at their city council meeting on 7/22/24: <https://www.denver7.com/news/local-news/westminster-city-council-hears-from-community-about-sensitive-spaces-gun-ban>

Data has proven that gun-free zones work; when Mother Jones looked at every mass shooting that did occur in a public place over a 30-year span, they were unable to find evidence that a single mass shooter chose to target a place because it prohibited guns (source: <https://www.motherjones.com/politics/2013/04/gun-free-zones-mass-shootings/>). More guns do not equal more safety; tragedies have proven this time and time again.

SB24-131 makes our public spaces safer, and I am asking you to enforce it here in Arvada.

Thank you.

Catherine

Thank you! A copy of your responses will be emailed to the address you provided.

Written Public Comment for the Public Record

07/28/2024 1:47 PM (MDT)

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Email Address julianotl@msn.com

Name Leonard Juliano

Address 6037 Estes Court

Phone Number 303-420-5715

Aug 5 Business Meeting

Public Hearings None

Your Comment/Testimony It has come to my attention that city council is considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. Opting out would allow concealed carry of firearms on Arvada city property. I am asking you to follow the state's lead and keep SB24-131 in effect in Arvada. Allowing firearms on our city property does not make us safer, and surrounding communities agree. Westminster just rejected a similar proposal at their city council meeting on 7/22/24: <https://www.denver7.com/news/local-news/westminster-city-council-hears-from-community-about-sensitive-spaces-gun-ban>

Data has proven that gun-free zones work; when Mother Jones looked at every mass shooting that did occur in a public place over a 30-year span, they were unable to find evidence that a single mass shooter chose to target a place because it prohibited guns (source: <https://www.motherjones.com/politics/2013/04/gun-free-zones-mass-shootings/>). More guns do not equal more safety; tragedies have proven this time and time again. Think John Hurley

SB24-131 makes our public spaces safer, and I am asking you to enforce it here in Arvada

Thank you! A copy of your responses will be emailed to the address you provided.

City of Arvada City Council - Written Public Comment for the Public Record

07/25/2024 1:32 PM (MDT)

City of Arvada City Council - Written Public Comment for Public Hearings

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Email Address coesherrard@gmail.com

Name Frank Sherrard

Address 13426 W 60TH PL, Arvada CO 80004

Phone Number 3037267825

Aug 5 Business Meeting

Public Hearings None

Your Comment/Testimony

It has come to my attention that city council is considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. Opting out would allow concealed carry of firearms on Arvada city property. I am asking you to follow the state's lead and keep SB24-131 in effect in Arvada. Allowing firearms on our city property does not make us safer, and surrounding communities agree. Westminster just rejected a similar proposal at their city council meeting on 7/22/24: <https://www.denver7.com/news/local-news/westminster-city-council-hears-from-community-about-sensitive-spaces-gun-ban>

Data has proven that gun-free zones work; when Mother Jones looked at every mass shooting that did occur in a public place over a 30-year span, they were unable to find evidence that a single mass shooter chose to target a place because it prohibited guns (source: <https://www.motherjones.com/politics/2013/04/gun-free-zones-mass-shootings/>). More guns do not equal more safety; tragedies have proven this time and time again.

SB24-131 makes our public spaces safer, and I am asking you to enforce it here in Arvada.

Thank you! A copy of your responses will be emailed to the address you provided.

City of Arvada City Council - Written Public Comment for the Public Record

07/24/2024 12:28 PM (MDT)

City of Arvada City Council - Written Public Comment for Public Hearings

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Email Address	bobtheplanner@comcast.net
Name	Robert McGrath
Address	7210 Urban Dr
Phone Number	3036383867

Aug 5 Business Meeting

Public Hearings	None
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Your Comment/Testimony

It has come to my attention that city council is considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. Opting out would allow concealed carry of firearms on Arvada city property. I am asking you to follow the state's lead and keep SB24-131 in effect in Arvada. Allowing firearms on our city property does not make us safer, and surrounding communities agree. Westminster just rejected a similar proposal at their city council meeting on 7/22/24: <https://www.denver7.com/news/local-news/westminster-city-council-hears-from-community-about-sensitive-spaces-gun-ban>

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SB24-131 makes our public spaces safer, and I am asking you to enforce it here in Arvada.

I have testified in the past in Council Chambers but the presence of weapons would have a chilling effect on my willingness to engage in future comments. Do not give into intimidation by gun rights people.

Thank you! A copy of your responses will be emailed to the address you provided.

City of Arvada City Council - Written Public Comment for Public Hearings

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Email Address	elgeraci@gmail.com
Name	Lis Geraci
Address	6704 Ralston Road, Unit D, Arvada, CO 80027
Phone Number	3037469625

Aug 5 Business Meeting

Public Hearings	None
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Your Comment/Testimony

It has come to my attention that city council is considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. Opting out would allow concealed carry of firearms on Arvada city property. I am asking you to follow the state's lead and keep SB24-131 in effect in Arvada. Allowing firearms on our city property does not make us safer, and surrounding communities agree. Westminster just rejected a similar proposal at their city council meeting on 7/22/24: <https://www.denver7.com/news/local-news/westminster-city-council-hears-from-community-about-sensitive-spaces-gun-ban>

Data has proven that gun-free zones work; when Mother Jones looked at every mass shooting that did occur in a public place over a 30-year span, they were unable to find evidence that a single mass shooter chose to target a place because it prohibited guns (source: <https://www.motherjones.com/politics/2013/04/gun-free-zones-mass-shootings/>). More guns do not equal more safety; tragedies have proven this time and time again.

SB24-131 makes our public spaces safer, and I am asking you to enforce it here in Arvada.

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City of Arvada City Council - Written Public Comment for Public Hearings

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Email Address	todd.ruskell@gmail.com
Name	Todd Ruskell
Address	10990 W 65th Way
Phone Number	3033301031

Aug 5 Business Meeting

Public Hearings	None
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Your Comment/Testimony

It has come to my attention that the Arvada city council is considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. Opting out would allow concealed carry of firearms on Arvada city property. Please follow the state's lead and keep SB24-131 in effect in Arvada. Allowing firearms on our city property does not make us safer, and surrounding communities agree. Westminster just rejected a similar proposal at their city council meeting on 7/22/24: <https://www.denver7.com/news/local-news/westminster-city-council-hears-from-community-about-sensitive-spaces-gun-ban>

Data has proven that gun-free zones work. Mother Jones looked at every mass shooting that did occur in a public place over a 30-year span. They were unable to find evidence that a single mass shooter chose to target a place because it prohibited guns (source: <https://www.motherjones.com/politics/2013/04/gun-free-zones-mass-shootings/>). More guns do not equal more safety; tragedies have proven this time and time again.

SB24-131 makes our public spaces safer, and I am asking you to enforce it here in Arvada.

Thank you! A copy of your responses will be emailed to the address you provided.

City of Arvada City Council - Written Public Comment for Public Hearings

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Email Address	edecesaris@gmail.com
Name	Erin DeCesaris
Address	1509 QUAIL CT, Golden CO 80403
Phone Number	5709549063

Aug 5 Business Meeting

Public Hearings	None
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Your Comment/Testimony

I am the local leader for the Jefferson County chapter of Moms Demand Action, a grassroots . We have nearly 200 active members in Arvada, and I am submitting comment on their behalf.

It has come to my attention that city council is considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. I am asking you to follow the state's lead and keep SB24-131 in effect in Arvada. Allowing firearms on our city property does not make us safer, and surrounding communities agree.

I am not anti-gun. I am anti-gun violence, and believe we owe it to our community to ensure responsible gun ownership and safety. While we can't fix all the national gun violence issues, we can join our neighboring towns and cities to make all our communities a little safer - like Westminster, who just rejected a similar proposal at their city council meeting on 7/22/24:
<https://www.denver7.com/news/local-news/westminster-city-council-hears-from-community-about-sensitive-spaces-gun-ban>

More guns do not equal more safety; tragedies have proven this time and time again. Data has proven that gun-free zones work; when Mother Jones looked at every mass shooting that did occur in a public place over a 30-year span, they were unable to find evidence that a single mass shooter chose to target a place because it prohibited guns (source:
<https://www.motherjones.com/politics/2013/04/gun-free-zones-mass-shootings/>).

SB24-131 makes our public spaces safer, and I am asking you to enforce it in Arvada.

Thank you! A copy of your responses will be emailed to the address you provided.

City of Arvada City Council - Written Public Comment for the Public Record
07/24/2024 4:34 PM (MDT)

City of Arvada City Council - Written Public Comment for Public Hearings

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Email Address	robert.slay@gmail.com
Name	Robert Slay
Address	6128 Quail Court, Arvada, CO 80004
Phone Number	7202199515

Aug 5 Business Meeting

Public Hearings	None
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Your Comment/Testimony

It has come to my attention that city council may be considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. Opting out would allow concealed carry of firearms on Arvada city property. I am asking you to follow the state's lead and keep SB24-131 in effect in Arvada. Allowing firearms on our city property does not make us safer, and surrounding communities agree. Westminster just rejected a similar proposal at their city council meeting on 7/22/24.

Data has proven that gun-free zones work; when Mother Jones, a great resource, looked at every mass shooting that did occur in a public place over a 30-year span, they were unable to find evidence that a single mass shooter chose to target a place because it prohibited guns (source: <https://www.motherjones.com/politics/2013/04/gun-free-zones-mass-shootings/>). More guns do not equal more safety; tragedies have proven this time and time again.

SB24-131 makes our public spaces safer, and I am asking you to enforce it here in Arvada.

Thank you! A copy of your responses will be emailed to the address you provided.

City of Arvada City Council - Written Public Comment for the Public Record
07/24/2024 12:35 PM (MDT)

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Email Address mechelle.sherrard@gmail.com

Name Mechelle Sherrard

Address 13426 W 60TH PL

Phone Number 7207655109

Aug 5 Business Meeting

Public Hearings None

Your Comment/Testimony

It has come to my attention that city council is considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. Opting out would allow concealed carry of firearms on Arvada city property. I am asking you to follow the state's lead and keep SB24-131 in effect in Arvada. Allowing firearms on our city property does not make us safer, and surrounding communities agree. Westminster just rejected a similar proposal at their city council meeting on 7/22/24: <https://www.denver7.com/news/local-news/westminster-city-council-hears-from-community-about-sensitive-spaces-gun-ban>

Data has proven that gun-free zones work; when Mother Jones looked at every mass shooting that did occur in a public place over a 30-year span, they were unable to find evidence that a single mass shooter chose to target a place because it prohibited guns (source: <https://www.motherjones.com/politics/2013/04/gun-free-zones-mass-shootings/>). More guns do not equal more safety; tragedies have proven this time and time again.

SB24-131 makes our public spaces safer, and I am asking you to enforce it here in Arvada

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City of Arvada City Council - Written Public Comment for the Public Record

07/24/2024 1:11 PM (MDT)

City of Arvada City Council - Written Public Comment for Public Hearings

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Email Address erinrubenking@gmail.com

Name Erin Rubenking

Address 7129 Devinney Ct,
Arvada, CO 80004

Phone Number 7202618285

Aug 5 Business Meeting

Public Hearings None

Your Comment/Testimony

It has come to my attention that city council is considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. Opting out would allow concealed carry of firearms on Arvada city property. I am asking you to follow the state's lead and keep SB24-131 in effect in Arvada. Allowing firearms on our city property does not make us safer, and surrounding communities agree. Westminster just rejected a similar proposal at their city council meeting on 7/22/24: <https://www.denver7.com/news/local-news/westminster-city-council-hears-from-community-about-sensitive-spaces-gun-ban>

Data has proven that gun-free zones work; when Mother Jones looked at every mass shooting that did occur in a public place over a 30-year span, they were unable to find evidence that a single mass shooter chose to target a place because it prohibited guns (source: <https://www.motherjones.com/politics/2013/04/gun-free-zones-mass-shootings/>). More guns do not equal more safety; tragedies have proven this time and time again.

I have two little girls and it breaks my heart that we don't live in a place free of gun violence. This is an opportunity to make our community a little bit safer and SB24-131 makes our public spaces safer, and I am asking you to enforce it here in Arvada.

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City of Arvada City Council - Written Public Comment for the Public Record
07/24/2024 3:55 PM (MDT)

City of Arvada City Council - Written Public Comment for Public Hearings

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Email Address susan.carteruskell@gmail.com

Name Susan Carter Ruskell

Address 10990 W 65th Way, Arvada, CO 80004

Phone Number 3034038593

Aug 5 Business Meeting

Public Hearings None

Your Comment/Testimony Please do NOT opt out of SB24-131. Allowing firearms in sensitive areas decreases safety for everyone. We are already facing an unprecedented surge of threats against public officials for doing their jobs. Allowing firearms into the workplaces of the very people regularly threatened by extremists will not make any of them safer. We need to de-escalate the vitriol around political discourse - not add threats of violence with people bringing firearms into the debate space.

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City of Arvada City Council - Written Public Comment for the Public Record

07/24/2024 10:50 AM (MDT)

City of Arvada City Council - Written Public Comment for Public Hearings

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Email Address vanderwertcarly@gmail.com

Name Carly Vanderwert

Address 6742 Flower St

Phone Number 9523032001

Aug 5 Business Meeting

Public Hearings None

Your Comment/Testimony

It has come to my attention that city council is considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. Opting out would allow concealed carry of firearms on Arvada city property. I am asking you to follow the state's lead and keep SB24-131 in effect in Arvada. Allowing firearms on our city property does not make us safer, and surrounding communities agree. Westminster just rejected a similar proposal at their city council meeting on 7/22/24: <https://www.denver7.com/news/local-news/westminster-city-council-hears-from-community-about-sensitive-spaces-gun-ban>

Data has proven that gun-free zones work; when Mother Jones looked at every mass shooting that did occur in a public place over a 30-year span, they were unable to find evidence that a single mass shooter chose to target a place because it prohibited guns (source: <https://www.motherjones.com/politics/2013/04/gun-free-zones-mass-shootings/>). More guns do not equal more safety; tragedies have proven this time and time again.

SB24-131 makes our public spaces safer, and I am asking you to enforce it here in Arvada.

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Email Address	audreybeaver@gmail.com
Name	Audrey Beaver
Address	8354 W 77th Way
Phone Number	4024193934

Aug 5 Business Meeting

Public Hearings	None
Your Comment/Testimony	It has come to my attention that city council is considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. Opting out would allow concealed carry of firearms on Arvada city property. I am asking you to follow the state's lead and keep SB24-131 in effect in Arvada. Allowing firearms on our city property does not make us safer, and surrounding communities agree. Westminster just rejected a similar proposal at their city council meeting on 7/22/24: https://www.denver7.com/news/local-news/westminster-city-council-hears-from-community-about-sensitive-spaces-gun-ban Data has proven that gun-free zones work; when Mother Jones looked at every mass shooting that did occur in a public place over a 30-year span, they were unable to find evidence that a single mass shooter chose to target a place because it prohibited guns (source: https://www.motherjones.com/politics/2013/04/gun-free-zones-mass-shootings/). More guns do not equal more safety; tragedies have proven this time and time again. SB24-131 makes our public spaces safer, and I am asking you to enforce it here in Arvada.

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Email Address	josh@joshmaynard.co
Name	Josh Maynard
Address	10018 W 82nd Lane, Arvada, CO 80005
Phone Number	7208387251

Aug 5 Business Meeting

Public Hearings	None
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Your Comment/Testimony	As long-time residents of Arvada, it has come to our attention that city council is considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. Opting out would allow concealed carry of firearms on Arvada city property. This is a topic very close to so many in Arvada, as we experienced a mass shooting a couple years back in downtown Arvada which involved an armed civilian. I am asking you to follow the state's lead and keep SB24-131 in effect in Arvada. Allowing firearms on our city property does not make us safer, and surrounding communities agree. Westminster just rejected a similar proposal at their city council meeting on 7/22/24: https://www.denver7.com/news/local-news/westminster-city-council-hears-from-community-about-sensitive-spaces-gun-ban Data has proven that gun-free zones work; when Mother Jones looked at every mass shooting that did occur in a public place over a 30-year span, they were unable to find evidence that a single mass shooter chose to target a place because it prohibited guns (source: https://www.motherjones.com/politics/2013/04/gun-free-zones-mass-shootings/). More guns do not equal more safety; tragedies have proven this time and time again. SB24-131 makes our public spaces safer, and I am asking you to enforce it here in Arvada. For my family and the countless families that call Arvada home.
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Email Address	corriecarp@gmail.com
Name	Corinne Carpenter
Address	2563 S Kendrick Ct
Phone Number	2068835763

Aug 5 Business Meeting

Public Hearings	None
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Your Comment/Testimony	Dear Council Members, It has come to my attention that city council is considering a proposal to opt out of SB24-131: Prohibiting Carrying Firearms in Sensitive Spaces. Opting out would allow concealed carry of firearms on Arvada city property. As a mother, frequent visitor, student, and patron of your community, I am asking you to follow the state's lead and keep SB24-131 in effect in Arvada to keep me, my family, and community safer. Allowing firearms on city property does not make us safer, and surrounding communities agree. Westminster just rejected a similar proposal at their city council meeting on 7/22/24: https://www.denver7.com/news/local-news/westminster-city-council-hears-from-community-about-sensitive-spaces-gun-ban Data has proven that gun-free zones work; when Mother Jones looked at every mass shooting that did occur in a public place over a 30-year span, they were unable to find evidence that a single mass shooter chose to target a place because it prohibited guns (source: https://www.motherjones.com/politics/2013/04/gun-free-zones-mass-shootings/). More guns do not equal more safety; tragedies have proven this time and time again. SB24-131 makes our public spaces safer, and I am asking you to enforce it here in Arvada. Thank you for your time, Corinne Carpenter
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Thank you! A copy of your responses will be emailed to the address you provided.



REPORT FROM CITY COUNCIL

AGENDA ITEM
12.A.

DATE: August 19, 2024

SUBJECT: Council Committee Reports

Report in Brief

City Council members are appointed to various committees and boards as set out on the attached listing. As meetings are held, individual council members will report back to the full City Council any relevant discussions and issues that occurred.

Prepared by:
Chris Koch, CCO Admin

Lauren Simpson	Arvada City Attorney Committee Arvada Municipal Court/Judicial Committee Arvada Urban Renewal Authority Arvada Visitors Center Committee *Metro Mayors' Caucus Urban Drainage and Flood Control District West Connect Coalition E-470 Authority (Alternate) Olde Town Business Improvement (BID) (Alternate)
Shawna Ambrose	Adams County Regional Economic Partnership (ACREP) Arvada Audit Committee Bond Oversight Committee Jefferson County R-1 Schools Coordinating Committee Arvada Visitors Center Committee (Alternate)
Sharon Davis	Apex Coordinating Committee Arvada Municipal Court/Judicial Committee Arvada Parks Advisory Committee CML Policy Committee Jefferson Economic Development Council (JDEC) Denver Regional Council of Governments (DRCOG) (Alternate) E-470 Authority (Alternate) Jeffco Transportation Action & Advisory Group (JEFFTAAG) (Alternate)

	Jefferson County Community Corrections Board and West Connect Coalition (Alternate)
Lisa Feret	Arvada Chamber of Commerce Government Affairs Committee Arvada Fire Protection District Coordinating Committee Denver Regional Council of Governments (DRCOG) Housing Advisory Committee Jeffco Transportation Action & Advisory Group (JEFFTAAG) Jefferson County Community Corrections Board Smart City Advisory Committee Adams County Regional Economic Partnership (ACREP) (Alternate)
Bob Fifer	Apex Coordinating Committee Arvada City Attorney Committee Arvada Fire Protection District Coordinating Committee Arvada Transportation Committee Jefferson County R-1 Schools Coordinating Committee Jefferson Parkway Public Highway Authority Smart City Advisory Committee Northwest Parkway Authority (Alternate)
John Marriott	Arvada Economic Development Association Board Bond Oversight Committee Olde Town Business Improvement (BID)
Randy Moorman	Arvada Audit Committee Arvada Center for the Arts and Humanities Arvada Sustainability Committee CML Policy Committee Jefferson Parkway Public Highway Authority The Rocky Flats Stewardship Council Northwest Parkway Authority (Alternate)

*asterisked committees are not appointed by Council



REPORT TO CITY COUNCIL

AGENDA ITEM
13.A.

TO: THE HONORABLE CITY COUNCIL

DATE: August 19, 2024

SUBJECT: Review of Future Workshops and Presentations

Report in Brief

The City Manager's Office maintains a list of upcoming workshops and presentations to be scheduled for City Council meetings. During City Manager Reports, at the end of City Council business meetings, interim City Manager, Linda Haley, will review with City Council the tentative schedule and make any adjustments necessary.

Prepared by:
Chris Koch, CCO Admin

Reviewed by:

Approved by:

Rachel Morris, City Attorney 7/29/2024

Linda Haley, Deputy City Manager 7/29/2024

Enclosure, exhibits & attachments required to support the report

2024 CITY COUNCIL WORKSHOPS, STUDY SESSIONS, PRESENTATIONS AND RETREATS (TENTATIVE)

WORKSHOPS	Date	Lead
Water, Wastewater & Stormwater 2025 Rates/Fees	Aug 26	Utilities
Quarterly Bond Projects Updates The Public Works engineering team will provide the City Council with an update on the bond projects for streets and utilities.	Sept 23	PW
Budget Workshop - Work System Update	Sept 23	Finance
Final Water, Wastewater & Stormwater 2025 Rates/Fees	Sept 23	Utilities
Pay Plan/Additional Work System (if needed)	Oct 14	
Transportation System Plan The traffic team will present the outcomes of the Transportation System plan, including future development opportunities, transportation funding and financial strategies, and a capital improvement plan.	Oct 14	PW
Updated ADA Transition Plan The draft plan will be updated in a comprehensive document that outlines strategies and actions to ensure accessibility for individuals with disabilities, addressing areas of improvement and accommodating their needs.	Oct 28	PW
Parking Management Program - There are 11 managed parking zones in the City with one active enforcement area - Olde Town. The other zones are neighborhood permit parking near schools and parks. This workshop will provide background information on history of the City's parking operations and will present data on occupancy rates and enforcement trends for street parking and the parking garage in Olde Town. Analysis of paid parking will be discussed.	Oct 28	PW
	Nov 11	
Infrastructure Work System Annual Report - The Infrastructure Work System will share a status summary of progress towards City Council Strategic Results and 2024 metrics for work system services.	Dec 9	PW
PRESENTATIONS		
STUDY SESSIONS		
City of Arvada Greenhouse Gas Inventory@4 p.m.	July 22	VCN
BID and Chamber funding	TBD	
WORKSHOP TBD's		
Ballot Initiative Discussion	TBD	CMO
Pavement Management The Pavement Management Team will provide an update on 2023 and looking ahead to 2024 pavement projects.	TBD	PW
Right of Way Acquisition	TBD	CED
Water Infrastructure for Fire Protection	TBD	Utilities
Smart Meters Update	TBD	Utilities
Capital Campaign Update and Strategy Discussion	TBD	CMO/Fin
Community Engagement	TBD	CMO
Fleet Electrification	TBD	Utilities
Pre-Sentencing/One Small Step	TBD	Courts
Meyers Pool Provide City Council an update on the VCN's SR3: By 12/2025 develop a maintenance and reinvestment plan to ensure a sustainable, resilient and beautiful community of parks, trails, open	TBD	CMO

space and medians in alignment with our diverse, changing and growing community and VCN's SR3 Milestone [M3H] By 7/2024 replace Meyer's Pool with a new 50 meter natatorium.		
Financial Scenarios for Street Maintenance Deficit/Options for Increasing Maintenance Funds Engage City Council in a discussion around the current street maintenance needs and how the City might fund them. This will include revenue enhancements, future allocations and expenditure realignments.	TBD	PW/Fin/ CMO
Fiber Master Plan The Fiber Master Plan which is also called Arvada Fiber Optic Network (AFON), was first presented to City Council 4/10/2017. City Councils had set a strategic goal to build a fiber network to enable high speed/real-time connectivity to city facilities and assets in order to enhance city operations. This workshop is intended to brief City Council as to the progress of the AFON build out. Updates are intended to cover conduit installation progress, fiber installation progress, current co-locate opportunities, IGA member updates, and connections to current assets (city buildings, traffic, signals, utilities, radio, etc.).	TBD	PW
Problem Properties	TBD	P.D.
Activation of Historical Assets	TBD	VCN
Customer Service Philosophy	TBD	CMO
Ask Arvada Update	TBD	CMO
COUNCIL JOINT MEETINGS/DINNERS:		
Denver Water Board Apex Board AURA Board Arvada Center Board—Per Coop Agreement - Annually after October 1 of each year Jefferson Parkway Meeting with Jeffco and Broomfield Council Annual Retreat		