

# City Council Agenda

**Tuesday, August 15, 2023**  
**Council Chambers**  
**749 Main Street**  
**6:00 PM**

*Members of the public are welcome to attend and give comments remotely; however, the in-person meeting may continue even if technology issues prevent remote participation.*

- You can call in to **+1 408 638 0968 or 833 548 0282 (Toll Free)**, Webinar ID **#876 9127 0986**.
- You can log in via your computer. Please visit the City's website here to link to the meeting: [www.louisvilleco.gov/council](http://www.louisvilleco.gov/council)

*The Council will accommodate public comments during the meeting. Anyone may also email comments to the Council prior to the meeting at [Council@LouisvilleCO.gov](mailto:Council@LouisvilleCO.gov).*

## **1. CALL TO ORDER & ROLL CALL**

## **2. APPROVAL OF AGENDA**

## **3. PUBLIC COMMENTS ON ITEMS NOT ON THE AGENDA AND ITEMS ON THE CONSENT AGENDA**

Public comments are limited to 3 minutes per speaker. When several people wish to speak on the same position on a given item, Council requests they select a spokesperson to state that position.

## **4. CONSENT AGENDA**

The following items on the City Council Agenda are considered routine by the City Manager and shall be approved, adopted, accepted, etc., by motion of the City Council and voice vote unless the Mayor or a City Council person specifically requests an item be considered under "Regular Business." In such an event the item shall be removed from the "Consent Agenda" and Council action taken separately on said item in the order appearing on the Agenda. Those items so approved under the heading "Consent Agenda" will appear in the Council Minutes in their proper order.

**A. Approval of Bills**

**B. Approval of Minutes: February 7, 2023; August 1, 2023**

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### **Citizen Information**

If you wish to speak at the City Council meeting in person, please fill out a sign-up card and present it to the City Clerk at the meeting; if you are attending remotely, please use the "raise hand" icon to show you wish to speak in public comments.

Persons planning to attend the meeting who need sign language interpretation, translation services, assisted listening systems, Braille, taped material, or special transportation, should contact the City Clerk's Office (303.335.4536 or 303.335.4574) or [ClerksOffice@LouisvilleCO.gov](mailto:ClerksOffice@LouisvilleCO.gov). A forty-eight-hour notice is requested.

Si requiere una copia en español de esta publicación o necesita un intérprete durante la reunión del Consejo, por favor llame a la Ciudad al 303.335.4536 o 303.335.4574 o email [ClerksOffice@LouisvilleCO.gov](mailto:ClerksOffice@LouisvilleCO.gov).

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### **City of Louisville**

*City Council 749 Main Street Louisville CO 80027*  
*303.335.4536 (phone) [www.LouisvilleCO.gov](http://www.LouisvilleCO.gov)*

- C. Approval of Contract with Zayo for Service Renewal & Additional Redundant Internet Connections

**5. COUNCIL INFORMATIONAL COMMENTS ON PERTINENT ITEMS NOT ON THE AGENDA** (Council general comments are scheduled at the end of the Agenda.)

**6. CITY MANAGER'S REPORT**

**7. REGULAR BUSINESS**

**A. RESOLUTION NO. 48, SERIES 2023 – A RESOLUTION APPROVING AN INTERNAL DECARBONIZATION PLAN FOR THE CITY OF LOUISVILLE ORGANIZATION**

- Staff Presentation
- Public Comments (Please limit to three minutes each)
- Council Questions & Comments
- Action

**B. ORDINANCE NO. 1855, SERIES 2023 – AN ORDINANCE AMENDING CHAPTER 5.08 OF THE LOUISVILLE MUNICIPAL CODE CONCERNING ART GALLERY PERMITS – 2<sup>ND</sup> READING –PUBLIC HEARING (advertised *Daily Camera* 8/6/23)**

- Mayor Opens Public Hearing
- Staff Presentation
- Public Comments (Please limit to three minutes each)
- Council Questions & Comments
- Additional Public Comments
- Mayor Closes Public Hearing
- Action

**8. CITY ATTORNEY'S REPORT**

**9. COUNCIL COMMENTS, COMMITTEE REPORTS, AND IDENTIFICATION OF FUTURE AGENDA ITEMS**

**10. ADJOURN**

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CASH ACCOUNT: 001000 101001

WARRANT: 072723 07/27/2023

VENDOR	VENDOR NAME	PURPOSE	AMOUNT
14621	CHAD ROOT	MILEAGE 5/15/23 - 6/28/23	180.12
11476	DBC IRRIGATION SUPPLY	CUST #1268	71.40
1520	DRCOG	CUST ID #0013 MEM FY 23	5,150.00
15651	FACE MAGIC	FACE PAINTING - 7/4/23	1,200.00
5255	FAMILY SUPPORT REGISTRY	Payroll Run 1 - Warrant 0	173.53
14832	JOAN DESMET	SUPPLIES FOR THE LOVING H	143.33
9750	LEGALSHIELD	#22554 JUL 2023 EMPLOYEE	734.60
15650	LOUISVILLE WATERING HOLE, INC.	BUSINESS ASSISTANCE PACKA	2,226.16
99999	GENNY KLINE	MILEAGE 7/12/23 - 7/14/23	149.34
99999	APRIL KRONER	MILEAGE 6/8/23 - 6/28/23	50.57
99999	ANDRIG MILLER	UTILITY BILLING REFUND 82	244.14
99999	RACHEL WATTS	UTILITY BILLING REFUND 2	898.64
99999	KARINA YOUNG	REFUND LOUISVILLE REC CEN	175.00
14560	SAMEDAY OFFICE SUPPLY	ACCT #A12877	800.00
15649	VAIL LOUISVILLE, LLC	FACADE IMPROV PROGRAM	15,114.95
10884	WORD OF MOUTH CATERING INC	LUNCHES SERVED 7/20/23 -	3,206.75
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	16 INVOICES	WARRANT TOTAL	30,518.53
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CASH ACCOUNT: 001000 101001

WARRANT: 080323 08/03/2023

VENDOR	VENDOR NAME	PURPOSE	AMOUNT
15142	BRANDON SHUPICK	GOLF LESSONS 7/15/23 - 7/	4,890.03
15657	CITY OF LITTLETON, CO	REIMBURSE SAMMA FOX ICMA	945.00
13742	COLORADO DEPT OF LABOR & EMPLO	Q4 2022 QCEW CIPSEA MICRO	230.00
13914	DAWN BURGESS	MILEAGE & MEALS VAIL, CO	238.68
15659	HOUSE OF DIGIACOMO LLC	8/10/23 ITALIANS IN COLOR	125.00
15499	KATHRYN A MIHELIC	JULY 2023 PICKLEBALL	1,505.00
14801	MELENDEZ GOLF LLC	GOLF LESSONS 7/15/23 - 7/	6,856.50
99999	KELLY RAFTERY	REUND LOUISVILLE REC CENT	52.00
99999	JAN SAKAMOTO	REFUND LOUISVILLE REC CEN	88.00
99999	SARA ANDREWS	REFUND LOUISVILLE REC CEN	36.00
99999	CONNIE QUIGG	REFUND LOUISVILLE REC CEN	90.00
99999	RALPH DOANE	REFUND LOUISVILLE REC CEN	60.00
99999	KB WAYNE	REFUND LOUISVILLE REC CEN	73.00
99999	RAQUEL LJUNGBERG	MILEAGE 4/2/23 - 6/30/23	159.82
5178	PETTY CASH - KATHY MARTIN	PETTY CASH REIMBURSEMENTS	294.10
10951	PINNACOL ASSURANCE	POLICY #4206615	23,664.28
10884	WORD OF MOUTH CATERING INC	LUNCHES SERVED 7/27/23 -	2,827.50
3875	XCEL ENERGY	ACCT #53-1879600-8	174,579.74
13790	ZAYO GROUP LLC	ACCT #018253	9,226.35
13790	ZAYO GROUP LLC	ACCT #936665	877.26
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20 INVOICES		WARRANT TOTAL	226,818.26
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CASH ACCOUNT: 001000 101001

WARRANT: 081523 08/15/2023

VENDOR	VENDOR NAME	PURPOSE	AMOUNT
13547	A G WASSENAAR INC	231285F-2023 5/30/23 - 6	5,338.50
14121	ACUSHNET COMPANY	ACCT #US00002149\US000602	146.26
4160	ALARM DETECTION SYSTEMS, INC.	ACCT #804654 SEPT-NOV 2	313.44
1006	ALL CURRENT ELECTRIC INC	CUST #100789 ADD OUTLET	411.97
15310	ALS ENVIRONMENTAL	work order #23062189	350.00
15310	ALS ENVIRONMENTAL	WORK ORDER #23062192	350.00
15593	APPLIED CONCEPTS INC	CUST #062007	10,504.50
15653	APPLIED CONTROL EQUIPMENT, LLL	CUST #10374 ORDER #C115	1,977.11
15653	APPLIED CONTROL EQUIPMENT, LLL	CUST #10374 ORDER #C11	895.75
15322	AQUATIC RESOURCES	CUST #LOUIS ORDER #SC17	4,589.00
13579	ASSA ABLOY ENTRANCE SYSTEMS US	CONTRACT #525800074A CU	226.55
14841	AXE ROOFING LLC	Roofing Repairs to DPS-De	14,122.50
5001	BACKFLOW TECH	TEST OF BACKFLOW WASTEWAT	1,090.00
10801	BADGER METER INC	CUST #51080	106.80
500	BAKER AND TAYLOR	ACCT #415337 L121376 4 B0	21.65
500	BAKER AND TAYLOR	ACCT #415337 L121376 4 B0	63.85
15255	GREEN LANDSCAPE SOLUTION	Median Landscape Renovati	39,767.90
14251	BK TIRE INC	PARKS TRAILER TIRES #5374	504.92
14251	BK TIRE INC	PARKS TRAILER TIRES #5360	252.46
14251	BK TIRE INC	STREETS VEHICLE TIRES #32	901.00
14251	BK TIRE INC	TIRE DISPOSAL	130.00
14251	BK TIRE INC	PARKS EQUIPMENT TIRES #53	252.46
640	BOULDER COUNTY	06/02/23 CHAMBER DINNER	504.00
640	BOULDER COUNTY	6/3/23 TASTE OF LOUISVILL	864.00
15204	BOULDER COUNTY PUBLIC WORKS	JUNE 2023 GATE FEES	2,698.92
7706	BRANNAN SAND & GRAVEL CO LLC	JOB #1488	118.59
7706	BRANNAN SAND & GRAVEL CO LLC	JOB #1488	303.26
7706	BRANNAN SAND & GRAVEL CO LLC	JOB #1488	891.49
7706	BRANNAN SAND & GRAVEL CO LLC	JOB #1488	117.41
15098	BRIDGE HOUSE	JUNE 2023 RTW	9,369.54
9838	BRIGHTVIEW LANDSCAPE SERVICES	2023 Downtown Floral Disp	1,625.00

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CASH ACCOUNT: 001000 101001

WARRANT: 081523 08/15/2023

VENDOR	VENDOR NAME	PURPOSE	AMOUNT
1155	BROOMFIELD RENTALS INC	PROPANE ACCT #148	86.40
14502	C & L WATER SOLUTIONS INC	JOB #232140	1,032.00
10900	CAROL CREECH	ADA FEES	239.00
10773	CENTRIC ELEVATOR CORP	AUG 2023 ACCT #164400 CIT	354.09
10773	CENTRIC ELEVATOR CORP	8/1/23 PUBLIC LIBRARY AC	606.62
10773	CENTRIC ELEVATOR CORP	8/1/23 POLICE DEPT ACCT	314.70
10773	CENTRIC ELEVATOR CORP	8/1/23 REC CENTER ACCT #1	355.76
15352	CFM COMPANY	CUST ID #03260	605.00
15216	CHARLES D JONES CO	CUST #12341	1,285.71
15216	CHARLES D JONES CO	CUST #12341	24.03
15216	CHARLES D JONES CO	CUST #12341	171.79
15216	CHARLES D JONES CO	CUST #12341	1,973.93
2220	CHEMTRADE CHEMICALS US LLC	CUST #43552	6,327.29
2220	CHEMTRADE CHEMICALS US LLC	CUST #43552	6,313.03
4785	CINTAS CORPORATION #66	CUST #12522401	246.81
1120	COLORADO ANALYTICAL LABORATORI	WWTP INFLUENT WEEKLY	126.00
1120	COLORADO ANALYTICAL LABORATORI	WWTP INFLUENT WEEKLY	111.00
1120	COLORADO ANALYTICAL LABORATORI	WWTP UPSTREAM METALS QUAR	208.80
1120	COLORADO ANALYTICAL LABORATORI	WWTP REG 85 MONTHLY	391.51
1120	COLORADO ANALYTICAL LABORATORI	WWTP REUSE MONTHLY	184.50
1120	COLORADO ANALYTICAL LABORATORI	WWTP EFFLUENT LLHG QUARTE	93.60
1120	COLORADO ANALYTICAL LABORATORI	WWTP INFLUENT QUARTERLY	295.20
1120	COLORADO ANALYTICAL LABORATORI	WWTP MANHOLE 20741	295.20
1120	COLORADO ANALYTICAL LABORATORI	CTC LIFT STATION	295.20
1120	COLORADO ANALYTICAL LABORATORI	WWTP INFLUENT WEEKLY	126.00
1120	COLORADO ANALYTICAL LABORATORI	CITY OF LOUISVILLE CO0107	171.00
1120	COLORADO ANALYTICAL LABORATORI	CITY OF LOUISVILLE CO0107	101.30
1120	COLORADO ANALYTICAL LABORATORI	CITY OF LOUISVILLE CO0107	32.40
1120	COLORADO ANALYTICAL LABORATORI	CITY OF LOUISVILLE CO0107	162.00
1120	COLORADO ANALYTICAL LABORATORI	CITY OF LOUISVILLE CO0107	126.00
1120	COLORADO ANALYTICAL LABORATORI	CITY OF LOUISVILLE CO0107	126.00
1120	COLORADO ANALYTICAL LABORATORI	WATER PLANT QUARTERLY IPP	538.20
13820	COLORADO BARRICADE CO	CUST #838536	3,520.00
13820	COLORADO BARRICADE CO	CUST #838536	184.50
11264	COLORADO DEPT OF PUBLIC HEALTH	CUST #VC00000000411269 R	810.00
11264	COLORADO DEPT OF PUBLIC HEALTH	CUST #VC00000000251748	1,850.00
11264	COLORADO DEPT OF PUBLIC HEALTH	CUST #VC00000000412343	298.00
15414	CORA BRACHO-TROCONIS	7/19/23 - 8/2/23 KIDS AR	168.00

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CASH ACCOUNT: 001000 101001

WARRANT: 081523 08/15/2023

VENDOR	VENDOR NAME	PURPOSE	AMOUNT
13162	CORE & MAIN LP	ACCT #103796	2,763.29
13162	CORE & MAIN LP	ACCT #103796	453.60
15304	CORONA ENVIRONMENTAL CONSULTIN	CONSULTING SERVICES THROU	11,707.00
9973	CPS DISTRIBUTORS INC	ACCT #12010000	223.78
9973	CPS DISTRIBUTORS INC	ACCT #12010000	1,352.59
9973	CPS DISTRIBUTORS INC	ACCT #12010000	235.00
9973	CPS DISTRIBUTORS INC	ACCT #12010000	59.37
9973	CPS DISTRIBUTORS INC	ACCT #12010000	288.34
13370	CRIBARI LAW FIRM, PC	JUNE 2023 PROSECUTING ATT	3,724.50
15190	DANIEL LASHER	JULY 2023 INTERPRETING SE	1,504.52
15036	DAVID J. THROWER	JULY 2023 MUNICIPAL JUDGE	2,800.00
14182	DAWSON INFRASTRUCTURE SOLUTION	Jet truck repairs	11,840.39
11476	DBC IRRIGATION SUPPLY	CUST #1268	440.61
11476	DBC IRRIGATION SUPPLY	CUST #1268	219.55
15149	DENALI WATER SOLUTIONS LLC	CUST #1120056	2,150.14
15149	DENALI WATER SOLUTIONS LLC	CUST #1120056	2,064.40
15149	DENALI WATER SOLUTIONS LLC	CUST #1120056	990.22
14469	DESIGNSCAPES COLORADO	Community Park Irrigation	3,222.00
13929	DHE COMPUTER SYSTEMS LLC	ACCT #C00004557	1,504.00
13929	DHE COMPUTER SYSTEMS LLC	ACCT #C00004557	13,311.84
13929	DHE COMPUTER SYSTEMS LLC	ACCT #C00004557 ORDER #	693.36
14920	E-Z-GO DIVISION OF TEXTRON INC	CUST #700012259	3,137.51
15409	ERTEC ENVIRONMENTAL SYSTEMS, L	CURB INLET GUARD	904.86
14606	FEHR AND PEERS	5/27/23 - 6/30/23 PROJ #	5,487.50
14606	FEHR AND PEERS	PROJ #DN23-0766.00	78,024.30
13615	FELSBURG HOLT & ULLEVIG INC	2/1/23 - 6/30/23 DILLON R	830.00
13683	FIRST CHOICE COFFEE SERVICES	CUST #C271512	70.00
14070	FORENSIC TRUTH VERIFICATION GR	PRE-EMPLOYMENT M.MONTEZ	155.00
15614	FUSION INSPECTION & CONSULTANT	JULY 2023 INSPECTIONS	5,359.68
7113	GALLS LLC	ACCT #1001752120 J.DANI	266.28
1175	GEORGE T SANDERS COMPANY	CUST #5415	189.64

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CASH ACCOUNT: 001000 101001

WARRANT: 081523 08/15/2023

VENDOR	VENDOR NAME	PURPOSE	AMOUNT
11504	GOODLAND CONSTRUCTION INC	4/26/23 - 5/27/23 104TH	135,745.02
2310	GRAINGER	ACCT #802864512	215.96
246	GREEN MILL SPORTSMAN CLUB	OFFICER TRAINING/QUALIFYI	150.00
15655	GREENWOOD WILDLIFE REHABILITAT	CAMP INHOUSE FIELD TRIP	35.00
2405	HACH COMPANY	ACCT #094039	982.68
2405	HACH COMPANY	ACCT #094039	56.50
2415	HARCROS CHEMICALS INC	CUST #01605450-GOL10	931.00
2415	HARCROS CHEMICALS INC	CUST #01605450-GOL10	931.00
2415	HARCROS CHEMICALS INC	CUST #01605450-GOL10	931.00
15146	HAZEN AND SAWYER DPC	SERVICES THROUGH 6/30/23	85,304.50
15209	HOLLAR TREE CO LLC	Remove and prune willows	3,825.00
15209	HOLLAR TREE CO LLC	7/18/23 EMERGENCY TREE RE	800.00
13642	HUBER TECHNOLOGY INC	CUST #114276	1,609.60
15619	ICON ENGINEERING INC	SERV THROUGH 6/30/23 23-	4,859.24
15228	IDEMIA IDENTITY & SECURITY USA	CUST ID #BD-13863	1,325.00
15329	IMEG CORP	6/26/23 - 7/23/23	1,080.00
15261	WESTERN PAPER DISTRIBUTORS	CUST ID #244097	29.93
15261	WESTERN PAPER DISTRIBUTORS	CUST ID #244097	135.31
15261	WESTERN PAPER DISTRIBUTORS	CUST ID #244097	140.33
15261	WESTERN PAPER DISTRIBUTORS	CUST ID #244097	188.57
15261	WESTERN PAPER DISTRIBUTORS	CUST ID #244097	118.24
15261	WESTERN PAPER DISTRIBUTORS	CUST ID #244097	567.31
15261	WESTERN PAPER DISTRIBUTORS	CUST ID #244097	288.94
15261	WESTERN PAPER DISTRIBUTORS	CUST ID #244097	480.96
15261	WESTERN PAPER DISTRIBUTORS	CUST ID #244097	2,027.36
15261	WESTERN PAPER DISTRIBUTORS	CUST ID #244097	240.99
15261	WESTERN PAPER DISTRIBUTORS	CUST ID #244097	180.52
15261	WESTERN PAPER DISTRIBUTORS	CUST ID #244097	704.12
15261	WESTERN PAPER DISTRIBUTORS	CUST ID #244097	113.15
15261	WESTERN PAPER DISTRIBUTORS	CUST ID #244097	244.34
15261	WESTERN PAPER DISTRIBUTORS	CUST ID #244097	81.50
14089	INDIGO WATER GROUP LLC	8/23/23 - 8/24/23 ACTIVAT	400.00
9710	INDUSTRIAL CHEMICALS CORP	CUST #4218000	525.00
9710	INDUSTRIAL CHEMICALS CORP	CUST #4218000	784.00



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CASH ACCOUNT: 001000 101001

WARRANT: 081523 08/15/2023

VENDOR	VENDOR NAME	PURPOSE	AMOUNT
2615	INGRAM LIBRARY SERVICES INC	ACCT #2050766	259.69
2615	INGRAM LIBRARY SERVICES INC	ACCT #2050766	318.59
2615	INGRAM LIBRARY SERVICES INC	ACCT #2050766	179.54
2615	INGRAM LIBRARY SERVICES INC	ACCT #2050766	302.80
2615	INGRAM LIBRARY SERVICES INC	ACCT #2050766	282.18
2615	INGRAM LIBRARY SERVICES INC	ACCT #2050766	222.57
2615	INGRAM LIBRARY SERVICES INC	ACCT #2050766	282.50
2615	INGRAM LIBRARY SERVICES INC	ACCT #2050766	264.42
2615	INGRAM LIBRARY SERVICES INC	ACCT #2050766	523.62
2615	INGRAM LIBRARY SERVICES INC	ACCT #2050766	146.60
2615	INGRAM LIBRARY SERVICES INC	ACCT #2050766	246.42
2615	INGRAM LIBRARY SERVICES INC	ACCT #2050766	253.26
2615	INGRAM LIBRARY SERVICES INC	ACCT #2050766	252.18
2615	INGRAM LIBRARY SERVICES INC	ACCT #2050766	788.77
15189	INNOVATIVE UTILITY SOLUTIONS L	3" ZENNER, 3" SPOOL, FLAN	1,426.90
13280	INSIGHT PUBLIC SECTOR INC	CUST #10669545 Microsoft	40,578.12
13280	INSIGHT PUBLIC SECTOR INC	ACCT #10669545 8/1/23 -	2,384.70
13280	INSIGHT PUBLIC SECTOR INC	ACCT #10669545 7/1/23 -	99.35
13280	INSIGHT PUBLIC SECTOR INC	ACCT #10669545 8/1/23	155.52
13280	INSIGHT PUBLIC SECTOR INC	ACCT #10669545 7/19/23 -	51.04
13280	INSIGHT PUBLIC SECTOR INC	ACCT #10669545 6/1/23 -	31.04
10558	INTERMOUNTAIN VALVE & CONTROLS	CUST #160000855	1,846.73
14706	INTERNATIONAL DIOXCIDE INC	CUST #LOUISCO	15,211.68
11289	JVA INC	JUNE 2023 MASTER PLAN SUP	984.00
14273	KAREN MORALES	WEBSITE AUDIT SERVICES	416.25
2360	KELLY PC	JULY 2023 PROFESSIONAL SE	26,408.40
14219	KIMLEY-HORN AND ASSOCIATES INC	SERV THROUGH 6/30/23 20	7,277.50
14219	KIMLEY-HORN AND ASSOCIATES INC	SERV THROUGH 6/30/23 WTP	24,600.00
15631	KINETIC TRAILS, LLC	REFUND HYDRANT METER RENT	2,250.00
8002	KINSCO LLC	ORDER #0014889 RYAN SMI	234.97
8002	KINSCO LLC	ORDER #0014878 RYAN SMI	500.00
8002	KINSCO LLC	ORDER #0014889 RYAN SMI	99.99
8002	KINSCO LLC	ORDER #0014884 LOGAN RO	107.48
15357	LANGUAGE USA, INC.	4/10/23 TRANSLATION SERVI	1,850.00
15357	LANGUAGE USA, INC.	7/20/23 TRANSLATION SERVI	118.43
13782	LEXISNEXIS RISK DATA MANAGEMEN	BILLING ID #1236104	328.75
3070	LL JOHNSON DISTRIBUTING CO	CUST #158907	213.48

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CASH ACCOUNT: 001000 101001

WARRANT: 081523 08/15/2023

VENDOR	VENDOR NAME	PURPOSE	AMOUNT
3070	LL JOHNSON DISTRIBUTING CO	CUST #158907	448.10
3070	LL JOHNSON DISTRIBUTING CO	CUST #158907	54.70
14068	MAC EQUIPMENT INC	CONTACT ID #394	77.85
14068	MAC EQUIPMENT INC	CONTACT ID #394	395.50
14068	MAC EQUIPMENT INC	CONTACT ID #394	1,167.98
14068	MAC EQUIPMENT INC	CONTACT ID #394	6,199.75
14068	MAC EQUIPMENT INC	CONTACT ID #394	779.60
14071	MARY RITTER	H2O 7/6/23 - 7/27/23	793.80
15549	MCKINSTRY ESSENTION, LLC	JULY 2023 JOB #207020	13,292.00
13654	METRO PAVERS INC	2023 Street Resurfacing P	141,634.36
15618	MID CITY CORPORATION	6/28/23 - 7/21/23 2023 W	134,322.05
14484	MIDWEST TAPE LLC	CUST #2000008778	89.98
14290	MILE HIGH TURFGRASS LLC	FOLIAR FERTILIZER & FUNGI	1,965.00
14918	MIZUNO USA INC - NDC	CUST ACCT #161027	1,693.12
14918	MIZUNO USA INC - NDC	CUST ACCT #161027	1,188.50
14768	MOJOS CLEANING SERVICES INC	JULY 2023 PARKS MONTHLY J	3,300.00
14768	MOJOS CLEANING SERVICES INC	AUGUST 2023 MONTHLY JANIT	33,533.41
11061	MOUNTAIN PEAK CONTROLS INC	PROJECT #29439	2,700.00
11061	MOUNTAIN PEAK CONTROLS INC	TROUBLESHOOT GOLD COURSE	1,506.25
10541	MTH FAMILY LLC	Plant material for parks	1,130.15
15613	NATIONAL COATINGS, INC	JULY 2023 WWTP Clarifier	90,833.21
13926	NICOLETTI-FLATER ASSOCIATES PL	JULY 2023 COUNSELING	1,100.00
3630	NORTH STAR CLEANING SERVICES L	8/2/23 WINDOW CLEANING MU	315.00
3630	NORTH STAR CLEANING SERVICES L	WINDOW CLEANING CLUBHOUSE	285.00
3630	NORTH STAR CLEANING SERVICES L	WINDOW CLEANING CITY HALL	560.00
3630	NORTH STAR CLEANING SERVICES L	WINDOW CLEANING 1955 WASH	220.00
3630	NORTH STAR CLEANING SERVICES L	WINDOW CLEANING BLDG A&B	1,055.00
3630	NORTH STAR CLEANING SERVICES L	WINDOW CLEANING 7000 MARS	115.00
3630	NORTH STAR CLEANING SERVICES L	WINDOW CLEANING POLICE/CO	540.00
3630	NORTH STAR CLEANING SERVICES L	WINDOW CLEANING LIBRARY 7	2,850.00
3630	NORTH STAR CLEANING SERVICES L	WINDOW CLEANING 801 GRANT	165.00
3630	NORTH STAR CLEANING SERVICES L	WINDOW CLEANING 1805 HWY	455.00
14673	NORTHWEST ROOFING	1955 N. WASHINGTON	1,850.00
14673	NORTHWEST ROOFING	7000 MARSHALL RD	1,450.00

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VENDOR	VENDOR NAME	PURPOSE	AMOUNT
14673	NORTHWEST ROOFING	Recreation Center Roof Re	494,519.10
99999	ELECTRICKSERVICE, LLC	REF PERMIT #MEP-4628-2023	80.18
99999	SPRING CREEK HEATING AND COOLI	REFUND PERMIT #MEP-4646-2	247.97
99999	NEIL NORDBY	MARSHALL FIRE USE TAX CR	16,881.25
99999	STEIG & JONI SEAWARD	MARSHALL FIRE USE TAX CR	11,369.39
99999	DOMINICK MANCINE	MARSHALL FIRE USE TAX CR	10,251.00
99999	HAMMERSKIL HOMES	REFUND HYDRANT METER RENT	2,450.00
99999	INSITUFORM	REFUND HYDRANT METER RENT	1,500.00
15377	PC SERVICE SPECIALISTS, INC.	HP DESIGNJET PLOTTER	65.00
15254	NORTHSIDE TTC	JUNE & JULY 2023 TABLE TE	2,800.80
15660	POWER EQUIPMENT COMPANY	CUST #BP0000584	117.88
14160	PRECISE MRM LLC	CUST #679650	320.00
15234	RAWHIDE FIRE HOSE	THR-RSL 5" x 10'	428.00
14844	REPUBLIC SERVICES INC #535	ACCT #3-0535-0109715	4,122.38
14844	REPUBLIC SERVICES INC #535	ACCT #3-0535-9535390	121,105.74
14844	REPUBLIC SERVICES INC #535	ACCT #3-0535-7999998	217.81
13419	ROADSAFE TRAFFIC SYSTEMS CORP	CUST #11720 2023 Signs	132.00
15296	ROCKSOL CONSULTING GROUP INC	JUNE 2023 104th St Trai	7,431.05
15071	ROCKY MOUNTAIN FREEDOM PAINTIN	Painting for damaged Mars	4,200.00
15528	RYDERS PUBLIC SAFETY LLC	LOGAN ROLLINS	81.95
15528	RYDERS PUBLIC SAFETY LLC	RYAN SMITH	129.80
14560	SAMEDAY OFFICE SUPPLY	ACCT #A12877	132.50
14560	SAMEDAY OFFICE SUPPLY	ACCT #A12877	86.10
14560	SAMEDAY OFFICE SUPPLY	ACCT #A12877	8.60
14560	SAMEDAY OFFICE SUPPLY	ACCT #A12877	155.00
4230	SEACREST GROUP	CHRONIC BIOMONITORING TES	2,380.00
15497	SENERGY PETROLEUM LLC	CUST #84626	4,110.00
15497	SENERGY PETROLEUM LLC	CUST ID #84628	1,624.68
4300	SILL-TERHAR MOTORS INC	2023 Mach E Premium Elect	56,590.00
14818	SITEONE LANDSCAPE SUPPLY LLC	CUST #290129	1,484.00
14593	SMARTFORCE TECHNOLOGIES, INC	BULLETIN WIZARD-ANN SOFT	479.40
13059	SPRAGUE PEST SOLUTIONS	7/12/23 ART CENTER	75.00

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VENDOR	VENDOR NAME	PURPOSE	AMOUNT
13059	SPRAGUE PEST SOLUTIONS	7/17/23 CITY HALL	82.50
13059	SPRAGUE PEST SOLUTIONS	7/26/23 CITY SERVICES	145.00
13059	SPRAGUE PEST SOLUTIONS	7/12/23 LIBRARY	75.00
13059	SPRAGUE PEST SOLUTIONS	7/12/23 MUSEUM	75.00
13059	SPRAGUE PEST SOLUTIONS	7/20/23 POLICE DEPT	75.00
13059	SPRAGUE PEST SOLUTIONS	7/20/23 REC/SENIOR CENTER	105.00
13059	SPRAGUE PEST SOLUTIONS	7/12/23 WASTE WATER TRMT	82.50
13059	SPRAGUE PEST SOLUTIONS	7/14/23 WATER TRMT	82.50
13059	SPRAGUE PEST SOLUTIONS	7/12/23 WATER TRMT N WT N	82.50
13059	SPRAGUE PEST SOLUTIONS	7/12/23 1805 HIGHWAY 42	225.00
14396	SPRONK WATER ENGINEERS INC	6/5/23 - 6/30/23 PROJ #3	18,083.75
13538	SQUARE STATE SKATE	SKATEBOARDING JUNE & JULY	983.50
10508	STERICYCLE INC	CUST #3000085165	30.00
7619	TED D MILLER & ASSOCIATES INC	REAGENTS	1,170.17
15625	TOP GOLF USA, INC.	ACCT #1030920 Toptracer	4,200.00
13603	TOSHIBA BUSINESS SOLUTIONS INC	CUST #TOB5E4W	292.53
13603	TOSHIBA BUSINESS SOLUTIONS INC	CUST #TOB5E4W	167.99
6609	TRAVELERS	POL #31N22649-ZLP ACCT	53.80
6707	TRI STATE OIL RECLAIMERS INC	USED OIL DISPOSAL	50.00
15320	TRIPLE M CONSTRUCTION LLC	2022 Concrete Replacement	229,810.70
14065	TYLER TECHNOLOGIES INC	cust #49183	7,725.00
4765	UNCC	JULY 2023 TRANSMISSIONS &	1,520.91
14532	UNITED REFRIGERATION INC	CUST #1141892	52.32
14532	UNITED REFRIGERATION INC	CUST #1141892	52.32
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	13.28
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	255.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	255.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	255.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	220.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	10.50
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	10.50
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	50.03
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	50.03
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	65.56
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	193.88

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VENDOR	VENDOR NAME	PURPOSE	AMOUNT
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	193.88
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	254.05
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	193.88
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	193.88
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	254.05
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	193.88
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	254.05
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	260.25
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	260.25
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	260.25
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	260.25
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	260.25
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	260.25
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	260.25
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	65.56
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	50.03
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	260.25
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	254.05
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	193.88
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	33.87
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	260.25
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	254.05
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	193.88
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	254.05
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	260.25
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	193.88
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	254.05
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	260.25
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	315.00
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	260.25
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	260.25
11087	UNITED SITE SERVICES OF COLORA	CUST #ACT-00002162	33.87
14373	WEIFIELD GROUP CONTRACTING INC	SCWTP Monitoring Cabinet	15,350.00

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VENDOR	VENDOR NAME	PURPOSE	AMOUNT
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	321 INVOICES	WARRANT TOTAL	2,149,997.12
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**CITY OF LOUISVILLE**  
**PURCHASE CARD SUMMARY**  
**STATEMENT PERIOD 6/22/23 - 7/20/23**

SUPPLIER	SUPPLIER LOCATION	CARDHOLDER	DEPARTMENT	TRANS DATE	AMOUNT
1-800-PACK-RAT (L102)	800-722-5728	KEVIN FREY	FACILITIES	06/23/2023	258.99
1800 GOT JUNK	DENVER	KEVIN FREY	FACILITIES	07/18/2023	1,040.00
2511 - CPS DSTRBTRS	ARVADA	DAVID DEAN	GOLF COURSE	07/14/2023	2,058.48
ABSUPPLYNET	7738093667	GREG VENETTE	WATER	07/11/2023	411.05
ACCRA GOLF	SYMMES TOWNSH	DAVID BARIL	GOLF COURSE	07/12/2023	81.95
ADOBE *ACROPRO SUBS	4085366000	KURT KOWAR	PUBLIC WORKS	07/08/2023	29.99
ADOBE *STOCK	4085366000	EMILY HOGAN	CITY MANAGER	07/01/2023	79.99
AGENA ASTROPRODUCTS	5622154473	BENJAMIN WHITE-PATARIN	PARKS	07/10/2023	465.00
AIR CARE COLORADO BROO	BROOMFIELD	MASON THOMPSON	OPERATIONS	07/10/2023	25.00
AIR CARE COLORADO BROO	BROOMFIELD	MASON THOMPSON	OPERATIONS	07/06/2023	25.00
AIR CARE COLORADO BROO	BROOMFIELD	MASON THOMPSON	OPERATIONS	07/05/2023	25.00
ALL COPY PRODUCTS	PAYMENTS@ALLC	KATHY MARTIN	REC CENTER	06/28/2023	248.46
ALLDATA	800-859-3282	MASON THOMPSON	OPERATIONS	07/02/2023	125.00
AMAZON.COM AMZN.COM/BI	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	06/27/2023	52.89
AMAZON.COM*0G6X52CG3 A	AMZN.COM/BILL	KATIE BEASLEY	REC CENTER	07/13/2023	45.79
AMAZON.COM*118HF8JL3 A	AMZN.COM/BILL	JILL SIEWERT	LIBRARY	07/11/2023	59.88
AMAZON.COM*4O2F192A3 A	AMZN.COM/BILL	BENJAMIN FRANCISCO	OPERATIONS	07/12/2023	24.95
AMAZON.COM*9U4G27VC3 A	AMZN.COM/BILL	ABBY MCNEAL	PARKS	07/13/2023	72.21
AMAZON.COM*DT0OK1JR3 A	AMZN.COM/BILL	KELLY THARP	OPERATIONS	07/02/2023	65.94
AMAZON.COM*EE0GU38Y3 A	AMZN.COM/BILL	DANNY WEIONSTOCK	REC CENTER	07/07/2023	23.56
AMAZON.COM*G92UO7N63 A	AMZN.COM/BILL	ROBERT ZUCCARO	PLANNING	06/30/2023	54.09
AMAZON.COM*H579X91K3 A	AMZN.COM/BILL	JOHN KIPP	WASTEWATER	07/08/2023	32.50
AMAZON.COM*HC6FZ8FN3 A	AMZN.COM/BILL	JILL SIEWERT	LIBRARY	07/11/2023	35.98
AMAZON.COM*MI3KM91G3 A	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	07/04/2023	9.90
AMAZON.COM*QD50O41K3 A	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	06/24/2023	52.89
AMAZON.COM*R08QC75S3 A	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	06/27/2023	449.00
AMAZON.COM*S97542YJ3 A	AMZN.COM/BILL	MARLA OLSON	PARKS	06/21/2023	9.99
AMAZON.COM*SL40630N3 A	AMZN.COM/BILL	PATRICIA MORGAN	REC CENTER	07/19/2023	82.69
AMAZON.COM*WR77Y2W93 A	AMZN.COM/BILL	MINDY OLKJER	PUBLIC WORKS	07/05/2023	2.80
AMAZON.COM*XX04M9IV3 A	AMZN.COM/BILL	JOHN KIPP	WASTEWATER	07/17/2023	19.27
AMAZON.COM*Y073L0G43 A	AMZN.COM/BILL	KATIE TOFTE	REC CENTER	07/17/2023	9.60
AMERICAN RED CROSS	800-733-2767	NICK PAPPAS	REC CENTER	07/18/2023	84.00
AMERICAN RED CROSS	800-733-2767	DANNY WEIONSTOCK	REC CENTER	07/13/2023	975.00
AMERICAN RED CROSS	800-733-2767	DANIEL BIDLEMEN	REC CENTER	06/26/2023	216.00

AMERICAN WATER COLLEGE	VALLEY MILLS	GREG VENETTE	WATER	06/30/2023	179.99
AMERICAN WATER COLLEGE	VALLEY MILLS	JOHN KIPP	WASTEWATER	06/29/2023	229.99
AMK PIKES PEAK COMPLEX	COLORADO SPGS	KATIE BEASLEY	REC CENTER	07/12/2023	16.74
AMZN MKTP US AMZN.COM/	AMZN.COM/BILL	GREG VENETTE	WATER	07/04/2023	70.34
AMZN MKTP US AMZN.COM/	AMZN.COM/BILL	GREG VENETTE	WATER	07/04/2023	8.99
AMZN MKTP US*6R6CU53O3	AMZN.COM/BILL	JAMES VAUGHAN	REC CENTER	06/30/2023	11.99
AMZN MKTP US*816OZ6TO3	AMZN.COM/BILL	JOHN KIPP	WASTEWATER	07/18/2023	38.39
AMZN MKTP US*9177Z5R93	AMZN.COM/BILL	GREG VENETTE	WATER	07/05/2023	27.38
AMZN MKTP US*B24I18CT3	AMZN.COM/BILL	PATRICIA MORGAN	REC CENTER	07/14/2023	11.39
AMZN MKTP US*B54EC6843	AMZN.COM/BILL	GREG VENETTE	WATER	07/11/2023	43.70
AMZN MKTP US*DB0XD5B33	AMZN.COM/BILL	JOHN KIPP	WASTEWATER	06/29/2023	69.25
AMZN MKTP US*F56LQ3XD3	AMZN.COM/BILL	GREG VENETTE	WATER	07/01/2023	70.34
AMZN MKTP US*FT3T70LX3	AMZN.COM/BILL	PATRICIA MORGAN	REC CENTER	07/18/2023	229.56
AMZN MKTP US*GW6RS1963	AMZN.COM/BILL	PAUL BORTH	REC CENTER	06/30/2023	29.59
AMZN MKTP US*KR5042FL3	AMZN.COM/BILL	GREG VENETTE	WATER	07/11/2023	256.83
AMZN MKTP US*LH3EY7Z33	AMZN.COM/BILL	GREG VENETTE	WATER	07/05/2023	9.98
AMZN MKTP US*NR98A5C63	AMZN.COM/BILL	GREG VENETTE	WATER	07/01/2023	8.99
AMZN MKTP US*R35R605M3	AMZN.COM/BILL	GIGI YANG	LIBRARY	07/01/2023	35.70
AMZN MKTP US*SB4N52C73	AMZN.COM/BILL	AMANDA PERERA	REC CENTER	06/26/2023	106.71
AMZN MKTP US*U99BF7VW3	AMZN.COM/BILL	NICK PROSSER	IT	07/13/2023	29.69
AMZN MKTP US*WX8T31IV3	AMZN.COM/BILL	JOSH GILBERTSON	IT	06/30/2023	15.78
AMZN MKTP US	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	07/11/2023	85.39
AMZN MKTP US	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	07/08/2023	112.81
AMZN MKTP US	AMZN.COM/BILL	PATRICIA MORGAN	REC CENTER	07/07/2023	33.50
AMZN MKTP US	AMZN.COM/BILL	KELLY THARP	OPERATIONS	06/21/2023	89.97
AMZN MKTP US*0097R7QB3	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	06/27/2023	109.99
AMZN MKTP US*125YF47F3	AMZN.COM/BILL	BARBARA NICKERSON	HUMAN RESOURCES	06/21/2023	12.99
AMZN MKTP US*133UH9SW3	AMZN.COM/BILL	BELAN CARRILLO	PUBLIC WORKS	07/10/2023	18.62
AMZN MKTP US*1I5PK9YP3	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	06/27/2023	99.28
AMZN MKTP US*244RA7YP3	AMZN.COM/BILL	MINDY OLKJER	PUBLIC WORKS	06/30/2023	86.97
AMZN MKTP US*245ZY9XS3	AMZN.COM/BILL	BENJAMIN FRANCISCO	OPERATIONS	06/27/2023	49.99
AMZN MKTP US*2Z9342F53	AMZN.COM/BILL	JOHN KIPP	WASTEWATER	06/28/2023	6.98
AMZN MKTP US*3313S4573	AMZN.COM/BILL	DAVID DEAN	GOLF COURSE	07/20/2023	33.97
AMZN MKTP US*3G0GY1813	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	06/27/2023	21.97
AMZN MKTP US*411NN4YC3	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	06/29/2023	70.94
AMZN MKTP US*465DR1FD3	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	07/12/2023	28.76
AMZN MKTP US*485Y82DE3	AMZN.COM/BILL	EMILY HOGAN	CITY MANAGER	06/28/2023	13.69
AMZN MKTP US*5I9JO1OG3	AMZN.COM/BILL	ERICA SCHMITT	LIBRARY	06/30/2023	24.97
AMZN MKTP US*5L4P537E3	AMZN.COM/BILL	JOHN KIPP	WASTEWATER	06/28/2023	33.11



AMZN MKTP US*6H0D32FT3	AMZN.COM/BILL	ROBERT ZUCCARO	PLANNING	06/30/2023	29.99
AMZN MKTP US*7632P2ZU3	AMZN.COM/BILL	JILL SIEWERT	LIBRARY	07/10/2023	74.52
AMZN MKTP US*857880KI3	AMZN.COM/BILL	NICK PROSSER	IT	07/13/2023	30.39
AMZN MKTP US*8A48Q8C33	AMZN.COM/BILL	BENJAMIN FRANCISCO	OPERATIONS	07/14/2023	71.98
AMZN MKTP US*8D7BP7U83	AMZN.COM/BILL	BENJAMIN FRANCISCO	OPERATIONS	07/10/2023	112.69
AMZN MKTP US*8F1Y06G93	AMZN.COM/BILL	GREG VENETTE	WATER	07/06/2023	35.99
AMZN MKTP US*8M25X9RQ3	AMZN.COM/BILL	DAVID BARIL	GOLF COURSE	06/29/2023	95.88
AMZN MKTP US*8Q4NQ3GU3	AMZN.COM/BILL	DAWN BURGESS	CITY MANAGER	06/21/2023	21.65
AMZN MKTP US*8Z5LM6RV3	AMZN.COM/BILL	LANCE PFEIFER	GOLF COURSE	07/13/2023	23.17
AMZN MKTP US*9353E60X3	AMZN.COM/BILL	BENJAMIN FRANCISCO	OPERATIONS	07/17/2023	42.25
AMZN MKTP US*AE9366XC3	AMZN.COM/BILL	DAVID BARIL	GOLF COURSE	07/04/2023	5.89
AMZN MKTP US*AK5PE17P3	AMZN.COM/BILL	ERICA SCHMITT	LIBRARY	07/20/2023	94.44
AMZN MKTP US*AY3796NC3	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	07/20/2023	68.73
AMZN MKTP US*BH5SX04G3	AMZN.COM/BILL	GREG VENETTE	WATER	07/07/2023	18.89
AMZN MKTP US*CK2MN3YK3	AMZN.COM/BILL	MARLA OLSON	PARKS	07/13/2023	44.40
AMZN MKTP US*DU7TP1AY3	AMZN.COM/BILL	ERICA SCHMITT	LIBRARY	07/13/2023	16.96
AMZN MKTP US*E88PA2FF3	AMZN.COM/BILL	GREG VENETTE	WATER	07/20/2023	71.90
AMZN MKTP US*EL16P2Y73	AMZN.COM/BILL	DEVIN MADIGAN	WASTEWATER	07/11/2023	121.96
AMZN MKTP US*EW6YL7FK3	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	06/28/2023	19.62
AMZN MKTP US*EX8AP2OM3	AMZN.COM/BILL	JOHN KIPP	WASTEWATER	06/29/2023	119.00
AMZN MKTP US*EZ3LR81M3	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	07/12/2023	74.98
AMZN MKTP US*FF0B79MI3	AMZN.COM/BILL	ROBERT ZUCCARO	PLANNING	07/01/2023	15.90
AMZN MKTP US*FS2FR20H3	AMZN.COM/BILL	PEGGY NORRIS	LIBRARY	07/18/2023	7.99
AMZN MKTP US*FW62M2873	AMZN.COM/BILL	BENJAMIN FRANCISCO	OPERATIONS	07/17/2023	273.40
AMZN MKTP US*G14UA7RD3	AMZN.COM/BILL	DAVID BARIL	GOLF COURSE	07/05/2023	33.98
AMZN MKTP US*GD8O18UF3	AMZN.COM/BILL	PAMELA LEMON	REC CENTER	07/18/2023	37.60
AMZN MKTP US*GQ9A56T93	AMZN.COM/BILL	PATRICIA MORGAN	REC CENTER	06/28/2023	34.00
AMZN MKTP US*GV89X0CX3	AMZN.COM/BILL	KEVIN FREY	FACILITIES	06/23/2023	66.49
AMZN MKTP US*HR4359OW3	AMZN.COM/BILL	PATRICIA MORGAN	REC CENTER	06/22/2023	33.50
AMZN MKTP US*HY6E76PM3	AMZN.COM/BILL	JEFF OWENS	WATER	07/03/2023	371.90
AMZN MKTP US*J04G07BY3	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	07/05/2023	26.99
AMZN MKTP US*JP8Z931I3	AMZN.COM/BILL	JAMES VAUGHAN	REC CENTER	07/06/2023	17.06
AMZN MKTP US*KL1D545O3	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	06/29/2023	113.38
AMZN MKTP US*KV59H5Y93	AMZN.COM/BILL	ERICA SCHMITT	LIBRARY	07/20/2023	9.99
AMZN MKTP US*LR2FZ26Z3	AMZN.COM/BILL	JESSE DEGRAW	REC CENTER	06/23/2023	129.99
AMZN MKTP US*M66ZB6SC3	AMZN.COM/BILL	BENJAMIN FRANCISCO	OPERATIONS	07/12/2023	30.72
AMZN MKTP US*MN3FB33U3	AMZN.COM/BILL	BELAN CARRILLO	PUBLIC WORKS	07/12/2023	24.98
AMZN MKTP US*MO5RE2HW3	AMZN.COM/BILL	ROBERT ZUCCARO	PLANNING	06/30/2023	18.48
AMZN MKTP US*N06HM2ZO3	AMZN.COM/BILL	PATRICIA MORGAN	REC CENTER	06/28/2023	47.40

AMZN MKTP US*NE9Z28PL3	AMZN.COM/BILL	BELAN CARRILLO	PUBLIC WORKS	07/12/2023	90.06
AMZN MKTP US*NK9V11Q63	AMZN.COM/BILL	KEVIN FREY	FACILITIES	07/14/2023	118.28
AMZN MKTP US*NX1I35FS3	AMZN.COM/BILL	ROBERT ZUCCARO	PLANNING	07/01/2023	102.65
AMZN MKTP US*O83U90853	AMZN.COM/BILL	PAMELA LEMON	REC CENTER	07/18/2023	58.44
AMZN MKTP US*OV0OR0Y03	AMZN.COM/BILL	MARLA OLSON	PARKS	07/11/2023	35.97
AMZN MKTP US*PG92R1KW3	AMZN.COM/BILL	PAMELA LEMON	REC CENTER	07/09/2023	71.04
AMZN MKTP US*PI0773E53	AMZN.COM/BILL	ROBERT ZUCCARO	PLANNING	06/30/2023	19.98
AMZN MKTP US*QV17S71K3	AMZN.COM/BILL	ERICA SCHMITT	LIBRARY	06/27/2023	81.17
AMZN MKTP US*QV8H50RK3	AMZN.COM/BILL	JAMES VAUGHAN	REC CENTER	07/06/2023	46.00
AMZN MKTP US*QV9T413K3	AMZN.COM/BILL	PEGGY NORRIS	LIBRARY	07/11/2023	8.90
AMZN MKTP US*RB2CT0793	AMZN.COM/BILL	JOSH GILBERTSON	IT	07/17/2023	29.18
AMZN MKTP US*RG0MC3IM3	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	06/29/2023	754.08
AMZN MKTP US*S44I46W23	AMZN.COM/BILL	JULIE SEYDEL	REC CENTER	07/01/2023	184.08
AMZN MKTP US*SR97Y6N23	AMZN.COM/BILL	JOHN KIPP	WASTEWATER	07/03/2023	34.66
AMZN MKTP US*SY5AK58P3	AMZN.COM/BILL	PATRICIA MORGAN	REC CENTER	06/23/2023	12.99
AMZN MKTP US*TW8IY1IS0	AMZN.COM/BILL	JOHN KIPP	WASTEWATER	07/10/2023	13.89
AMZN MKTP US*TW8K91PO0	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	07/06/2023	109.99
AMZN MKTP US*UH8ES9C83	AMZN.COM/BILL	PATRICIA MORGAN	REC CENTER	06/22/2023	130.65
AMZN MKTP US*UY3TZ6E43	AMZN.COM/BILL	BENJAMIN FRANCISCO	OPERATIONS	06/29/2023	19.88
AMZN MKTP US*VP8Q739J3	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	06/26/2023	218.53
AMZN MKTP US*WM4OQ47M3	AMZN.COM/BILL	KEVIN FREY	FACILITIES	07/17/2023	131.94
AMZN MKTP US*XW0EP6023	AMZN.COM/BILL	PATRICIA MORGAN	REC CENTER	06/21/2023	27.00
AMZN MKTP US*XY1T61FO3	AMZN.COM/BILL	JAMES VAUGHAN	REC CENTER	07/07/2023	6.57
AMZN MKTP US*YD4TP2AJ3	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	07/01/2023	23.30
AMZN MKTP US*YP6DP9EU3	AMZN.COM/BILL	JOHN KIPP	WASTEWATER	07/01/2023	63.96
AMZN MKTP US*ZY9L92C03	AMZN.COM/BILL	LINDSEY WITTY	REC CENTER	07/15/2023	58.49
ARROWHEAD AWARDS	BOULDER	LIGEA FERRARO	CITY MANAGER	07/11/2023	55.00
ARROWSTAGELINES.COM	OMAHA	KATHY MARTIN	REC CENTER	07/18/2023	1,429.00
ARROWSTAGELINES.COM	OMAHA	KATIE BEASLEY	REC CENTER	07/18/2023	1,202.00
ARROWSTAGELINES.COM	OMAHA	KATHY MARTIN	REC CENTER	07/18/2023	1,202.00
ARROWSTAGELINES.COM	OMAHA	KATIE BEASLEY	REC CENTER	07/06/2023	1,556.00
ASCAP LICENSE FEE	800-505-4052	ERICA SCHMITT	LIBRARY	06/26/2023	436.25
AWWA.ORG	303-347-6197	GREG VENETTE	WATER	07/08/2023	265.00
AMAZON.COM*368Z55SG3	AMZN.COM/BILL	JILL SIEWERT	LIBRARY	07/19/2023	53.85
AMAZON.COM*7A3KE4943	AMZN.COM/BILL	JILL SIEWERT	LIBRARY	07/13/2023	159.77
AMAZON.COM*8T17Z0VL3	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	07/01/2023	149.99
AMAZON.COM*8Y33D3PT3	AMZN.COM/BILL	JILL SIEWERT	LIBRARY	07/18/2023	19.94
AMAZON.COM*9E8PB9RD3	AMZN.COM/BILL	KATIE BEASLEY	REC CENTER	06/27/2023	8.99
AMAZON.COM*9G6M21VB3	AMZN.COM/BILL	MARLA OLSON	PARKS	07/02/2023	9.88

AMAZON.COM*B37MS1Z83	AMZN.COM/BILL	GREG VENETTE	WATER	07/12/2023	34.77
AMAZON.COM*C19EM70L3	AMZN.COM/BILL	JILL SIEWERT	LIBRARY	06/26/2023	79.84
AMAZON.COM*D14SC17I3	AMZN.COM/BILL	MARLA OLSON	PARKS	06/29/2023	15.35
AMAZON.COM*DS6YX39O3	AMZN.COM/BILL	JILL SIEWERT	LIBRARY	07/19/2023	14.98
AMAZON.COM*EU6XA3NA3	AMZN.COM/BILL	GREG VENETTE	WATER	07/08/2023	105.99
AMAZON.COM*EV3CB3UM3	AMZN.COM/BILL	TANYA SCOTT	FINANCE	06/28/2023	10.22
AMAZON.COM*F95156RV3	AMZN.COM/BILL	ERICA SCHMITT	LIBRARY	07/12/2023	69.00
AMAZON.COM*GA2OI2AS3	AMZN.COM/BILL	DEVIN MADIGAN	WASTEWATER	07/12/2023	88.00
AMAZON.COM*GT03U6RI3	AMZN.COM/BILL	NICK PROSSER	IT	07/08/2023	195.98
AMAZON.COM*HM6026P83	AMZN.COM/BILL	ERICA SCHMITT	LIBRARY	07/12/2023	6.73
AMAZON.COM*IL3Y47GN3	AMZN.COM/BILL	AMANDA PERERA	REC CENTER	07/20/2023	31.80
AMAZON.COM*KE0BT6QX3	AMZN.COM/BILL	KATIE TOFTE	REC CENTER	07/03/2023	14.19
AMAZON.COM*LT2TR4YC3	AMZN.COM/BILL	JILL SIEWERT	LIBRARY	07/11/2023	32.33
AMAZON.COM*ME2PM2YR3	AMZN.COM/BILL	JILL SIEWERT	LIBRARY	06/28/2023	137.21
AMAZON.COM*NZ5N79O63	AMZN.COM/BILL	KATIE BEASLEY	REC CENTER	06/29/2023	6.95
AMAZON.COM*O101X3DH3	AMZN.COM/BILL	JILL SIEWERT	LIBRARY	07/11/2023	14.99
AMAZON.COM*OB05X5PZ3	AMZN.COM/BILL	JILL SIEWERT	LIBRARY	06/21/2023	91.82
AMAZON.COM*OO5N06SA3	AMZN.COM/BILL	AMANDA PERERA	REC CENTER	07/19/2023	35.72
AMAZON.COM*PH4FY1NV3	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	07/06/2023	531.56
AMAZON.COM*RH1CH2ZV3	AMZN.COM/BILL	DAVID DEAN	GOLF COURSE	06/29/2023	181.30
AMAZON.COM*TZ8K41UE0	AMZN.COM/BILL	DAVID BARIL	GOLF COURSE	07/14/2023	54.99
AMAZON.COM*UH0CV48I3	AMZN.COM/BILL	JILL SIEWERT	LIBRARY	07/11/2023	12.69
AMAZON.COM*V40T86J13	AMZN.COM/BILL	SANDRA ANDRETICH	OPERATIONS	07/06/2023	27.50
AMAZON.COM*WA8KL07F3	AMZN.COM/BILL	GREG VENETTE	WATER	07/20/2023	159.88
AMAZON.COM*X38N55WD3	AMZN.COM/BILL	JILL SIEWERT	LIBRARY	07/11/2023	19.99
AMAZON.COM*YH4LS7K73	AMZN.COM/BILL	LESLIE RINGER	HUMAN RESOURCES	06/22/2023	32.98
AMAZON.COM*Z23W890H3	AMZN.COM/BILL	ABBY MCNEAL	PARKS	07/17/2023	92.61
AMAZON.COM*Z68A11IT3	AMZN.COM/BILL	JOHN KIPP	WASTEWATER	07/07/2023	27.24
BARON BARCLAY BRIDGE S	800-2742221	KATIE BEASLEY	REC CENTER	07/06/2023	408.06
BESTBUYCOM806772704690	888BESTBUY	SANDRA ANDRETICH	OPERATIONS	07/06/2023	37.11
BESTBUYCOM806772704690	888BESTBUY	SANDRA ANDRETICH	OPERATIONS	06/28/2023	392.07
BESTBUYCOM806772704690	888BESTBUY	SANDRA ANDRETICH	OPERATIONS	06/27/2023	65.29
BESTBUYCOM806773770698	888BESTBUY	SANDRA ANDRETICH	OPERATIONS	07/07/2023	599.00
BIZWEST-DIGITAL	FORT COLLINS	ROBERT ZUCCARO	PLANNING	07/12/2023	9.00
BLACKJACK PIZZA - CO 0	LOUISVILLE	SHANE MAHAN	OPERATIONS	07/13/2023	65.95
BLAUER MANUFACTURING	BOSTON	SANDRA ANDRETICH	OPERATIONS	06/21/2023	219.97
BOBCAT COMMERCE CITY	COMMERCE CITY	MASON THOMPSON	OPERATIONS	06/30/2023	262.68
BRIDGEPAY NETWORK SOLU	407-9008967	TANYA SCOTT	FINANCE	07/17/2023	35.00
BROOKS GREASE SERVICE	918-836-1772	DAVID BARIL	GOLF COURSE	07/06/2023	475.00

BROOMFIELD RENTALS INC	BROOMFIELD	BRANDON COX	OPERATIONS	07/10/2023	21.63
BROOMFIELD RENTALS INC	BROOMFIELD	BRANDON COX	OPERATIONS	07/10/2023	21.63
BT CO MUNICIPAL CLER	5082324600	GENEVIEVE KLINE	CITY CLERK	07/19/2023	763.85
BT CO MUNICIPAL CLER	5082324600	GENEVIEVE KLINE	CITY CLERK	07/19/2023	105.79
BUTTERFLY PAVILION ONL	WESTMINSTER	ALEXIS SMITH	REC CENTER	06/26/2023	16.56
CALENDLY	AVONDALE ESTA	DAVID BARIL	GOLF COURSE	07/09/2023	15.00
CASFM	DENVER	CAMERON FOWLKES	PUBLIC WORKS	07/12/2023	551.29
CATALYSTS DISC EXPERTS	ROCKWALL	MEAGAN BROWN	HUMAN RESOURCES	07/13/2023	562.50
CENTER COPY PRINTING	303-4406000	LIGEA FERRARO	CITY MANAGER	07/14/2023	61.19
CENTER COPY PRINTING	303-4406000	MINDY OLKJER	PUBLIC WORKS	07/06/2023	44.20
CENTER COPY PRINTING	303-4406000	MINDY OLKJER	PUBLIC WORKS	06/21/2023	426.17
CHILDHEALTHCONNECTION	FORT COLLINS	AMANDA PERERA	REC CENTER	07/16/2023	80.00
CHIPOTLE 0114	LOUISVILLE	JEN KENNEY	POLICE	06/21/2023	35.25
CITY OF LONGMONT	LONGMONT	AMANDA PERERA	REC CENTER	07/12/2023	200.00
CLUBCONNECT	9136615569	LINDSEY WITTY	REC CENTER	07/01/2023	149.00
CO BOULDER CO SVS	DENVER	AMANDA PERERA	REC CENTER	06/28/2023	174.59
CO GOVT SERVICES	DENVER	AMANDA PERERA	REC CENTER	06/28/2023	36.55
CO MOTOR VEH SERV EMV	DENVER	MASON THOMPSON	OPERATIONS	07/11/2023	12.84
CO PARK* CO	WHEAT RIDGE	KATIE BEASLEY	REC CENTER	06/26/2023	439.00
CO PARK* CO	WHEAT RIDGE	PATRICIA MORGAN	REC CENTER	06/21/2023	489.00
CO SECRETARY STATE FEE	DENVER	BELAN CARRILLO	PUBLIC WORKS	06/27/2023	10.00
CO SECRETARY STATE FEE	DENVER	BELAN CARRILLO	PUBLIC WORKS	06/27/2023	10.00
COAL CREEK ACE HARDWAR	LOUISVILLE	GREG VENETTE	WATER	07/17/2023	15.18
COAL CREEK ACE HARDWAR	LOUISVILLE	JOHN KIPP	WASTEWATER	07/05/2023	9.56
COLORADO ANALYTICAL	BRIGHTON	MINDY OLKJER	PUBLIC WORKS	07/18/2023	58.00
COLORADO GOLF AND TURF	303-761-3332	LANCE PFEIFER	GOLF COURSE	06/30/2023	321.95
COLORADO GOLF ASSN	303-3664653	PAMELA PETERSON-HOHS	GOLF COURSE	07/10/2023	129.00
COMCAST CABLE COMM	800-COMCAST	ERICA SCHMITT	LIBRARY	07/13/2023	111.95
COMCAST CABLE COMM	800-COMCAST	LESLIE RINGER	HUMAN RESOURCES	07/07/2023	436.11
COMCAST CABLE COMM	800-COMCAST	MARLA OLSON	PARKS	06/28/2023	541.26
COMCAST DENVER	800-266-2278	PAMELA PETERSON-HOHS	GOLF COURSE	07/20/2023	111.71
COMCAST DENVER	800-266-2278	JILL SIEWERT	LIBRARY	07/13/2023	129.89
COSTAR GROUP INC	WASHINGTON	AUSTIN BROWN	CITY MANAGER	07/08/2023	447.93
CRAIGSLIST.ORG	415-399-5200	ALINA KIRCHNER	HUMAN RESOURCES	07/06/2023	45.00
CRAIGSLIST.ORG	415-399-5200	ALINA KIRCHNER	HUMAN RESOURCES	07/06/2023	25.00
CRAIGSLIST.ORG	415-399-5200	PENNY FORD	HUMAN RESOURCES	07/01/2023	25.00
CRAIGSLIST.ORG	415-399-5200	PENNY FORD	HUMAN RESOURCES	07/01/2023	25.00
CS* ELVSBOI6HA	LOUISVILLE	LIGEA FERRARO	CITY MANAGER	07/13/2023	85.00
CANVA* 03848-22977557	KENT	ERICA SCHMITT	LIBRARY	07/16/2023	12.99

COLORADO BALLET	DENVER	KATIE TOFTE	REC CENTER	07/14/2023	680.00
DAILY CAMERA	BOULDER	EMILY HOGAN	CITY MANAGER	07/11/2023	14.99
DEMCO INC	800-9624463	JILL SIEWERT	LIBRARY	07/07/2023	114.26
DENVER POST CIRCULATIO	DENVER	EMILY HOGAN	CITY MANAGER	06/26/2023	14.99
DEPOT SQUARE CITY PARK	BOULDER	KAYLA BETZOLD	CITY MANAGER	07/18/2023	3.00
DOLLARTREE	BROOMFIELD	LANA FAUVER	REC CENTER	07/17/2023	62.50
DOMINO'S 6286	LOUISVILLE	JEN KENNEY	POLICE	06/28/2023	45.95
DONORBOX DONATION PLAT	ALEXANDRIA	BRIDGET BACON	LIBRARY	07/03/2023	2.06
DROPBOX*LP625KT5XS29	DROPBOX.COM	EMILY HOGAN	CITY MANAGER	07/18/2023	11.99
E 470 EXPRESS TOLLS	AURORA	TANYA SCOTT	FINANCE	07/17/2023	29.65
E 470 EXPRESS TOLLS	AURORA	SANDRA ANDRETICH	OPERATIONS	06/29/2023	6.50
EB CONFLUENCE COLORAD	8014137200	HANNAH MILLER	CITY MANAGER	07/16/2023	5.35
EB CONFLUENCE COLORAD	8014137200	HANNAH MILLER	CITY MANAGER	07/14/2023	80.35
ECO PROMOTIONAL PRODUC	LIBERTYVILLE	KAYLA BETZOLD	CITY MANAGER	06/27/2023	376.68
ECONOMIC DEVELOPERS CO	PALISADE	APRIL KRONER	PLANNING	07/11/2023	275.00
ELDORADO ARTESIAN SPRI	LOUISVILLE	LESLIE RINGER	HUMAN RESOURCES	07/06/2023	94.70
EZCATERMAD GREENS	8004881803	MEAGAN BROWN	HUMAN RESOURCES	07/19/2023	283.00
EZCATERMODERN MARKET	8004881803	MEAGAN BROWN	HUMAN RESOURCES	07/10/2023	419.03
FASTENAL COMPANY 01COB	LAFAYETTE	JOHN KIPP	WASTEWATER	06/28/2023	40.13
FASTSIGNS 371501	BROOMFIELD	ERICA SCHMITT	LIBRARY	07/04/2023	91.00
FEDEX OFFIC74200007427	LOUISVILLE	MIKE MILLER	POLICE	07/11/2023	416.70
FIRST CHOICE-BOYER S C	303-9649400	KELLY THARP	OPERATIONS	07/12/2023	70.00
FIRST CHOICE-BOYER S C	303-9649400	GREG VENETTE	WATER	07/12/2023	144.89
FIRST CHOICE-BOYER S C	303-9649400	DAVID DEAN	GOLF COURSE	07/12/2023	54.88
GAYLORD OPRYLAND	AURORA	LIGEA FERRARO	CITY MANAGER	06/25/2023	737.32
GAYLORD OPRYLAND	AURORA	LIGEA FERRARO	CITY MANAGER	06/26/2023	7.87
GAYLORD OPRYLAND	AURORA	LIGEA FERRARO	CITY MANAGER	06/23/2023	314.57
GAYLORD OPRYLAND	AURORA	LIGEA FERRARO	CITY MANAGER	06/23/2023	314.57
GETTYSBURGFLAG.COM	E GREENBUSH	KEVIN FREY	FACILITIES	06/21/2023	1,916.50
GOLF AND SPORT SOLUTIO	LA SALLE	DAVID DEAN	GOLF COURSE	06/26/2023	446.58
GOLF AND SPORT SOLUTIO	LA SALLE	DAVID DEAN	GOLF COURSE	06/26/2023	432.78
GOLF AND SPORT SOLUTIO	LA SALLE	DAVID DEAN	GOLF COURSE	06/26/2023	424.81
GOLF COURSE SUPERINTEN	LAWRENCE	LANCE PFEIFER	GOLF COURSE	07/05/2023	115.00
GOVERNMENT FINANCE OFF	CHICAGO	TANYA SCOTT	FINANCE	06/28/2023	65.00
GRAINGER	LAKE FOREST	TREVOR DEPEW	WATER	07/19/2023	127.60
GRAINGER	LAKE FOREST	DEVIN MADIGAN	WASTEWATER	07/19/2023	71.98
GRAINGER	LAKE FOREST	TREVOR DEPEW	WATER	07/19/2023	19.56
GRAINGER	LAKE FOREST	TREVOR DEPEW	WATER	07/19/2023	239.94
GRAINGER	LAKE FOREST	TREVOR DEPEW	WATER	07/19/2023	140.36

GRAINGER	LAKE FOREST	TREVOR DEPEW	WATER	07/19/2023	55.16
GRAINGER	LAKE FOREST	DEVIN MADIGAN	WASTEWATER	07/19/2023	455.90
GRAINGER	LAKE FOREST	TREVOR DEPEW	WATER	07/19/2023	108.44
GRAINGER	LAKE FOREST	DAVID DEAN	GOLF COURSE	07/11/2023	112.93
GRAINGER	LAKE FOREST	JAMES VAUGHAN	REC CENTER	07/05/2023	331.52
GRAINGER	LAKE FOREST	JAMES VAUGHAN	REC CENTER	06/28/2023	213.73
GRAINGER	LAKE FOREST	JOHN KIPP	WASTEWATER	06/21/2023	503.94
GREEN CO2 SYSTEMS	970-482-0203	JAMES VAUGHAN	REC CENTER	07/05/2023	992.57
GREEN CO2 SYSTEMS	970-482-0203	JAMES VAUGHAN	REC CENTER	07/03/2023	970.03
GREEN CO2 SYSTEMS	970-482-0203	JAMES VAUGHAN	REC CENTER	07/02/2023	236.32
GREEN CO2 SYSTEMS	970-482-0203	PAUL BORTH	REC CENTER	06/27/2023	461.94
GREEN SPOT INC	LONGMONT	DAVID DEAN	GOLF COURSE	07/06/2023	315.50
HILTON	DAYTONA BEACH	ABBY MCNEAL	PARKS	07/06/2023	252.00
ICMA ONLINE	2022894262	PENNY FORD	HUMAN RESOURCES	06/29/2023	112.50
ID EDGE INC	LOUISVILLE	JULIE SEYDEL	REC CENTER	06/26/2023	337.06
IDEXX DISTRIBUTION INC	WESTBROOK	JOHN KIPP	WASTEWATER	07/03/2023	650.20
IN *AMERICAN BIOIDENTI	303-8864747	AMANDA PERERA	REC CENTER	07/06/2023	54.50
IN *AQUASHIELD PRODUCT	614-9482554	JAMES VAUGHAN	REC CENTER	07/14/2023	409.64
IN *DUTY FREE PETS POO	303-3889373	NICHOLAS POTOPCHUK	PARKS	06/28/2023	900.00
IN *ELITE HOOD CLEANIN	720-3388788	DAVID BARIL	GOLF COURSE	06/24/2023	915.00
IN *KAISER LOCK & KEY	303-4493880	JAMES VAUGHAN	REC CENTER	07/11/2023	44.27
IN *KAISER LOCK & KEY	LOUISVILLE	NICHOLAS POTOPCHUK	PARKS	06/29/2023	127.50
IN *MARIA L ANDERSON,	720-8932386	JESSE DEGRAW	REC CENTER	07/12/2023	924.00
IN *TADDIKEN TREE COMP	303-5547035	GREG VENETTE	WATER	07/05/2023	343.00
IN *THE AQUEOUS SOLUTI	800-262-3246	JAMES VAUGHAN	REC CENTER	07/03/2023	633.83
IN *WYLD ENDURANCE	800-262-3246	PAUL BORTH	REC CENTER	07/18/2023	849.60
INSTANT IMPRINTS LOUIS	LOUISVILLE	BARBARA NICKERSON	HUMAN RESOURCES	07/11/2023	564.50
INDEED JOBS	AUSTIN	PENNY FORD	HUMAN RESOURCES	07/01/2023	169.32
JAX - 06	LAFAYETTE	LUKE LAYTON	PARKS	07/12/2023	43.99
JAX - 06	LAFAYETTE	NICHOLAS POTOPCHUK	PARKS	07/12/2023	24.95
JAX - 06	LAFAYETTE	JOHN KIPP	WASTEWATER	06/26/2023	50.26
JAX - 06	LAFAYETTE	JOHN KIPP	WASTEWATER	06/26/2023	99.52
JAX - 06	LAFAYETTE	LUKE LAYTON	PARKS	06/26/2023	39.98
JAX - 06	LAFAYETTE	CATHERINE JEPSON	PARKS	06/22/2023	21.35
JAX - 06	LAFAYETTE	NICHOLAS POTOPCHUK	PARKS	06/22/2023	180.49
JIMMY JOHNS - 2668 - M	LOUISVILLE	ANIKA VAN WOUDEBERG	REC CENTER	07/07/2023	417.09
KBS GOLF SHAFTS	303-444-2226	DAVID BARIL	GOLF COURSE	07/06/2023	106.00
KENTSPORTSALPHAGOLF	8187259720	DAVID BARIL	GOLF COURSE	07/19/2023	125.91
KING SOOPERS #0013	LOUISVILLE	DAWN BURGESS	CITY MANAGER	07/19/2023	67.72

KING SOOPERS #0013	LOUISVILLE	PATRICIA MORGAN	REC CENTER	07/19/2023	63.99
KING SOOPERS #0013	LOUISVILLE	PATRICIA MORGAN	REC CENTER	07/11/2023	19.16
KING SOOPERS #0013	LOUISVILLE	MEAGAN BROWN	HUMAN RESOURCES	07/10/2023	14.98
KING SOOPERS #0013	LOUISVILLE	PATRICIA MORGAN	REC CENTER	07/07/2023	112.25
KING SOOPERS #0013	LOUISVILLE	CATHERINE JEPSON	PARKS	07/07/2023	37.49
KING SOOPERS #0013	LOUISVILLE	PENNY FORD	HUMAN RESOURCES	06/29/2023	23.84
KING SOOPERS #0013	LOUISVILLE	PATRICIA MORGAN	REC CENTER	06/28/2023	52.72
KING SOOPERS #0013	LOUISVILLE	MARLA OLSON	PARKS	06/21/2023	17.48
KING SOOPERS #0013	LOUISVILLE	ROBERT ZUCCARO	PLANNING	06/21/2023	26.96
KING SOOPERS #0062	WESTMINSTER	LANA FAUVER	REC CENTER	06/21/2023	15.00
LAFAYETTE LUMBER COMPA	LAFAYETTE	JACOB MARINKOVICH	PARKS	07/06/2023	563.55
LAFAYETTE LUMBER COMPA	LAFAYETTE	NICHOLAS POTOPCHUK	PARKS	07/06/2023	700.00
LANDS END BUS OUTFITTE	DODGEVILLE	ROBERT ZUCCARO	PLANNING	07/19/2023	199.99
LANGUAGE LINE	MONTEREY	MEREDYTH MUTH	CITY MANAGER	07/10/2023	115.41
LENOVO UNITED STATES	RALEIGH	TANYA SCOTT	FINANCE	07/07/2023	321.19
LES MILLS US TRADING	CHICAGO	LINDSEY WITTY	REC CENTER	07/13/2023	389.00
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	136.22
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	19.22
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	35.71
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	180.38
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	292.65
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	704.26
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	597.01
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	17.54
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	8.09
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	977.08
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	50.60
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	35.71
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	17.48
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	285.00
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	426.25
LL JOHNSON DIST CO	DENVER	LANCE PFEIFER	GOLF COURSE	07/12/2023	556.69
LOCO HERMANOS	LOUISVILLE	BRANDON COX	OPERATIONS	07/06/2023	35.41
LOVELAND LASER TAG	LOVELAND	ANIKA VAN WOUDEBERG	REC CENTER	07/05/2023	400.00
LOWES #03444*	ERIE	DANIEL SALAS ROBLES	PARKS	07/13/2023	69.98
LOWES #03444*	ERIE	ANDY ELLIS	PARKS	06/29/2023	117.72
MAC EQUIPMENT INC (LON	LONGMONT	AARON GRANT	PARKS	07/14/2023	100.68
MAILCHIMP *MISC	MAILCHIMP.COM	EMILY HOGAN	CITY MANAGER	07/18/2023	459.00
MALLORY SAFETY AND SUP	LONGVIEW	TANYA SCOTT	FINANCE	07/18/2023	108.93

MALLORY SAFETY AND SUP	LONGVIEW	TANYA SCOTT	FINANCE	07/14/2023	1,843.31
MALLORY SAFETY AND SUP	LONGVIEW	TANYA SCOTT	FINANCE	07/06/2023	611.25
MANITOU & PIKES PEAK R	719-4716283	TANYA SCOTT	FINANCE	07/03/2023	2,802.80
MANOR VAIL LODGE - LOD	VAIL	KAYLA BETZOLD	CITY MANAGER	07/06/2023	2.73
MARCOS PIZZA - 6003	ARVADA	BELAN CARRILLO	PUBLIC WORKS	06/21/2023	196.90
MICHAELS STORES 2059	SUPERIOR	PATRICIA MORGAN	REC CENTER	07/19/2023	5.58
MICHAELS STORES 2059	SUPERIOR	ERICA SCHMITT	LIBRARY	06/28/2023	64.87
MILE HIGH TURFGRASS LL	EVERGREEN	DAVID DEAN	GOLF COURSE	07/15/2023	412.00
MSFT * E05000BOIV	REDMOND	REMY RODRIGUES	IT	07/19/2023	112.20
NAPA AUTO 0025122	BOULDER	TANYA SCOTT	FINANCE	07/10/2023	2,773.14
NAPA AUTO 0025122	BOULDER	TANYA SCOTT	FINANCE	07/10/2023	2,520.93
NAPA AUTO 0025122	BOULDER	TANYA SCOTT	FINANCE	07/06/2023	7.18
NAPA AUTO 0025122	BOULDER	TANYA SCOTT	FINANCE	07/05/2023	7.18
NAPA AUTO 0025122	BOULDER	TANYA SCOTT	FINANCE	07/05/2023	7.18
NATIONAL STORMWATER CE	BEL AIR	BELAN CARRILLO	PUBLIC WORKS	07/19/2023	824.00
NOODLES & CO 168	BROOMFIELD	LINDSEY WITTY	REC CENTER	07/14/2023	483.25
NOODLES & CO 168	BROOMFIELD	PAUL BORTH	REC CENTER	06/23/2023	363.75
OFFICE DEPOT #1080	DENVER	DAVID BARIL	GOLF COURSE	07/03/2023	222.29
OFFICE DEPOT #256	LAKEWOOD	KAYLA CORCELLI	PARKS	07/10/2023	41.89
OFFICE DEPOT #567	WESTMINSTER	DAVID BARIL	GOLF COURSE	07/10/2023	39.99
OFFICE DEPOT #567	WESTMINSTER	KAYLA CORCELLI	PARKS	06/27/2023	71.18
OSI BATTERIESCOM	MINNETONKA	DEVIN MADIGAN	WASTEWATER	07/12/2023	126.97
PARKER STORE LOUISVILL	LOUISVILLE	THOMAS CZAJKA	OPERATIONS	06/28/2023	400.70
PARWESTTURF	7148931555	DAVID BARIL	GOLF COURSE	07/05/2023	339.57
PAYFLOW/PAYPAL	LAVISTA	TANYA SCOTT	FINANCE	07/03/2023	59.95
PAYFLOW/PAYPAL	LAVISTA	TANYA SCOTT	FINANCE	07/03/2023	19.95
PGA OF AMERICA MEMBERS	PALM BEACH GA	DAVID BARIL	GOLF COURSE	06/29/2023	662.00
PIONEER SAND CO HQ	COLORADO SPRI	KERRY KRAMER	PARKS	06/21/2023	153.17
PIONEER SAND CO HQ	COLORADO SPRI	KERRY KRAMER	PARKS	06/21/2023	133.93
PRESTIGE FLAG MFG CO I	800-5765155	DAVID BARIL	GOLF COURSE	07/19/2023	616.97
PRIDE MANUFACTURING CO	207-4873322	DAVID BARIL	GOLF COURSE	06/20/2023	1,710.00
PSI SERVICES, INC USD	8188476180	SHANE MAHAN	OPERATIONS	07/17/2023	100.00
PST*VERMONT SYSTEMS	ESSEX JCT	JULIE SEYDEL	REC CENTER	06/26/2023	90.13
PST*VERMONT SYSTEMS	ESSEX JCT	JULIE SEYDEL	REC CENTER	06/21/2023	270.38
PET SCOOP	DENVER	ABBY MCNEAL	PARKS	07/04/2023	522.00
QDOBA 2526	SUPERIOR	PAUL BORTH	REC CENTER	06/30/2023	430.10
QDOBA 2526	SUPERIOR	MARLA OLSON	PARKS	06/22/2023	66.70
R&R PRODUCTS	5208893593	LANCE PFEIFER	GOLF COURSE	07/05/2023	205.60
RAY A MORGAN CO INC	EIRIZARRY@UBE	MINDY OLKJER	PUBLIC WORKS	07/12/2023	125.26



RED WING SHOES #581	BOULDER	JACOB MARINKOVICH	PARKS	06/29/2023	150.00
REDGARDEN RESTAURANT A	LOUISVILLE	ROBERT ZUCCARO	PLANNING	06/23/2023	61.20
SAFEWAY #2812	LOUISVILLE	PATRICIA MORGAN	REC CENTER	07/17/2023	2.00
SAFEWAY #2812	LOUISVILLE	AMANDA PERERA	REC CENTER	07/17/2023	27.26
SAFEWAY #2812	LOUISVILLE	NICK PAPPAS	REC CENTER	07/15/2023	175.82
SAFEWAY #2812	LOUISVILLE	DANIEL BIDLEMEN	REC CENTER	07/12/2023	97.19
SAFEWAY #2812	LOUISVILLE	JESSE DEGRAW	REC CENTER	07/12/2023	23.98
SAFEWAY #2812	LOUISVILLE	MARLA OLSON	PARKS	07/12/2023	37.96
SAFEWAY #2812	LOUISVILLE	NICK PAPPAS	REC CENTER	07/11/2023	25.98
SAFEWAY #2812	LOUISVILLE	GIGI YANG	LIBRARY	07/07/2023	50.88
SAFEWAY #2812	LOUISVILLE	ANIKA VAN WOUDEBERG	REC CENTER	07/07/2023	117.81
SAFEWAY #2812	LOUISVILLE	NICK PAPPAS	REC CENTER	07/06/2023	11.58
SAFEWAY #2812	LOUISVILLE	GIGI YANG	LIBRARY	07/06/2023	43.63
SAFEWAY #2812	LOUISVILLE	SANDRA ANDRETICH	OPERATIONS	07/04/2023	340.59
SAFEWAY #2812	LOUISVILLE	PAUL BORTH	REC CENTER	07/03/2023	47.96
SAFEWAY #2812	LOUISVILLE	BELAN CARRILLO	PUBLIC WORKS	06/21/2023	27.76
SAHARA CAFE	MANITOU SPRIN	KATIE BEASLEY	REC CENTER	07/12/2023	23.57
SALESFORCE.COM SERVICE	415-901-8457	BELAN CARRILLO	PUBLIC WORKS	07/11/2023	870.66
SAMEDAY OFFICE SUPPLY	MORGAN@SAMEDA	LIGEA FERRARO	CITY MANAGER	06/21/2023	265.00
SIP.US	ALPHARETTA	JOHN KIPP	WASTEWATER	07/09/2023	30.03
SITEONE LANDSCAPE SUPP	BROOMFIELD	DAVID DEAN	GOLF COURSE	06/29/2023	57.79
SMK*SURVEYMONKEY.COM	PALO ALTO	AMANDA PERERA	REC CENTER	07/18/2023	372.00
SMK*SURVEYMONKEY.COM	PALO ALTO	MEAGAN BROWN	HUMAN RESOURCES	07/02/2023	468.00
SMUGMUG.COM	MOUNTAIN VIEW	GINGER CROSS	GOLF COURSE	06/28/2023	4.02
SP MACNAUGHT USA	TAMPA	DAVID BARIL	GOLF COURSE	07/17/2023	360.00
SPI*CENTURYLINK/LUMEN	MONROE	TANYA SCOTT	FINANCE	06/26/2023	2,735.31
SPI*DIRECT SERVICE	800-531-5000	PAMELA PETERSON-HOHS	GOLF COURSE	07/19/2023	243.92
SPI*DIRECT SERVICE	800-531-5000	PAMELA PETERSON-HOHS	GOLF COURSE	07/03/2023	250.17
SQ *CAMCA	GOSQ.COM	GENEVIEVE KLINE	CITY CLERK	06/21/2023	200.00
SQ *CRAFT COFFEE CART	GOSQ.COM	MARLA OLSON	PARKS	07/10/2023	983.00
SQ *HARLEQUIN'S GARDEN	BOULDER	CATHERINE JEPSON	PARKS	07/07/2023	113.00
SQ *KONA ICE OF HAMPDE	THORNTON	ANIKA VAN WOUDEBERG	REC CENTER	07/19/2023	202.50
SQ *MOE'S BROADWAY BAG	LOUISVILLE	KAYLA BETZOLD	CITY MANAGER	06/28/2023	592.69
SQ *MOE'S BROADWAY BAG	LOUISVILLE	KAYLA BETZOLD	CITY MANAGER	06/27/2023	697.93
SQ *MOUNTAIN WEST PEST	GOSQ.COM	DAVID DEAN	GOLF COURSE	06/27/2023	100.00
SQ *ORGANIC SANDWICH C	LOUISVILLE	LIGEA FERRARO	CITY MANAGER	07/14/2023	31.80
SQ *ORGANIC SANDWICH C	GOSQ.COM	LIGEA FERRARO	CITY MANAGER	07/05/2023	249.10
SQ *PICA'S LOUISVILLE	LOUISVILLE	ROBERT ZUCCARO	PLANNING	06/21/2023	118.80
SQ *ROADSAFE TRAFFIC S	ENGLEWOOD	SHANE MAHAN	OPERATIONS	06/26/2023	132.00

SQ *TEST MY DIESEL LLC	BROOMFIELD	MASON THOMPSON	OPERATIONS	06/27/2023	206.00
SQ *TEST MY DIESEL LLC	BROOMFIELD	MASON THOMPSON	OPERATIONS	06/21/2023	103.00
SQ *TEST MY DIESEL LLC	BROOMFIELD	MASON THOMPSON	OPERATIONS	06/21/2023	103.00
SQ *TEST MY DIESEL LLC	BROOMFIELD	MASON THOMPSON	OPERATIONS	06/21/2023	103.00
STAPLES 00326678	COPPELL	JILL SIEWERT	LIBRARY	06/29/2023	9.79
STAPLES DIRECT	800-3333330	KELLY THARP	OPERATIONS	06/28/2023	130.26
STAPLS7901579559000001	877-8267755	JILL SIEWERT	LIBRARY	06/23/2023	44.85
STERICYCLE INC/SHRED-I	BANNOCKBURN	LESLIE RINGER	HUMAN RESOURCES	07/06/2023	30.00
STERICYCLE INC/SHRED-I	BANNOCKBURN	MEREDYTH MUTH	CITY MANAGER	07/03/2023	30.00
STERICYCLE INC/SHRED-I	BANNOCKBURN	LESLIE RINGER	HUMAN RESOURCES	07/02/2023	30.00
STORQUEST-LOUISVILL	800-784-9176	GIGI YANG	LIBRARY	06/30/2023	391.00
SUC N UP, LLC	LONGMONT	NICHOLAS POTOPCHUK	PARKS	06/21/2023	475.00
TEST GAUGE INC CO	AURORA	STEVEN HUIZENGA	PARKS	06/30/2023	54.99
THAT'S GREAT NEWS	WALLINGFORD	BELAN CARRILLO	PUBLIC WORKS	07/06/2023	15.21
THE GRILL AT COAL CREE	L	DAVID BARIL	GOLF COURSE	07/13/2023	295.20
THE GRILL AT COAL CREE	L	DAVID BARIL	GOLF COURSE	07/13/2023	640.32
THE GRILL AT COAL CREE	L	DAVID BARIL	GOLF COURSE	07/13/2023	590.40
THE GRILL AT COAL CREE	L	DAVID BARIL	GOLF COURSE	07/01/2023	18.24
THE GRILL AT COAL CREE	L	DAVID BARIL	GOLF COURSE	06/26/2023	799.50
THE GRILL AT COAL CREE	L	DAVID BARIL	GOLF COURSE	06/23/2023	590.40
THE HOME DEPOT #1506	LOUISVILLE	DAVID BARIL	GOLF COURSE	07/18/2023	20.91
THE HOME DEPOT #1506	LOUISVILLE	SHANE MAHAN	OPERATIONS	07/18/2023	40.95
THE HOME DEPOT #1506	LOUISVILLE	NICHOLAS POTOPCHUK	PARKS	07/18/2023	10.97
THE HOME DEPOT #1506	LOUISVILLE	SHANE MAHAN	OPERATIONS	07/18/2023	19.82
THE HOME DEPOT #1506	LOUISVILLE	DANIEL SALAS ROBLES	PARKS	07/18/2023	24.24
THE HOME DEPOT #1506	LOUISVILLE	DANIEL SALAS ROBLES	PARKS	07/17/2023	22.68
THE HOME DEPOT #1506	LOUISVILLE	ANDY ELLIS	PARKS	07/17/2023	23.94
THE HOME DEPOT #1506	LOUISVILLE	NICHOLAS POTOPCHUK	PARKS	07/17/2023	108.72
THE HOME DEPOT #1506	LOUISVILLE	DANIEL SALAS ROBLES	PARKS	07/14/2023	14.24
THE HOME DEPOT #1506	LOUISVILLE	SHANE MAHAN	OPERATIONS	07/13/2023	24.94
THE HOME DEPOT #1506	LOUISVILLE	DANIEL SALAS ROBLES	PARKS	07/13/2023	29.62
THE HOME DEPOT #1506	LOUISVILLE	NICK PROSSER	IT	07/13/2023	212.91
THE HOME DEPOT #1506	LOUISVILLE	JAMES VAUGHAN	REC CENTER	07/11/2023	35.36
THE HOME DEPOT #1506	LOUISVILLE	ANDY ELLIS	PARKS	07/11/2023	32.73
THE HOME DEPOT #1506	LOUISVILLE	JACK MANIAN	OPERATIONS	07/11/2023	235.68
THE HOME DEPOT #1506	LOUISVILLE	NICHOLAS POTOPCHUK	PARKS	07/10/2023	595.48
THE HOME DEPOT #1506	LOUISVILLE	BRANDON COX	OPERATIONS	07/10/2023	298.60
THE HOME DEPOT #1506	LOUISVILLE	SHANE MAHAN	OPERATIONS	07/10/2023	20.79
THE HOME DEPOT #1506	LOUISVILLE	CRAIG DUFFIN	PUBLIC WORKS	07/07/2023	79.86

THE HOME DEPOT #1506	LOUISVILLE	MATTHEW ROWE	FACILITIES	07/07/2023	9.97
THE HOME DEPOT #1506	LOUISVILLE	ANDY ELLIS	PARKS	07/07/2023	23.76
THE HOME DEPOT #1506	LOUISVILLE	DAVID BARIL	GOLF COURSE	07/06/2023	1.34
THE HOME DEPOT #1506	LOUISVILLE	JONATHAN KINGSLEY	PARKS	07/06/2023	316.44
THE HOME DEPOT #1506	LOUISVILLE	DAVID BARIL	GOLF COURSE	07/06/2023	12.81
THE HOME DEPOT #1506	LOUISVILLE	BENJAMIN FRANCISCO	OPERATIONS	07/06/2023	88.82
THE HOME DEPOT #1506	LOUISVILLE	JAMES VAUGHAN	REC CENTER	07/06/2023	57.10
THE HOME DEPOT #1506	LOUISVILLE	CATHERINE JEPSON	PARKS	07/06/2023	338.60
THE HOME DEPOT #1506	LOUISVILLE	JEFF ROBISON	FACILITIES	07/06/2023	25.14
THE HOME DEPOT #1506	LOUISVILLE	DAVID BARIL	GOLF COURSE	07/04/2023	33.37
THE HOME DEPOT #1506	LOUISVILLE	JAMES VAUGHAN	REC CENTER	07/03/2023	2.75
THE HOME DEPOT #1506	LOUISVILLE	BENJAMIN FRANCISCO	OPERATIONS	06/30/2023	161.77
THE HOME DEPOT #1506	LOUISVILLE	STEVEN HUIZENGA	PARKS	06/30/2023	63.71
THE HOME DEPOT #1506	LOUISVILLE	ANDY ELLIS	PARKS	06/30/2023	8.63
THE HOME DEPOT #1506	LOUISVILLE	DAVID DEAN	GOLF COURSE	06/29/2023	50.88
THE HOME DEPOT #1506	LOUISVILLE	DAVID DEAN	GOLF COURSE	06/29/2023	39.94
THE HOME DEPOT #1506	LOUISVILLE	DAVID DEAN	GOLF COURSE	06/29/2023	11.07
THE HOME DEPOT #1506	LOUISVILLE	JAMES VAUGHAN	REC CENTER	06/28/2023	7.97
THE HOME DEPOT #1506	LOUISVILLE	MASON THOMPSON	OPERATIONS	06/28/2023	19.96
THE HOME DEPOT #1506	LOUISVILLE	DANIEL SALAS ROBLES	PARKS	06/28/2023	16.24
THE HOME DEPOT #1506	LOUISVILLE	JEFF ROBISON	FACILITIES	06/27/2023	20.44
THE HOME DEPOT #1506	LOUISVILLE	SANDRA ANDRETICH	OPERATIONS	06/27/2023	28.98
THE HOME DEPOT #1506	LOUISVILLE	DANIEL SALAS ROBLES	PARKS	06/27/2023	60.34
THE HOME DEPOT #1506	LOUISVILLE	DAVID DEAN	GOLF COURSE	06/26/2023	276.53
THE HOME DEPOT #1506	LOUISVILLE	JACOB MARINKOVICH	PARKS	06/26/2023	138.92
THE HOME DEPOT #1506	LOUISVILLE	GREG VENETTE	WATER	06/26/2023	148.24
THE HOME DEPOT #1506	LOUISVILLE	JEFF OWENS	WATER	06/23/2023	167.00
THE HOME DEPOT #1506	LOUISVILLE	KEN MATHEWS	OPERATIONS	06/23/2023	47.49
THE HOME DEPOT #1506	LOUISVILLE	JACK MANIAN	OPERATIONS	06/22/2023	68.36
THE HOME DEPOT #1506	LOUISVILLE	DANIEL SALAS ROBLES	PARKS	06/22/2023	34.49
THE HOME DEPOT #1506	LOUISVILLE	CATHERINE JEPSON	PARKS	06/21/2023	68.49
THE HOME DEPOT #1506	LOUISVILLE	JACK MANIAN	OPERATIONS	06/21/2023	99.91
THE HOME DEPOT #1506	LOUISVILLE	DANIEL SALAS ROBLES	PARKS	06/21/2023	26.92
THE HOME DEPOT #1506	LOUISVILLE	NICHOLAS POTOPCHUK	PARKS	06/21/2023	139.24
THE HOME DEPOT #1506	LOUISVILLE	JAMES VAUGHAN	REC CENTER	06/21/2023	9.92
THE HOME DEPOT #1506	LOUISVILLE	PAUL BORTH	REC CENTER	06/20/2023	17.87
THE HOME DEPOT #1506	LOUISVILLE	NORMAN MERLO	GOLF COURSE	06/20/2023	15.58
THE UPS STORE 5183	SUPERIOR	JOSH GILBERTSON	IT	07/10/2023	27.09
THREE LEAF CATERING	LOUISVILLE	TANYA SCOTT	FINANCE	06/23/2023	1,259.58

TOWN OF SUPERIOR	SUPERIOR	ERIK SWIATEK	PARKS	07/05/2023	13.37
TST* 95A BISTRO AND SU	LAFAYETTE	PAULINA BENNETT	IT	07/12/2023	74.40
TST* BUSABA THAI	LOUISVILLE	JEN KENNEY	POLICE	06/27/2023	44.00
TST* LULUS BBQ	LOUISVILLE	PAULINA BENNETT	IT	07/17/2023	91.50
TST* LULUS BBQ	LOUISVILLE	SANDRA ANDRETICH	OPERATIONS	07/13/2023	50.00
TST* VERDE - LOUISVILL	LOUISVILLE	JEFF DURBIN	CITY MANAGER	07/11/2023	51.00
TST* WATERLOO	LOUISVILLE	CORY PETERSON	PUBLIC WORKS	06/28/2023	148.50
TST* WATERLOO	LOUISVILLE	GREG VENETTE	WATER	06/24/2023	62.00
U.S. SAWS INC WEBSITE	TAMPA	BENJAMIN FRANCISCO	OPERATIONS	06/28/2023	777.80
UNITED AIRLINES	800-932-2732	EMILY HOGAN	CITY MANAGER	07/14/2023	26.00
UNITED AIRLINES	800-932-2732	EMILY HOGAN	CITY MANAGER	07/14/2023	277.80
UNITED AIRLINES	800-932-2732	EMILY HOGAN	CITY MANAGER	07/14/2023	26.00
UNITED AIRLINES	800-932-2732	JEFF DURBIN	CITY MANAGER	06/29/2023	222.80
UNITED AIRLINES	800-932-2732	JEFF DURBIN	CITY MANAGER	06/29/2023	73.00
UNITED AIRLINES	800-932-2732	JEFF DURBIN	CITY MANAGER	06/29/2023	73.00
USPS PO 0756700237	SUPERIOR	LESLIE RINGER	HUMAN RESOURCES	06/30/2023	9.24
USPS PO 0756700237	SUPERIOR	BRENDON MEILI	PARKS	06/22/2023	7.50
USPS PO 0756700237	SUPERIOR	ERICA BERZINS	POLICE	06/21/2023	20.90
VANCE BROTHERS DENVER	DENVER	SHANE MAHAN	OPERATIONS	06/23/2023	180.00
VENNGAGE.COM	TORONTO	EMILY HOGAN	CITY MANAGER	07/15/2023	19.00
VISTAPRINT	8662074955	ERIN OWEN	LIBRARY	07/19/2023	680.28
VTG*TIMBERLINE CONDOMI	SNOWMASS VILI	KATIE BEASLEY	REC CENTER	06/23/2023	128.75
VUE*COMPTIA MKETPLCE	800-511-3478	TANYA SCOTT	FINANCE	07/07/2023	1,839.20
VZWRLSS*IVR VB	800-922-0204	TANYA SCOTT	FINANCE	06/24/2023	862.07
VZWRLSS*IVR VB	800-922-0204	TANYA SCOTT	FINANCE	06/24/2023	2,742.73
VZWRLSS*MY VZ VB P	800-922-0204	TANYA SCOTT	FINANCE	07/04/2023	2,750.95
VZWRLSS*PRPAY AUTOPAY	888-294-6804	CRAIG DUFFIN	PUBLIC WORKS	07/08/2023	20.00
WALGREENS #7006	SUPERIOR	SANDRA ANDRETICH	OPERATIONS	06/27/2023	28.73
WARRIOR CHALLENGE AREN	BROOMFIELD	ALEXIS SMITH	REC CENTER	06/28/2023	848.64
WHENTOWORK INC	TUSTIN	PAUL BORTH	REC CENTER	06/27/2023	77.00
WILBUR ELLIS SPOKANE	SPOKANE VLY	ABBY MCNEAL	PARKS	06/21/2023	691.46
WM SUPERCENTER #1045	LAFAYETTE	NICHOLAS POTOPCHUK	PARKS	07/17/2023	43.12
WM SUPERCENTER #1045	LAFAYETTE	MEAGAN BROWN	HUMAN RESOURCES	07/12/2023	36.40
ZOOM.US 888-799-9666	SAN JOSE	ROBERT ZUCCARO	PLANNING	07/16/2023	55.99
ZOOM.US 888-799-9666	SAN JOSE	ANDY SQUIRES	IT	07/14/2023	617.87
ZOOM.US 888-799-9666	SAN JOSE	LINDSEY WITTY	REC CENTER	07/02/2023	15.99
ZOOM.US 888-799-9666	SAN JOSE	ALINA KIRCHNER	HUMAN RESOURCES	06/28/2023	15.99
					113,530.00

				G. Cross	4.02
					113,534.02

**CITY OF LOUISVILLE**  
**EXPENDITURE APPROVALS \$25,000.00 - \$99,999.99**  
**July 2023**

DATE	P.O. #	VENDOR	DESCRIPTION	AMOUNT
7/12/2023	2023327	GEI Consultants	<p style="text-align: center;"><b>Inundation Mapping and EAP Update</b></p> <p>Staff issued an RFP in January of 2023 for professional engineering services to perform dam breach analysis on two City reservoirs to update the City's existing Dam Inundation Mapping associated with the corresponding Emergency Action Plans (EAPs) as required by State of Colorado Division of Water Resources (DWR).</p>	<b>\$26,602.00</b>
7/24/2023	2023333	DHE Computer Systems, LLC	<p style="text-align: center;"><b>Replacing 42 computers and monitors at the Library</b></p>	<b>\$42,151.66</b>
7/24/2023	2023335	120 Water, Inc.	<p style="text-align: center;"><b>LCR Sampling and Identification</b></p> <p>Beginning in 2022, The Environmental Protection Agency revised the regulations for Lead and Copper in Drinking Water. This revision requires all water systems to identify service lines and categorize them by material type. Once identified, any and all service lines that contain lead piping/fittings or sample above regulatory limits will need to be replaced. All water systems must complete the identification process by October 2024. Staff have developed two additional phases to complete this analysis with each successive phase being more complicated, requiring greater participations from users and having higher costs impacts. For 2023, staff propose a second phase that includes the following: predictive modeling, water quality sampling, voluntary identification of piping materials in coordination with homeowners and physical testing of materials in meter pits. The final phase 3, comtemplates excavating services lines to expose pipe material and testing directly. The need or extent of this final phase 3 will be highly dependent on the success of the 2023 work and may require Council action and implementation later this year. These phased actions will prepare the City for the development and completion of a lead service line replacement program in 2024 and start replacements as early as 2025.</p>	<b>\$60,000.00</b>
7/24/2023	2023336	Utility Associates Inc.	<p style="text-align: center;"><b>Yearly dues for 7 year contract - Body Cams</b></p>	<b>\$54,400.00</b>
7/27/2023	2023342	Insight Public Sector Inc.	<p style="text-align: center;"><b>Annual subscription for Microsoft License for all users</b></p> <p>Body camera and video data storage system services for the Louisville Police Department</p>	<b>\$40,578.12</b>

# **City Council Meeting Minutes**

**February 7, 2023  
City Hall, Council Chambers  
749 Main Street  
6:00 PM**

**Call to Order** – Mayor Maloney called the meeting to order at 6:00 p.m. **Roll Call** was taken and the following members were present:

**City Council:** *Mayor Dennis Maloney  
Mayor Pro Tem Deborah Fahey  
Councilmember Caleb Dickinson (attended remotely)  
Councilmember Barbara Hamlington (sworn in)  
Councilmember Dietrich Hoefner (sworn in)  
Councilmember Chris Leh  
Councilmember Maxine Most*

**Staff Present:** *Jeff Durbin, City Manager  
Kurt Kowar, Public Works Director  
Cory Peterson, Deputy Director of Utilities  
Rob Zuccaro, Planning and Building Safety Director  
Ellie Hassan, Planner II  
Sharon Nemechek, Cultural Services Director  
Erica Schmitt, Arts and Event Manager  
Rhonda Henger, Human Resources Director  
Meredyth Muth, City Clerk*

**Others Present:** *Kathleen Kelly, City Attorney*

## **APPROVAL OF AGENDA**

Mayor Maloney asked for the appointments of the new Ward 3 members to be moved to before the consent agenda. He asked for any other changes. Hearing none asked for a motion. **MOTION:** Councilmember Leh moved to approve the agenda as amended, seconded by Mayor Pro Tem Fahey. **VOTE:** All in favor.

## **PUBLIC COMMENTS ON ITEMS NOT ON THE AGENDA AND ON THE CONSENT AGENDA**

Grace Gee, Louisville resident, spoke on the Louisville Resiliency Sculpture and her disappointment that Council decided to put the sculpture on hold.

Beth McLennan, Louisville resident, stated that she was a juror for the Louisville Resiliency Sculpture and also expressed her disappointment in Council's action.

Kyle Brown, thanked Council for the opportunity he had to be a councilmember. He stated he is looking forward to working with the Louisville Council in his new capacity as State House Representative. He offered his congratulations to the new Ward 3 councilmembers. He noted his door is always open and he looks forward to continuing his service to this community.

### **APPOINTMENT OF WARD III COUNCILMEMBERS**

Mayor Maloney stated the Council has two vacant Ward 3 seats as a result of Councilmember Brown being selected to serve as State House Representative and Councilmember Maloney being becoming Mayor after Mayor Stolzmann was elected as County Commissioner. The Council conducted seven interviews on January 31. He thanked all of the applicants noting it was a very good pool to choose from with many qualified candidates willing to serve on Council.

Public Comments – None

Mayor Maloney asked for nominations for the first vacancy.

**MOTION:** Mayor Pro Tem Fahey nominated Dietrich Hoefner, seconded by Mayor Maloney.

Councilmember Most stated she was uncomfortable with this process and feels it fell short in the area of EDI. She would have liked additional discussion about EDI. She felt the process was rushed. As a community she would like to see Council to do better on EDI issues. She worries there are people in the community that are not being served or listened to. She stated this does not take away from those being appointed this evening, just that she wants people to keep this in mind.

Councilmember Leh encouraged everyone to read the applications and also noted the quality of the applicants. He noted the outreach to residents to get a more diverse pool of applicants. He stated this process is a challenge and the answers from the applicants were varied. He stated the process was not perfect but he is pleased with the outcome.

**VOTE:** Motion carried by unanimous roll call vote.

Mayor Maloney asked for nominations for the second vacancy.

**MOTION:** Councilmember Most nominated Barbara Hamlington, seconded by Mayor Pro Tem Fahey.



**VOTE:** Motion carried by unanimous roll call vote.

Councilmembers Hoefner and Hamlington were sworn in by Municipal Judge Thrower.

### **APPROVAL OF THE CONSENT AGENDA**

Mayor Maloney asked for changes to the consent agenda. Councilmember Most asked for Item F to be moved to the regular agenda. **Motion:** Councilmember Leh moved to approve the consent agenda as amended, seconded by Mayor Pro Tem Fahey. **Vote:** All in favor.

- A. ***Approval of Bills***
- B. ***Approval of Minutes: September 20, 2022***
- C. ***Approval of Resolution No. 4, Series 2023 – A Resolution Authorizing Changes to the Approved Signers for the City’s Banking and Financial Accounts***
- D. ***Approval of Request for Proposals for 10-Year Comprehensive Plan Update Consultant Services***
- E. ***Approval of 2023 On Call Geographic Information System and Asset Management System Support Services Contract with Invision GIS, LLC***
- F. ***Approval of Appointments to Cultural Council, Revitalization Commission, and Planning Commission **moved to regular agenda*****
- G. ***Approval of Sole Source Agreement with Spronk Water Engineers for 2022 Water Rights Administration***
- H. ***Approval of Resolution No. 5, Series 2023 – A Resolution Authorizing Funding of Foundation Removal and Fire Debris Clean Up Following the Marshall Fire for 130 Cherrywood Lane***
- I. ***Approval of Sole Source Agreement with RESPEC for 2023 Environmental Compliance Consulting Services***
- J. ***Approval of Contract Between the City of Louisville and Municipal Treatment Equipment for Water Treatment Plant Chemical Mixing Equipment Replacement***
- K. ***Approval of Second Amended Employment Contract for City Manager Jeff Durbin***

### **APPROVAL OF APPOINTMENTS TO CULTURAL COUNCIL, REVITALIZATION COMMISSION, AND PLANNING COMMISSION MOVED FROM CONSENT AGENDA**

Councilmember Most stated the Planning Commission is such an important position and it warrants more consideration than putting the recommendation on the Consent Agenda.

Mayor Maloney noted the established process was followed. That process can be reviewed with the discussion on Boards and Commissions scheduled next month.

**MOTION:** Councilmember Dickinson moved to approve the appointments; seconded by Councilmember Leh. **VOTE:** Motion passed 6-1; Most voting no.

**COUNCIL INFORMATIONAL COMMENTS ON PERTINENT ITEMS NOT ON THE AGENDA**

Mayor Pro Tem Fahey asked everyone to extend sympathies to the earthquake victims in Turkey and Syria.

Mayor Maloney noted it is Black History Month. There are many resources at the library and the History Museum on Black History.

**CITY MANAGER'S REPORT**

None.

**REGULAR BUSINESS**

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**NORTH END BLOCK 11 – 1501 EAST SOUTH BOULDER ROAD**

**ORDINANCE NO. 1846, SERIES 2022 – AN ORDINANCE APPROVING A FOURTH AMENDMENT TO THE NORTH END GENERAL DEVELOPMENT PLAN TO AMEND ALLOWED RESIDENTIAL USES ON PLANNING AREA 1 AND STANDARDS FOR ROOF OVERHANG ENCROACHMENTS WITHIN SETBACKS AND EASEMENTS FOR BLOCK 11 – 2<sup>nd</sup> READING, PUBLIC HEARING (advertised *Daily Camera* 1/08/23)**

**ORDINANCE NO. 1847, SERIES 2022 – AN ORDINANCE APPROVING A PARTIAL VACATION OF SIX PORTIONS OF AN EXCLUSIVE CITY UTILITY EASEMENT ON BLOCK 11 OF THE NORTH END, BLOCK 11 – REPLAT OF NORTH END PARCEL 1, OUTLOT H & OUTLOT K REPLAT SUBDIVISION – 2<sup>nd</sup> READING, PUBLIC HEARING (advertised *Daily Camera* 1/08/23)**

**RESOLUTION NO. 6, SERIES 2023 – A RESOLUTION APPROVING A PLANNED UNIT DEVELOPMENT AMENDMENT AND A FINAL PLAT WITH AMENDED SUBDIVISION AGREEMENT FOR A MIXED-USE DEVELOPMENT CONSISTING OF 38 RESIDENTIAL UNITS AND 40,562 SQUARE FEET OF COMMERCIAL DEVELOPMENT AT BLOCK 11 OF NORTH END (1501 SOUTH BOULDER ROAD)**

Mayor Maloney introduced the items and asked for disclosures. Councilmember Hoefner stated he heard and acted on the application in his capacity as a Planning Commissioner, but he will make his decision on the evidence presented at this City Council hearing. He added he does not believe his participation as a Planning

Commission member will affect his ability to hear and act on the application as a Councilmember in a fair and impartial manner.

Mayor Maloney opened the public hearing.

Planner Ellie Hassan stated this property is a four and one-half acre parcel currently zoned community commercial and residential located in the North End development. The proposed amendments would change the housing types along with some site design. The applicant is also requesting amendments to the General Development Plan (GDP). The application reflects a mix of multi-family and commercial development with the elimination of single-family and townhome duplex housing.

The applicant is also requesting a plat amendment to accommodate the multi-family and the commercial development. The plat will establish the new easements and includes four commercial building and 38 dwelling units. The commercial buildings will vary in height from one story to three story. The residential buildings will include duplex, triplex and fourplex designs.

This application is subject to the Inclusionary Housing ordinance and the applicants are seeking the fee in lieu option. The applicant is also requesting a waiver for building height for four of the buildings to over 40 feet.

Mayor Pro Tem Fahey asked where money for fee in lieu would go. Community Development Director Rob Zuccaro stated that it will need to be held in a dedicated fund for use on affordable housing. The housing study will hopefully give some strategies on how to use the fees that are received.

Councilmember Most asked for clarification on Council's ability to grant or not grant the fee in lieu. Director Zuccaro acknowledged that Council is not required to grant the fee in lieu. Councilmember Most expressed her concern that four affordable units would be able to be built at another site with that amount of money. Director Zuccaro clarified that the money is not equal to the price of a unit, just the difference.

Mayor Maloney expressed a concern about concurrency of building commercial and residential. He stated he almost wants to require a certificate of occupancy for commercial prior to residential being built. He recalled a situation where the residential was built and the commercial property was never started. He asked if it was advisable that the Council takes a deeper step to ensure it gets done. Director Zuccaro said that a condition could be added by Council.

Sam Coutts of Ripley Designs made the applicant presentation on behalf of Markel Homes. He gave a brief overview of Markel Homes, spoke regarding the fee in lieu option, and noted the request to build multi-family units rather than single-family.

Councilmember Most stated that when she thinks of affordable housing she thinks about location to services, schools, transportation, etc. She would like more data on the fiscal impact to the other units in the development if the fee in lieu was not granted. Jason Markel said they might have to explore creative ways to lower rents or subsidized units in the commercial spaces. Affordable units in the residential section would compound that and he is confident that they are not going to high rents for the commercial properties.

Councilmember Hamlington asked why the single-family and duplex types were removed from the plan. Mr. Markel said there was an island of single family homes and it didn't seem to fit being next to commercial and other multi-family. It makes much more sense to go with higher density.

**Public Comments:**

Mark Cathcart, Louisville, stated the HOA and neighbors do want this built as the vacant lot is an eyesore. He is concerned that once replatted the applicant could then sell the properties and never build.

Jeff Gaillard, Louisville, said that the previous statement is echoed by the community. This project needs to be built and he's worried that they are going to get some more residential units and foundations with weeds forever.

Councilmember Hoefner wanted clarification from the applicant regarding phasing. Mr. Markel answered that the next phase of residential can't be started without phase two commercial being under construction. It's possible to be finishing up the first commercial building and residential phase, but another residential building permit could not be pulled without putting a foundation in the ground for the next commercial building.

Councilmember Dickinson stated he likes the lighting and landscaping plans and is happy to see the EV parking. He likes the concurrency plan of building commercial with residential and thanked staff for a balanced approach of being flexible but holding the developer to building all the structures. He stated the height waivers are minimal, not an additional story. He is happy to see the fee for affordable housing that the City can use towards more affordable housing in a way that makes sense. He stated this appears to be a good product that he can support.

Councilmember Most asked if Council approved subdividing was there anything that would prevent the applicant from selling it off. Mr. Markel stated they could sell it but that is not their intent. Councilmember Most stated she is concerned that there will be a request at a later date to not complete the commercial area. She asked what sizes of commercial they are envisioning on this site. Mr. Markel stated the commercial buildings would be designed to be flexible so they could take many different sizes of businesses. They are also talking about co-working spaces.

Mayor Maloney stated he supports the fee in lieu as a way to have the funds to buy property for partnering on new areas for affordable housing. The concurrency plan was put in place to assure the City that the commercial gets built. He supports the change in the types of units as it brings more workforce housing to town. The height waivers are very minor, and he supports the application.

Public Comments – None.

Mayor Maloney closed the public hearing

Councilmember Leh noted the importance of this property and the need to finish the subdivision. He stated he thinks the criteria are met for the application and the fee in lieu for housing makes sense.

**MOTION:** Councilmember Leh moved to approve Ord No. 1846; seconded by Mayor Pro Tem Fahey.

**VOTE:** Motion carried by unanimous roll call vote.

**MOTION:** Councilmember Leh moved to approve Ordinance No. 1847; seconded by Councilmember Hoefner.

**VOTE:** Motion carried by unanimous roll call vote.

**MOTION:** Councilmember Dickinson moved to approve Resolution No. 6; seconded by Councilmember Leh.

**VOTE:** Motion carried by unanimous roll call vote.

### **DISCUSSION/DIRECTION – OPTIONS FOR 2023 INDEPENDENCE DAY CELEBRATION**

Arts and Events Program Manager Erica Schmitt outlined four options for consideration for an Independence Day celebration. One, the traditional fireworks, a concert band and gathering at the golf course. Two, have the fireworks shot from a higher elevation so they can be enjoyed from around the city. Third, have a drone light show and a concert band at the golf course. The fourth option is an afternoon celebration providing entertainment for all ages, interactive games, and more. Regardless of the option chosen booking vendors needs to be done as soon as possible.

Councilmember Leh asked if any outreach had been done to fire survivors. City Manager Jeff Durbin stated there is a lot of anecdotal information about people who really want fireworks and those who don't feel it is appropriate. No formal surveying has been done.

Mayor Maloney asked when a decision has to be made to move forward. Manager Schmitt stated staff will need to know about buying fireworks by March.

Mayor Maloney asked Fire Chief Willson about the risk of the fireworks. Chief Willson stated the Fire District is neutral, but they have a very good track record. Picking a good vendor is key. There are conditions that have to be met that night such as drought level, and wind, plus the golf course waters really well prior to the event.

Councilmember Most stated she would like to see the fireworks continue. It is tough to make this decision with just anecdotal information.

Mayor Pro Tem Fahey favors adding an event to Community Park but she stated she wouldn't want to make a decision without knowing more of what residents want.

Councilmember Leh agrees with the idea of having a daytime event, if the funds are available.

#### Public Comments

Cindy Bedell, Louisville, asked if any fires have been caused by the fireworks and Chief Willson responded no. She looks forward to the hot dogs.

Sherry Sommer, Louisville, asked to consider having the traditional festivities, except replace the fireworks with drones.

Councilmember Dickinson stated there is no way to make everyone happy and he doesn't think there is enough time to do a survey. He would lean towards keeping the fireworks. He would like to add the daytime event if possible.

Councilmember Hoefner is also skeptical that a survey could be done quickly enough and with enough participants. He is leaning in favor of the history and tradition of the fireworks while recognizing some that don't like them though. He would also like to add a daytime event.

Mayor Maloney likes the drone idea but the cost seems excessive for a short event. He would like to see the daytime event added for 2024 and keep the fireworks for 2023.

Councilmember Most asked if the daytime event could be added this year if budget allows. City Manager Jeff Durbin stated it is unlikely we could do that this year given staff resources but it could be planned for 2024.

The consensus was for staff to move forward with fireworks for this year and look at other options that could be added for 2024.

Councilmember Dickinson asked if the Mayor could write something about this decision to be sent to the public to people understand the decision.

**RESOLUTION NO. 7, SERIES 2023 – A RESOLUTION SETTING CERTAIN WATER, WASTEWATER, STORMWATER AND OTHER FEES, RATES, AND CHARGES FOR THE CITY OF LOUISVILLE, COLORADO**

Deputy Director of Utilities Cory Peterson stated staff is recommending an 8% increase in wastewater rates, a 9% increase for stormwater rates, and no increase for water. He noted this will be about a \$4.00 increase on average for residents. He reviewed the process staff uses to smooth the increases over the years so resident don't get large increase all at once. This decision does not affect water tap fees, only monthly utility charges.

Mayor Pro Tem Fahey asked if the loss of revenue from homes lost to the fire affect the numbers. Deputy Director Peterson, stated yes, but replacement of those homes in the next few years is included in the projections.

Councilmember Leh noted this rate increase does effect residents, especially lower income residents. He asked if information is being sent to residents about this process. He noted the City does have funds available to help people with utility bills.

Public Works Director Kurt Kowar stated a mailing will go to all residents in April and it will tell people how to get apply for funding.

Public Comments – None

Councilmember Hoefner stated the rate smoothing model is great to keep people from getting huge changes.

**MOTION:** Councilmember Hoefner moved to approve Resolution No. 7; seconded by Councilmember Hamlington.

**VOTE:** Motion carried by unanimous roll call vote.

**ORDINANCE NO. 1848, SERIES 2023 – AN ORDINANCE AMENDING SECTION 2.02.090 OF THE LOUISVILLE MUNICIPAL CODE REGARDING THE MAYOR'S AND MAYOR PRO TEM'S SALARIES – 2<sup>ND</sup> READING, PUBLIC HEARING  
(advertised *Daily Camera* 1/8/23)**

Mayor Maloney introduced the item and opened the public hearing.

Director of Human Resources Rhonda Henger the City's compensation consultant was tasked with comparing the Mayor, Mayor Pro Tem, and councilmember salaries with 27 surrounding municipalities. As a result of the study, adjustments to the Mayor and

Mayor Pro Tem's salaries are being suggested. The Mayor's salary would increase to \$18,604/year and the Mayor Pro Tem's salary will increase to \$11,993/year to align with the market study. There is no request to increase councilmember salaries. These changes would take effect for newly elected councilmembers only.

Councilmember Hamlington appreciates the evaluation to keep those that are serving at market value. She noted that pay can make the difference between encouraging those that may need assistance, such as hiring a baby sitter, in order for a councilmember to attend meetings. This assistance will help with Council's EDI goals.

Public Comments – None.

Mayor Maloney said that when looking at very large cities, leadership in those cities is on a very different scale. He would like to see comparisons with Superior, Lafayette, and Erie. The differential for mayor and mayor pro tem makes sense.

Mayor Pro Tem Fahey agreed with Mayor Maloney's. She suggested accommodations for those that need translators, child care, etc. rather than a salary increase to reach EDI goals.

Councilmember Most stated that requiring people to ask for an accommodation or assistance makes them feel separate. If we want to make it more accessible, make it more possible for people to engage.

Councilmember Leh proposed bringing back data that removes the larger cities and focus more on those immediately surrounding Louisville.

Mayor Maloney stated the basic structure makes sense, but members would like to see a different set of cities to compare to.

The item was continued to May 2 meeting at 6 pm.

**ORDINANCE NO. 1849, SERIES 2023 – AN ORDINANCE APPROVING THE VACATION OF FOUR DRAINAGE EASEMENTS LOCATED BETWEEN LOTS 13 AND 14, LOTS 14 AND 15, LOTS 15 AND 16, AND LOTS 16 AND 17 OF BLOCK 1 DEDICATED BY THE REPLAT OF THE ENCLAVE – 1<sup>ST</sup> READING, SET PUBLIC HEARING 3/7/23**

Mayor Maloney introduced Ordinance No. 1849 by title.

**MOTION:** Mayor Maloney moved to approve the ordinance on first reading and set the public hearing for March 7, 2023; seconded by Pro Tem Fahey.

**VOTE:** Motion passed by unanimous voice vote.



**ORDINANCE NO. 1850, SERIES 2023 – AN ORDINANCE AMENDING SECTION 3.24  
OF THE LOUISVILLE MUNICIPAL CODE REGARDING THE TAX AND FEE  
BUSINESS ASSISTANCE PROGRAM – 1<sup>ST</sup> READING, SET PUBLIC HEARING  
2/21/23**

Mayor Maloney introduced Ordinance No. 1849 by title.

**MOTION:** Mayor Maloney moved to approve the ordinance on first reading and set the public hearing for February 21, 2023; seconded by Councilmember Most.

**VOTE:** Motion passed by unanimous voice vote.

**CITY ATTORNEY’S REPORT**

None.

**COUNCIL COMMENTS, COMMITTEE REPORTS, AND IDENTIFICATION OF  
FUTURE AGENDA ITEMS**

Mayor Maloney again welcomed the new members.

**ADJOURN**

Members adjourned at 9:54 pm.

\_\_\_\_\_  
Dennis Maloney, Mayor

\_\_\_\_\_  
Meredyth Muth, City Clerk

# ***City Council Meeting Minutes***

**August 1, 2023  
Electronic Meeting  
6:00 PM**

**Call to Order** – Mayor Maloney called the meeting to order at 6:00 p.m. **Roll Call** was taken and the following members were present:

**City Council:** *Mayor Dennis Maloney  
Mayor Pro Tem Deborah Fahey  
Councilmember Caleb Dickinson  
Councilmember Barbara Hamlington  
Councilmember Dietrich Hoefner  
Councilmember Chris Leh  
Councilmember Maxine Most*

**Staff Present:** *Jeff Durbin, City Manager  
Meredyth Muth, City Clerk*

**Others Present:** *Kathleen Kelly, City Attorney*

## **APPROVAL OF AGENDA**

Mayor Maloney called for changes to the agenda and hearing none asked for a motion. **Motion:** Councilmember Dickinson moved to approve the agenda, seconded by Mayor Pro Tem Fahey. **Vote:** All in favor.

## **PUBLIC COMMENTS ON ITEMS NOT ON THE AGENDA AND ON THE CONSENT AGENDA**

None.

## **APPROVAL OF THE CONSENT AGENDA**

Mayor Maloney asked for changes to the consent agenda; Councilmember Leh asked that 4E be moved to the consent agenda. **Motion:** Councilmember Leh moved to approve the consent agenda as amended, seconded by Councilmember Hoefner. **Vote:** All in favor.

- A. *Approval of Bills***
- B. *Approval of Minutes: July 25, 2023***

- C. *Appointment of Two Councilmembers to Work on Annual Evaluations of Appointed Officials***
- D. *Approval to Make August 8 and August 22 Study Sessions Special Meetings***
- E. *Approval of Proclamation for Louisville, Colorado Italian-American Heritage Day – moved to regular agenda***
- F. *Approval of Contract for Rehabilitation Planning for the Trott-Downer Cabins***

### **COUNCIL INFORMATIONAL COMMENTS ON PERTINENT ITEMS NOT ON THE AGENDA**

Councilmember Hoefner noted a community meeting was held last week to discuss traffic issues on the Polk/Dahlia corridor. This was in response to a recent accident with a pedestrian and it was well attended. Unfortunately, there was a similar accident the next day underscoring the need for additional traffic calming in this area. He asked that the new traffic safety measures be installed sooner rather than later, particularly as school is about to begin.

Councilmember Most asked for “No Thru Traffic” signs to be added to the street as soon as possible and that communications get out to the neighborhood and the Fireside Elementary community with what the City is committing to do.

Councilmember Hamlington added that there are unique circumstances in this area and it needs to be addressed with both short-term and long-term fixes.

Mayor Maloney stated all members of council are in agreement on this issue and traffic safety is important. He noted the Public Works Department continues to look for solutions and funding is approved. This is an urgent situation.

### **CITY MANAGER’S REPORT**

City Manager Durbin stated staff agrees with the urgency of this situation. Director Kowar stated staff has looked at possible solutions for the corridor including installing speed cushions and pedestrian refuges. He stated he thinks the speed cushions can be in within 30 days and other tactics by the end of the year.

Fire Chief Willson stated staff reached out to him last week to understand if there are any concerns with traffic calming in this area. It is a balancing act to not impede the response time of the fire trucks but to also slow traffic. He stated the Fire District will work with the City to find the best options.

Director Kowar stated staff is committed to increasing safety and meeting the needs of the neighborhood. City Manager Durbin also noted the Police are also looking in to how to best increase enforcement.

**REGULAR BUSINESS**

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**ORDINANCE NO. 1855, SERIES 2023 – AN ORDINANCE AMENDING CHAPTER  
5.08 OF THE LOUISVILLE MUNICIPAL CODE CONCERNING ART GALLERY  
PERMITS – 1<sup>ST</sup> READING – SET PUBLIC HEARING 8/15/23**

Mayor Maloney introduced Ordinance No. 1855 by title.

**MOTION:** Mayor Maloney moved to approve the ordinance on first reading and set the public hearing for August 15, 2023; seconded by Councilmember Leh.

**VOTE:** Motion passed by unanimous voice vote.

**APPROVAL OF PROCLAMATION FOR LOUISVILLE, COLORADO ITALIAN-  
AMERICAN HERITAGE DAY – *moved from consent agenda***

Councilmember Leh read the proclamation.

**MOTION:** Councilmember Leh moved to approve the proclamation; seconded by Mayor Maloney.

**VOTE:** Motion passed by unanimous voice vote.

**CITY ATTORNEY’S REPORT**

None.

**COUNCIL COMMENTS, COMMITTEE REPORTS, AND IDENTIFICATION OF  
FUTURE AGENDA ITEMS**

None.

**ADJOURN**

Members adjourned at 6:20 pm.

\_\_\_\_\_  
Dennis Maloney, Mayor

\_\_\_\_\_  
Meredyth Muth, City Clerk

**SUBJECT: APPROVE ZAYO CONTRACT FOR SERVICE RENEWAL & ADDITIONAL REDUNDANT INTERNET CONNECTIONS**

**DATE: AUGUST 15, 2023**

**PRESENTED BY: PAULINA BENNETT, INFORMATION TECHNOLOGY DIRECTOR**

**SUMMARY:**

The City of Louisville currently uses Zayo for the fiber connection that provides primary Internet service to City buildings. The current contract provides a single 500Mb/sec connection to City Hall.

In the aftermath of the City's 5-day-long internet outage last fall, and another shorter outage this spring—both of which were caused by physical interruptions to that single fiber connection outside City limits—IT staff have asked Zayo to identify opportunities to provide secondary and/or tertiary connections using diverse geographic paths, to which the City can fail over in the event of an interruption to the main link. This new connection will be delivered to the City Services building on S. 104<sup>th</sup> Street. Construction is expected to take 90-120 days from contract signing.

The new contract will also double the speed of the City's current connection to 1 Gb/sec at a lower rate than the City is currently paying for the existing speed. This will ensure that the City is able to support the growing bandwidth needs of an increasingly cloud-first enterprise software landscape.

Both parts of this amended contract have a 60-month term.

**FISCAL IMPACT:**

The City will be responsible for an initial one-time construction cost of \$1250 for delivery of a second Internet connection to the S. 104<sup>th</sup> Street location.

The new monthly recurring charge for the connection to 749 Main Street will be \$1000, down from the current \$1500. The new monthly recurring charge for the connection to S. 104<sup>th</sup> Street will be \$2350. The total monthly recurring cost will go from \$1500 to \$3350.

**PROGRAM/SUB-PROGRAM IMPACT:**

This contract helps the city maintain a secure connected network for all City services.

**RECOMMENDATION:**

Staff recommends approving the new five-year Zayo agreement for increased speed and additional Internet connection.

**SUBJECT: ZAYO CONTRACT**









**DATE: AUGUST 15, 2023**

**PAGE 2 OF 2**

**ATTACHMENT(S):**

1. Original Master Service Agreement (MSA)
2. Zayo Renewal Order 2234380
3. Zayo New Order 2249441
4. Map

**STRATEGIC PLAN IMPACT:**

<input type="checkbox"/>	 <b>Financial Stewardship &amp; Asset Management</b>	<input checked="" type="checkbox"/>	 <b>Reliable Core Services</b>
<input type="checkbox"/>	 <b>Vibrant Economic Climate</b>	<input type="checkbox"/>	 <b>Quality Programs &amp; Amenities</b>
<input type="checkbox"/>	 <b>Engaged Community</b>	<input type="checkbox"/>	 <b>Healthy Workforce</b>
<input checked="" type="checkbox"/>	 <b>Supportive Technology</b>	<input type="checkbox"/>	 <b>Collaborative Regional Partner</b>



## Broadband Service Agreement

**THIS SERVICE AGREEMENT (“Agreement”) IS MADE** between the **EAGLE-Net Alliance, a Colorado intergovernmental entity (EAGLE-Net)** and **City of Louisville** (the “Member/Subscriber”) set forth below according to the following terms, conditions and provisions:

1. **IDENTITY OF THE MEMBER/SUBSCRIBER.**

<b>Name:</b>	Rip Howe	<b>Service Address:</b>
<b>Address:</b>	749 Main St	749 Main St
<b>City/State/Zip:</b>	Louisville, CO 80027	Louisville, CO 80027
<b>Business Telephone:</b>	(303) 335-4568	

2. **MEMBERS AND SUBSCRIBERS.** Any governmental or quasi-governmental entity purchasing services from EAGLE-Net must become a Member or Subscriber of EAGLE-Net, by executing the EAGLE-Net Intergovernmental Agreement (“IGA”), which is provided to Member/Subscriber as a separate document to this Agreement.
3. **SERVICES.** EAGLE-NET will provide, and the Member/Subscriber will purchase, the EAGLE-Net Services (the “Services”) as described in the attached Exhibit “A”. Member/Subscriber agrees that it will not resell the Services.
4. **RATE AND PAYMENT.** MEMBER/SUBSCRIBER will be charged and pay for the services provided pursuant to this Agreement per the attached Exhibit(s):
- Member/Subscriber will be invoiced monthly. Member/Subscriber shall pay EAGLE-NET all charges within 30 days from the invoice date. Any amount not paid when due will be subject to late interest at the lesser of 1.5% per month or the maximum rate allowed by law. Unless Member/Subscriber provides EAGLE-NET with certification of tax-exempt status, the Member/Subscriber must also pay EAGLE-NET any applicable taxes assessed in connection with Member/Subscriber’s services. EAGLE-NET may reasonably modify the payment terms or require other reasonable assurance of payment based on payment history or a material adverse change in Member/Subscriber’s financial condition.
5. **LICENSES/ACCESS.** If EAGLE-NET must access a building that houses Member/Subscriber’s premises to install, operate, or maintain Service or associated EAGLE-NET equipment, Member/Subscriber will reasonably provide access. Member/Subscriber will also provide or secure at Member/Subscriber’s expense the appropriate space and power, and any rights or licenses that may be required.
6. **TERM OF AGREEMENT.** The term of this Agreement shall commence on **2/1/2013** and shall terminate on **2/28/2016**. At the end of the initial term and each renewal term, this Agreement will continue automatically on a month-to-month basis unless one party notifies the other in writing of an intent not to renew at least 30 calendar days prior to the end of the term.
7. **TERMINATION AND NON-APPROPRIATION.** If Member/Subscriber fails to pay EAGLE-NET as provided for in this Agreement, EAGLE-NET may terminate this Agreement at its sole discretion. If EAGLE-NET fails to provide the services as required herein, and such failure is not due to a Force Majeure condition, Member/Subscriber may terminate this Agreement upon thirty (30) days written notice to EAGLE-NET.

If Member/Subscrber terminates this Agreement prior to the end of its term for any reason other than as described in this Paragraph 6, it shall be liable to EAGLE-NET for (i) 100% of any remaining installation costs, plus (ii) 50% of the monthly recurring charges for all Services that would have been due during the first year of this Agreement and 10% of the monthly recurring charges for all Services that would have been due for the remaining unexpired Term of this Agreement, plus (iii) any third party costs and expenses incurred by EAGLE-NET in so terminating such Service.

Notwithstanding any other provision herein to the contrary, this Agreement and Member/Subscrber's obligations hereunder are expressly subject to and contingent upon funds for such purpose being budgeted, appropriated, and otherwise made available by Member/Subscrber. If Member/Subscrber is unable to appropriate the payments required pursuant to this Agreement, or if such appropriations are insufficient during any fiscal year, and Member/Subscrber is not otherwise in default, Member/Subscrber may at its option elect to terminate this Agreement and be released from any further obligations upon the giving of thirty (30) days' written notice to EAGLE-NET; provided however, that Member/Subscrber may not terminate this Agreement for non-appropriation, in order to obtain functionally equivalent services from a third party. This Agreement shall terminate upon the last day of any fiscal year during which there has occurred an event of non-appropriation pursuant to this section.

8. **DISCLAIMER OF WARRANTIES.** EAGLE-NET DISCLAIMS ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, WARRANTIES OF TITLE, NONINFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE. NO ADVICE OR INFORMATION GIVEN BY EAGLE-NET, ITS AFFILIATES, AGENTS, OR CONTRACTORS OR THEIR RESPECTIVE EMPLOYEES WILL CREATE ANY WARRANTY. EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, MEMBER/SUBSCRIBER ASSUMES TOTAL RESPONSIBILITY FOR USE OF THE SERVICES.

9. **LIMITATION OF LIABILITY.** NO PARTY, ITS AFFILIATES, AGENTS, OR CONTRACTORS WILL BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL, RELIANCE, PUNITIVE, OR CONSEQUENTIAL DAMAGES OR FOR ANY LOST PROFITS OR REVENUES OR LOST DATA OR COSTS OF COVER RELATING TO THE SERVICES OR THIS AGREEMENT, REGARDLESS OF THE LEGAL THEORY UNDER WHICH SUCH LIABILITY IS ASSERTED. WITH REGARD TO ANY SERVICE RELATED CLAIM FOR DAMAGES THAT IS NOT LIMITED BY THE PRECEDING SENTENCE, MEMBER/SUBSCRIBER'S EXCLUSIVE REMEDIES FOR SUCH CLAIM WILL BE LIMITED TO THE TOTAL MONTHLY RECURRING CHARGES ("MRCs") OR USAGE CHARGES PAID BY THE MEMBER/SUBSCRIBER TO EAGLE-NET FOR THE AFFECTED SERVICE IN THE ONE MONTH IMMEDIATELY PRECEDING THE OCCURRENCE OF THE EVENT GIVING RISE TO THE CLAIM. THE TOTAL AGGREGATE LIABILITY FOR MEMBER/SUBSCRIBER AND EAGLE-NET RELATED TO THIS AGREEMENT WILL NOT EXCEED THE TOTAL MRCs AND USAGE CHARGES PAID BY THE MEMBER/SUBSCRIBER TO EAGLE-NET UNDER THIS AGREEMENT IN THE THREE MONTHS IMMEDIATELY PRECEDING THE OCCURRENCE OF THE EVENT GIVING RISE TO THE CLAIM (EACH "DAMAGE CAP").

This limitation of liability and Damage Cap will not apply to Member/Subscrber's payment obligation for charges under this Agreement.

10. **NON-WAIVER.** The failure of either party to exercise any of its rights under this agreement for a breach thereof shall not be deemed to be a waiver of such rights or a waiver of any subsequent breach. EAGLE-Net does not waive the protections, rights and limitations of the Colorado Governmental Immunity Act, C.R.S. 24-10-101 *et seq.*, and any other applicable laws.

11. **NOTICES.** Any notice given in connection with this Agreement shall be in writing and shall be delivered either by hand, by certified mail, return receipt requested, or by overnight courier service, to the



party at the party's address stated herein. Any party may change its address stated herein by giving notice of the change in accordance with this paragraph.

12. **FORCE MAJEURE.** A party shall not be held in default under, or in noncompliance with, the provisions of this Agreement, nor suffer any enforcement or imposition of damages relating to noncompliance or default, where such noncompliance or alleged defaults occurred or were caused by circumstances reasonably beyond the ability of the party to anticipate and control, including, but not limited to, war or riots, civil disturbances, floods or other natural catastrophes, labor stoppages, slow downs or power outages.
13. **CHOICE OF LAW/VENUE.** Any dispute under this Agreement or related to this Agreement shall be decided in accordance with the laws of the State of Colorado. Venue for any proceeding shall be in Denver, Colorado.
14. **ENTIRE AGREEMENT.** This Agreement constitutes the entire agreement between the parties and supersedes all prior oral or written agreements or understandings relating to this subject matter.
15. **SEVERABILITY.** If any section, subsection, paragraph, term or provision of this Agreement is determined to be illegal, invalid or unconstitutional by any court or agency of competent jurisdiction, such determination shall have no effect on the validity of any other section, subsection, paragraph, term or provision of this Agreement, all of which will remain in full force and effect for the term of the Agreement.
16. **AMENDMENTS.** This Agreement may be supplemented, amended or revised only in writing by agreement of both parties.

**EAGLE-Net Alliance, a Colorado intergovernmental entity:**

11800 Ridge Parkway, Suite 450  
Broomfield, CO 80021  
(720) 210-9500

By: \_\_\_\_\_

Date: \_\_\_\_\_

Title: \_\_\_\_\_

**MEMBER/SUBSCRIBER:**

City of Louisville

By: Malcolm Fleming

Date: 1/29/13

Name: Malcolm Fleming

Title: City Manager

Entity: \_\_\_\_\_

EXHIBIT "A"

Attached to and made a part of that certain

**Price Quote:** City of Louisville

**36 Month Pricing**

Bandwidth Amount Mbps	Monthly Recurring Cost, Transport and ISP	Cost per Meg	Annual Cost, Transport and ISP	One Time Cost	Service Start Date
100	\$870.20	\$8.70	\$10,442.40	\$1,500.00	2/1/2013

Note 1: The monthly Usage Charge is presented as Not-to-Exceed pricing—As the member participants and the collective amount of Internet bandwidth purchased by EAGLE-Net increases, the cost /Mbps of Internet bandwidth may decrease.
Note 2: Starting bandwidth is 100 Meg. If changes need to be made, please notify before Feb 1, 2013.
Note 3: Changes in bandwidth on the above schedule can be increased with 6 week notice and paying the One Time Costs if applicable.
Note 4: Six external IP Addresses are available with this contract. Additional addresses can be quoted.
Note 5: Basic DNS services are included as part of this quote (A and NS records) . Additional DNS services can be quoted.
Note 6: The IGA is still needed



# Web Site Contact Report

**From:** Monday, May 11, 2015  
**Through:** Monday, May 11, 2015

Inquiry Type: Interested in EAGLE-Net Services

First Name	Last Name	Job Title	Organization	
Clifford	Swett	Network Administrator	City of Louisville Colorado	5/11/2015 11:25 AM
	<a href="mailto:cliffs@louisvilleco.gov">cliffs@louisvilleco.gov</a>	(303) 335-4578	<a href="http://www.louisvilleco.gov/">http://www.louisvilleco.gov/</a>	
<b>Comments:</b>	Interested in Layer 2 Virtual Private LAN Service between the folowing locations			
	749 Main Street Louisville CO 80027			
	and			
	739 S. 104th Street Louisville, CO 80027			
	Eaglenet currently provides our internet service with 100MB fiber into our datacenter.			



## Order Form

## Order Information

<b>Contracting Entity</b>	City of Louisville, a Colorado Municipal Corporation	<b>Billing Account</b>	City of Louisville	<b>Account Number</b>	18253
<b>Representative</b>	Kenneth Kovacs	<b>Phone</b>		<b>Email</b>	kenneth.kovacs@zayo.com

## Renewal Order - 2234380

## Order Details

Order Details		Product Details		Protection and Feature Details	
Order ID	2234380	Product Category	DIA	Burstable IP Service	Yes
Order Type	Renewal	Bandwidth	1G		
Order Term	60 months	Bandwidth Type	Standard		
Product	DIA	Price Per Mb for Burst Usage	USD 0.900		
Service	307304	Circuit Id	IPYX/116152//ZYO		

## Order Component(s)

SOC Type	Term	Address	Port Handoff Sp	Bandwidth	Lateral A	Handoff	Loc Fib Path Div	Local Network Protection	Rate Limit	Rate Limit to	Initials
Renewal	60	749 Main St/FI-1/Rm-MPOE Louisville, CO 80027	GigE	1G		Copper (RJ-45 Electrical)					WDFN

## Order Component(s)

Address	In-Building Charges	Conduit	Riser Cable	Cross Connect	Customer LOC Space & Power	New Customer Loc Device	CFA Provided by	Initials
749 Main St/FI-1/Rm-MPOE Louisville, CO 80027	Customer Responsibility							WDFN

## Pricing

Product	Service Item Desc	Component	Component Address	Type	Status	Quantity	Amount	Items Total
DIA	Interface Port Charge	SOC-0004929080	749 Main St/FI-1/Rm-MPOE Louisville CO 80027	MRC	Pending Install	1	USD 1,000.00	USD 1,000.00
Monthly Recurring Charges Total:								USD 1,000.00

## Contract Details

Details	
Governing MSA	City of Louisville Broadband Service Agreement (EGL) 2013-02-01

## Order Notes

**Expiration Date** Pricing on this Order Form expires if Order is not signed prior to September 02, 2023

**Order ID(s): 2234380**

**Grand Total Costs**

Service Item Desc	Items Total
Monthly Recurring Charges Total:	USD 1,000.00

**Customer Contact Information:**

Role(s)	Name	Phone	Email
Billing Contact	Accounts Payable-Finance Department	(303) 335-4568	chrisn@louisvilleco.gov
Install; Primary	Paulina Bennett	+13033354568	pbennett@louisvilleco.gov

**Signatures**

<b>Zayo Group LLC</b>	<b>City of Louisville, a Colorado Municipal Corporation</b>
Signature:	Signature:
Printed Name:	Printed Name:
Date:	Date:
Title:	Title:
<hr/>	
	<b>City of Louisville, a Colorado Municipal Corporation</b>
	Signature:
	Printed Name:
	Date:
	Title:

**Terms and Conditions**

- Customer acknowledges that Customer is ordering the access and service(s) described above ("Offering") from Zayo Group, LLC, and or its applicable affiliate or subsidiary ("Zayo"). This Customer Order shall be governed by and subject to the applicable contract documents between Customer and Zayo referenced above (collectively, the "Agreement"). If Customer has not executed an Agreement and/or no Agreement is referenced in this Customer Order, then this Customer Order shall be governed by the terms and conditions of Zayo's Master Customer Agreement and applicable Customer Schedule in effect as of the date of this Customer Order, incorporated herein by this reference and available upon request. This Customer Order is subject to availability and shall only become binding upon acceptance by an authorized Zayo representative. Customer acknowledges that upon Zayo's acceptance, this Customer Order shall become a non-cancellable, binding obligation for the purchase of the Offering for the Offering Term stated above. By signing this Customer Order, Customer further acknowledges that it has read and understands the terms and conditions of this Customer Order and Customer's signatory represents that he/she is authorized to sign this Customer Order on Customer's behalf.
- All charges for the Offering in this Customer Order are exclusive of any taxes and other fees and surcharges (as defined below). Except for taxes based on Zayo's net income, Customer shall be responsible for payment of all applicable taxes that arise in any jurisdiction, including, without limitation, value added, consumption, sales, use, gross receipts, excise, access, and bypass ("Taxes"). Customer shall also be responsible for any property tax surcharges, additional government fees (including without limitation Federal and State regulatory fees), franchise fees, rights of way fees or charges, license or permit fees, and any other duties, fees, charges or surcharges imposed on incident to, or based upon the provision, sale, or use of the Offerings. ("Other Fees and Surcharges") If applicable to the Offerings being purchased by Customer, such Other Fees and Surcharges will be listed on Customer's Invoice. If Customer is entitled to an exemption from any of the Taxes or Other Fees and Surcharges, Customer is responsible for presenting Zayo with a valid exemption certificate (in a form reasonably acceptable to Zayo). Zayo will give effect to any valid exemption certificate provided in accordance with the foregoing sentence to the extent it applies to any Offering billed by Zayo to Customer following Zayo's receipt of such exemption certificate. Customer shall indemnify, defend and hold Zayo harmless from payment and reporting of all such Taxes and Other Fees and Surcharges, including costs, expenses, and penalties incurred by Zayo in settling, defending or appealing any claims or actions brought against Zayo related to, or arising from, the non-payment of such Taxes and/or Other Fees and Surcharges.
- In support of Zayo meeting the FOC Date, Customer specifically acknowledges that Customer is responsible for all connectivity (and related costs) to Zayo's Components (i.e. cross-connections between (i) the Zayo demarcation point and Zayo's Components and (ii) Zayo's Components and Customer Components). In addition, Customer shall be responsible for securing all rights and paying the related costs to connect to Zayo's Components, for securing all rights and paying the related costs to access, occupy, and conduct typical telecommunication operations within each respective building (including any necessary rights for Zayo to enter and access each building), and for providing all necessary cable pathways (all of the preceding may include, but not be limited to, construction permits and underlying rights, building access and/or occupancy agreements, building access and/or occupancy fees, lateral fees, riser fees, cross-connects and cross-connect fees, coordination at any third party owned location, and, where applicable, necessary space for Zayo's fiber termination panel and Zayo's Components). All of the rights above, collectively, shall be referred to as "Customer Requirements" and the related costs and fees, collectively, shall be referred to as "In-Building Charges". Unless this Customer Order indicates that Zayo is responsible for In-Building Charges, Customer shall reimburse Zayo in the event that a third party bills Zayo for any In-Building Charges. Customer acknowledges that any delay in Customer providing such Customer Requirements may delay Zayo from completing work at any location. In the event that Customer has not provided the Customer Requirements in time to allow Zayo to complete work at any location on or before the FOC Date, then Zayo may continue with the acceptance procedures to the extent possible and deem the Offering delivered and accepted.
- If Customer is discontinuing Offering (s) of any type for any reason, Customer must submit the disconnection request through the form located at <https://www.zayo.com/disconnectservice/>. For notice of disconnect to be effective, all information necessary for Zayo to complete the disconnect must be provided at time of request such as; Circuit ID, Customer ordered 3rd Party Cross Connect Vendor's Disconnect Firm Order Commitment ("FOC") or the 3rd Party Cross Connect Vendor's Disconnect Order Number. Failure to provide complete and accurate information may delay or impact Zayo's ability to process the disconnection request. Customers will be responsible for outstanding amounts due for Services through the actual date of termination, inclusive of any early termination charges, if applicable.



## Order Form

## Order Information

<b>Contracting Entity</b>	City of Louisville, a Colorado Municipal Corporation	<b>Billing Account</b>	City of Louisville	<b>Account Number</b>	18253
<b>Representative</b>	Kenneth Kovacs	<b>Phone</b>		<b>Email</b>	kenneth.kovacs@zayo.com

## New Order - 2249441

## Order Details

Order Details		Product Details		Protection and Feature Details	
Order ID	2249441	Product Category	DIA	Burstable IP Service	No
Order Type	New	Bandwidth	1G	Core-Network Fiber Path Diversity	No
Order Term	60 months	Bandwidth Type	Standard	Core-Network Protection	No
Product	DIA	Max Burst Speed	1G	Special Routing Required	No

## Order Component(s)

SOC Type	Term	Address	Port Handoff Sp	Bandwidth	Lateral A	Handoff	Loc Fib Path Div	Local Network Protection	Rate Limit	Rate Limit to	Initials
New	60	739 S 104th St/FI-1/Rm-MPOE Louisville, CO 80027	GigE	1G	One (Single)	2-Fiber (Optical SMF)				N/A	MSDFW

## Order Component(s)

Address	In-Building Charges	Conduit	Riser Cable	Cross Connect	Customer LOC Space & Power	New Customer Loc Device	CFA Provided by	Initials
739 S 104th St/FI-1/Rm-MPOE Louisville, CO 80027	Customer Responsibility	Customer Responsibility	Customer Responsibility	Customer Responsibility		Yes	Zayo	MSDFW

## Pricing

Product	Service Item Desc	Component	Component Address	Type	Status	Quantity	Amount	Items Total
DIA	Interface Port Charge	SOC-0004947863	739 S 104th St/FI-1/Rm-MPOE Louisville CO 80027	MRC	Pending Install	1	USD 1,175.00	USD 1,175.00
DIA	Installation Fee	SOC-0004947863	739 S 104th St/FI-1/Rm-MPOE Louisville CO 80027	NRC	Pending Install	1	USD 1,250.00	USD 1,250.00
DIA	Interface Port Charge	SOC-0004947863	739 S 104th St/FI-1/Rm-MPOE Louisville CO 80027	MRC	Pending Install	1	USD 1,175.00	USD 1,175.00
DIA	Connected IPv6 Address - None	SOC-0004947863	739 S 104th St/FI-1/Rm-MPOE Louisville CO 80027	MRC	Pending Install	1	USD 0.00	USD 0.00
DIA	Connected IPv4 Address - IPv4/31	SOC-0004947863	739 S 104th St/FI-1/Rm-MPOE Louisville CO 80027	MRC	Pending Install	1	USD 0.00	USD 0.00
Monthly Recurring Charges Total:								USD 2,350.00
Non Recurring Charges Total:								USD 1,250.00

## Contract Details

Details	
Governing MSA	City of Louisville Broadband Service Agreement (EGL) 2013-02-01

## Order Notes

**Expiration Date** Pricing on this Order Form expires if Order is not signed prior to September 02, 2023



**Order ID(s): 2249441**

**Grand Total Costs**

Service Item Desc	Items Total
Monthly Recurring Charges Total:	USD 2,350.00
Non Recurring Charges Total:	USD 1,250.00

**Customer Contact Information:**

Role(s)	Name	Phone	Email
Billing Contact	Accounts Payable-Finance Department	(303) 335-4568	chrisn@louisvilleco.gov
Install; Primary	Paulina Bennett	+1 (720) 948-1164	pbennett@louisvilleco.gov

**Signatures**

**Zayo Group LLC**

**City of Louisville, a Colorado Municipal Corporation**

Signature:

Signature:

Printed Name:

Printed Name:

Date:

Date:

Title:

Title:

**City of Louisville, a Colorado Municipal Corporation**

Signature:

Printed Name:

Date:

Title:

**Terms and Conditions**

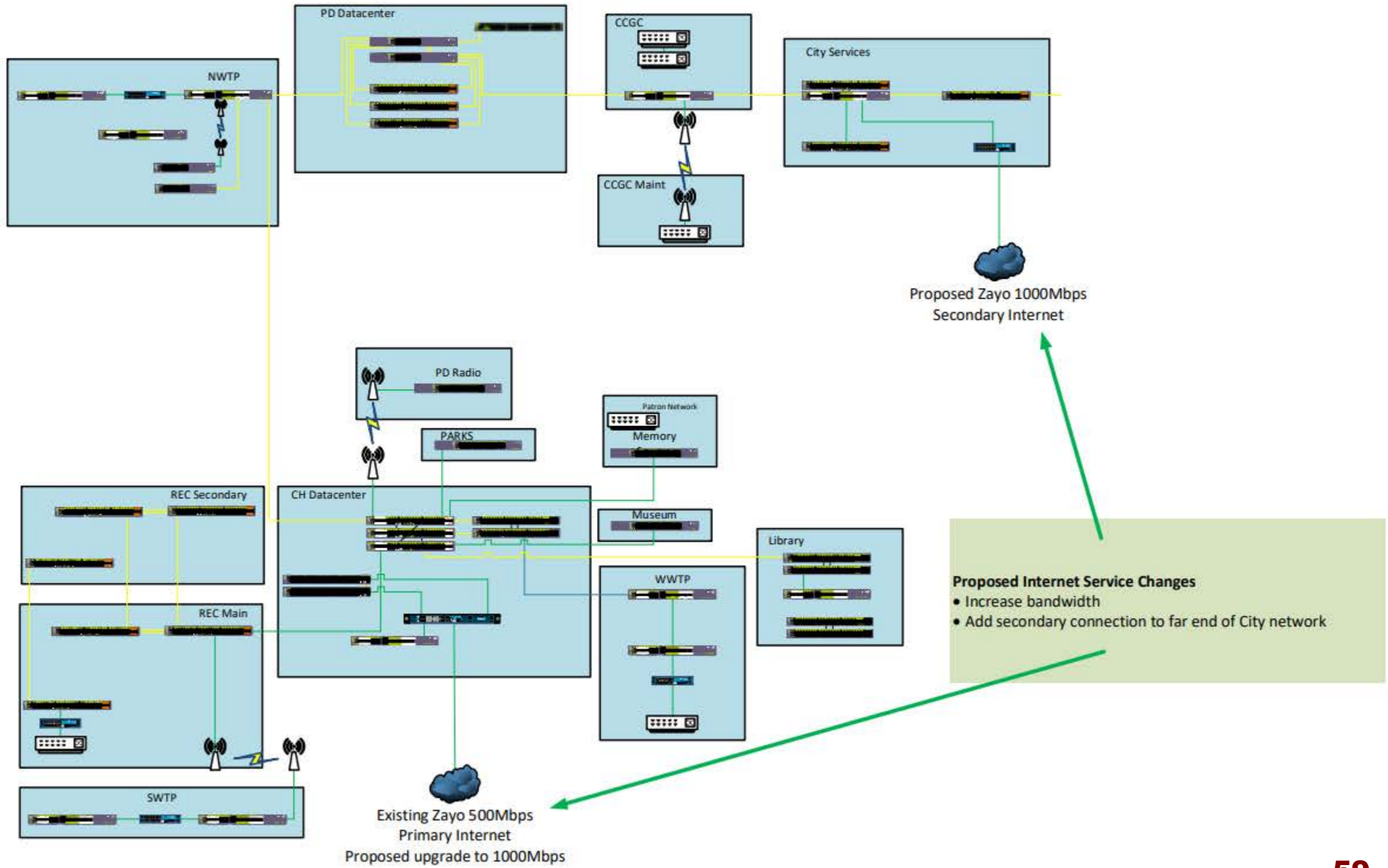
1. Customer acknowledges that Customer is ordering the access and service(s) described above ("Offering") from Zayo Group, LLC, and/or its applicable affiliate or subsidiary ("Zayo"). This Customer Order shall be governed by and subject to the applicable contract documents between Customer and Zayo referenced above (collectively, the "Agreement"). If Customer has not executed an Agreement and/or no Agreement is referenced in this Customer Order, then this Customer Order shall be governed by the terms and conditions of Zayo's Master Customer Agreement and applicable Customer Schedule in effect as of the date of this Customer Order, incorporated herein by this reference and available upon request. This Customer Order is subject to availability and shall only become binding upon acceptance by an authorized Zayo representative. Customer acknowledges that upon Zayo's acceptance, this Customer Order shall become a non-cancellable, binding obligation for the purchase of the Offering for the Offering Term stated above. By signing this Customer Order, Customer further acknowledges that it has read and understands the terms and conditions of this Customer Order and Customer's signatory represents that he/she is authorized to sign this Customer Order on Customer's behalf.

2. All charges for the Offering in this Customer Order are exclusive of any taxes and other fees and surcharges (as defined below). Except for taxes based on Zayo's net income, Customer shall be responsible for payment of all applicable taxes that arise in any jurisdiction, including, without limitation, value added, consumption, sales, use, gross receipts, excise, access, and bypass ("Taxes"). Customer shall also be responsible for any property tax surcharges, additional government fees (including without limitation Federal and State regulatory fees), franchise fees, rights of way fees or charges, license or permit fees, and any other duties, fees, charges or surcharges imposed on incident to, or based upon the provision, sale, or use of the Offerings. ("Other Fees and Surcharges") If applicable to the Offerings being purchased by Customer, such Other Fees and Surcharges will be listed on Customer's Invoice. If Customer is entitled to an exemption from any of the Taxes or Other Fees and Surcharges, Customer is responsible for presenting Zayo with a valid exemption certificate (in a form reasonably acceptable to Zayo). Zayo will give effect to any valid exemption certificate provided in accordance with the foregoing sentence to the extent it applies to any Offering billed by Zayo to Customer following Zayo's receipt of such exemption certificate. Customer shall indemnify, defend and hold Zayo harmless from payment and reporting of all such Taxes and Other Fees and Surcharges, including costs, expenses, and penalties incurred by Zayo in settling, defending or appealing any claims or actions brought against Zayo related to, or arising from, the non-payment of such Taxes and/or Other Fees and Surcharges.

3. In support of Zayo meeting the FOC Date, Customer specifically acknowledges that Customer is responsible for all connectivity (and related costs) to Zayo's Components (i.e. cross-connections between (i) the Zayo demarcation point and Zayo's Components and (ii) Zayo's Components and Customer Components). In addition, Customer shall be responsible for securing all rights and paying the related costs to connect to Zayo's Components, for securing all rights and paying the related costs to access, occupy, and conduct typical telecommunication operations within each respective building (including any necessary rights for Zayo to enter and access each building), and for providing all necessary cable pathways (all of the preceding may include, but not be limited to, construction permits and underlying rights, building access and/or occupancy agreements, building access and/or occupancy fees, lateral fees, riser fees, cross-connects and cross-connect fees, coordination at any third party owned location, and, where applicable, necessary space for Zayo's fiber termination panel and Zayo's Components). All of the rights above, collectively, shall be referred to as "Customer Requirements" and the related costs and fees, collectively, shall be referred to as "In-Building Charges". Unless this Customer Order indicates that Zayo is responsible for In-Building Charges, Customer shall reimburse Zayo in the event that a third party bills Zayo for any In-Building Charges. Customer acknowledges that any delay in Customer providing such Customer Requirements may delay Zayo from completing work at any location. In the event that Customer has not provided the Customer Requirements in time to allow Zayo to complete work at any location on or before the FOC Date, then Zayo may continue with the acceptance procedures to the extent possible and deem the Offering delivered and accepted.

4. If Customer is discontinuing Offering (s) of any type for any reason, Customer must submit the disconnection request through the form located at <https://www.zayo.com/disconnectservice/>. For notice of disconnect to be effective, all information necessary for Zayo to complete the disconnect must be provided at time of request such as; Circuit ID, Customer ordered 3rd Party Cross Connect Vendor's Disconnect Firm Order Commitment ("FOC") or the 3rd Party Cross Connect Vendor's Disconnect Order Number. Failure to provide complete and accurate information may delay or impact Zayo's ability to process the disconnection request. Customers will be responsible for outstanding amounts due for Services through the actual date of termination, inclusive of any early termination charges, if applicable.





**SUBJECT: RESOLUTION NO. 48, SERIES 2023 – A RESOLUTION  
APPROVING AN INTERNAL DECARBONIZATION PLAN FOR  
THE CITY OF LOUISVILLE ORGANIZATION**

**DATE: AUGUST 15, 2023**

**PRESENTED BY: KAYLA BETZOLD, SUSTAINABILITY MANAGER  
KEVIN FREY, FACILITIES MANAGER  
KURT KOWAR, DIRECTOR OF PUBLIC WORKS  
EMILY HOGAN, ASSISTANT CITY MANAGER**

**SUMMARY:**

The 2023 City Council Work Plan includes an item for “City Climate Change/Greenhouse Gas Reduction Initiatives” to “complete and begin implementation of internal strategic decarbonization plan for City facilities and operations”.

In November 2022, the City contracted with McKinstry Essention, LCC to complete an engineering, mechanical and financial analysis for each of its municipal facility sites and associated fleet and equipment with the goal of creating a strategic roadmap for cost-effective electrification and decarbonization of all City buildings, fleet, equipment and operations by 2030.

Staff and the McKinstry team are presenting the Internal Decarbonization Plan Strategic Roadmap which includes key findings, a 3-phase roadmap for implementation, an analysis of project components, including zero carbon electricity options, financial considerations, decarbonization co-benefits, and funding strategies.

**BACKGROUND:**

In 2019, City Council advanced its commitment to climate action by unanimously adopting Resolution 25-2019, setting clean energy and carbon emission reduction goals for the municipality and larger community. The municipal climate action goals are as follows:

- Meet all of Louisville’s municipal electric needs with 100% carbon-free sources by 2025
- Reduce core municipal greenhouse gas (GHG) emissions annually below the 2016 baseline through 2025 (2016 baseline is 4,016 mtCO<sub>2</sub>)

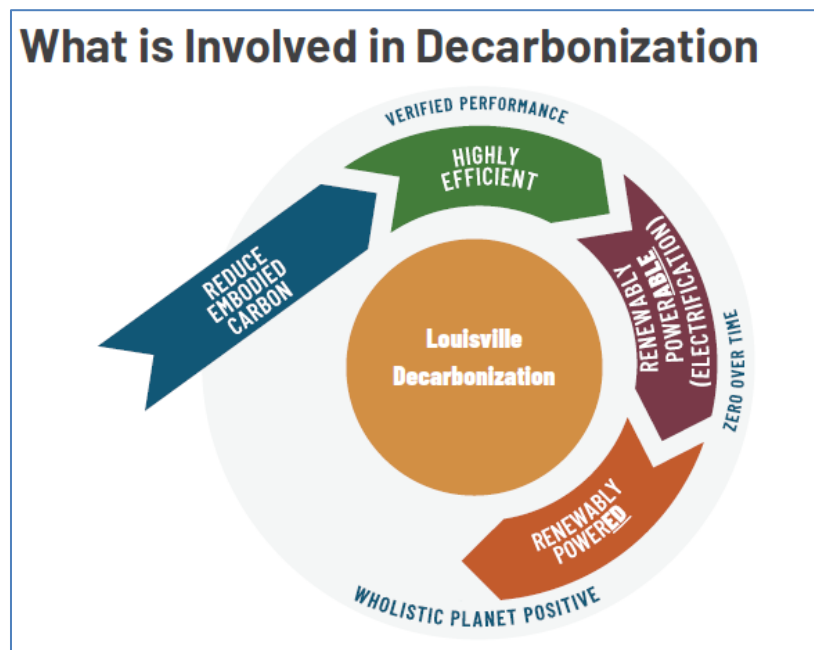
As of March 2020, all City facility electricity comes from carbon-free sources, which is supplied as a premium charge added to each premise’s monthly electricity consumption through utility billing (Renewable\*Connect and Windsource). City facilities also participate in community solar gardens in Boulder and Weld counties and on-site solar at the Water and Wastewater Treatment Plants.

**Currently, the City is not meeting the municipal goal to decrease GHG emissions from building energy use and fleet fuel annually from the 2016 baseline.** In 2021, municipal greenhouse gas emissions associated with building energy use and fleet fuel decreased, but are significantly higher than the baseline year of 2016, likely due to the Recreation Center expansion in 2018.

Decarbonization Overview

Decarbonization is the process of eliminating all activities that generate CO<sub>2</sub> and other greenhouse gases, known as CO<sub>2</sub>e (equivalent). Today, the City of Louisville generates 3,400 metric tons of CO<sub>2</sub>e annually through operation of its facilities and use of fleet and equipment, which is equivalent to the carbon generated by 430 homes in one year.

Although the City currently purchases renewable energy credits to ensure all facility electricity comes from carbon-free sources, the removal of fossil fuel burning equipment is necessary for the City to achieve decarbonization and greenhouse gas reduction goals. The decarbonization process is outlined below:



Eliminating Louisville’s carbon footprint requires a focus on four main areas:

- **Embodied Carbon** – Retrofitting existing buildings, rather than tearing down and building new zero carbon buildings, reduces the carbon inherent in the construction process.
- **Efficiency & Load Reduction** – Reducing building energy use, and thereby reducing carbon emissions, reduces the amount of renewable energy needed for total decarbonization.

- **Renewably Powerable** – Reducing on-site fossil fuel burning via electrification allows the building to be powered by renewable sources. When building mechanical systems and vehicles are transitioned from gas to electric, they are then *capable* of being powered by renewable energy through the electricity grid.
- **Renewably Powered** – Optimizing the mix of available renewable zero-carbon sources leads to decarbonization at the best financial value for the City of Louisville.

### Project Overview

Beginning in June 2022, a staff team met regularly to discuss department priorities in regards to the decarbonization of City facilities, fleet and equipment.

Since November, McKinstry staff have completed walk through assessments of all City facilities, conducted City staff interviews to learn more about goals and priorities of each division, hosted technical workshops with relevant departments to ensure proper on-site solar designs and feasible mechanical electrification, and conducted financial workshops to review grants, funding and financial options to determine most appropriate implementation strategies. Staff and McKinstry presented an update to Council on April 4, 2023 and received direction to move forward with hybrid electrification and to extend the decarbonization goal from 2030 to 2040 to ensure project cost effectiveness.

Core project principles and concepts are outlined below.

- **Be fiscally responsible and avoid replacing equipment before it is worn out.** Allocate the replacement budget to the decarbonized alternative instead, which will typically save 25-50% of the capital cost. Also work within the context of existing equipment and reuse existing systems wherever possible. Completely tearing out and replacing systems has higher embodied carbon, is usually more costly, and always more disruptive.
- **Use proven technologies.** Full zero carbon performance can be achieved via current technologies and the Plan does not include recommendations for untested technologies.
- **Provide the greatest value for least cost.** Full decarbonization, particularly electrification, is expensive. It is critical to pursue the various financial incentives available at the local, state, and federal level. In addition, many decarbonization measures can provide co-benefits, providing value streams that offset costs.

### Key Project Outcomes and Recommendations

Through the project, key findings have been identified and are outlined below.

1. **Clear, full, decarbonization pathways exist for all City buildings and fleet.** Space heating is the primary energy end-use for the City, with building gas use accounting for 47% of Louisville’s annual energy and 83% of overall municipal emissions.

- 2. Efficiency and load reduction strategies often have lower life-cycle costs than current electricity costs.** By implementing energy efficiency measures, the City will save more money in utility cost savings over time in comparison to the electricity costs if the measures were not implemented. These measures are outlined in greater detail in the individual building reports and are recommended for immediate implementation.
- 3. Hybrid building electrification is an excellent short and mid-term approach.** Hybrid mechanical heating systems (those that use primarily electric heat pumps with a natural gas backup) achieve substantial carbon reductions (i.e. 75%+) while reducing overall costs up to 50%.
- 4. City-owned renewable electricity generation will reduce utility costs and provide greater benefit to the Louisville community.** Substantial opportunities exist for on-site renewable electricity. A combination of Inflation Reduction Act and Xcel Energy incentives make this a very attractive option for the City and result in on-site renewable electricity being less expensive than utility-provided electricity, while increasing resiliency and producing electricity locally.

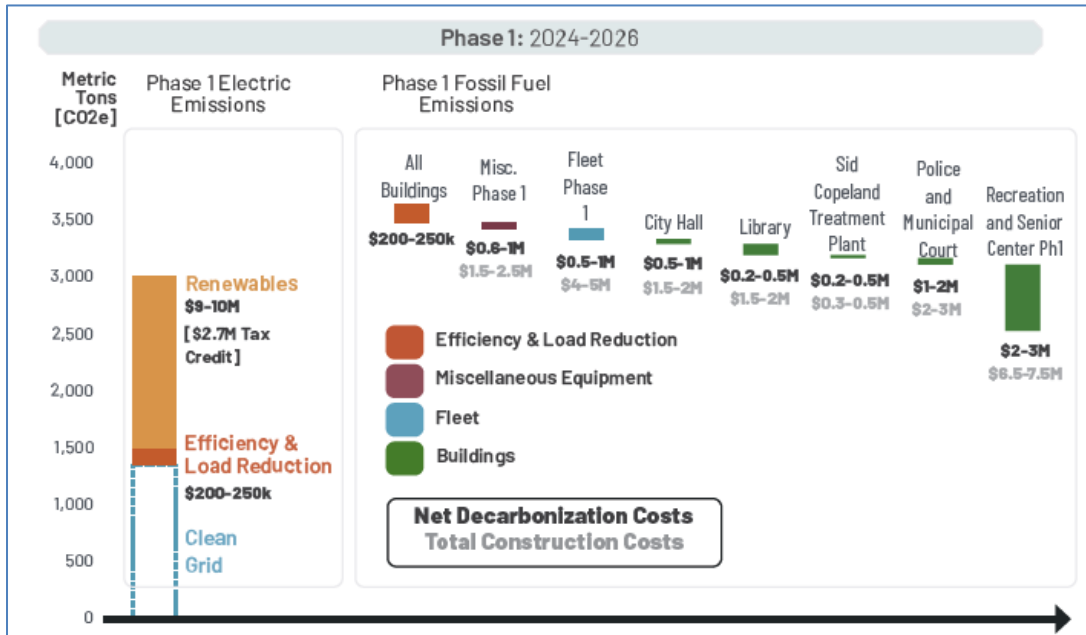
Based on the key project findings and outcomes, the project team recommends:

- 100% decarbonization by 2040
- Retention of 100% renewable electricity (underway)
- Decarbonization Plan progress update every 5-7 years to reevaluate technologies and economic opportunities

*Project Phasing and Costs*

This project is recommended to be implemented in three phases, outlined below.

**Phase 1 (2024 – 2026)**



**Overview**






- **Renewable Energy** – Renewables are recommended to be implemented in phase 1 to take advantage of existing federal and state funding options. The full renewables scope includes 2.5 MW of on-site solar installed at 8 sites citywide.
- **Efficiency & Load Reduction** – Efficiency measures are recommended to be implemented in phase 1 to realize any potential downsizing for mechanical and electrical systems as buildings are upgraded in the future.
- **Fleet Electrification** – 62 vehicles will reach the end of useful life in phase 1. Of these vehicles, 26 currently have electric vehicle (EV) equivalents and are recommended to be replaced with electric versions. 36 of the vehicles are police or heavy duty vehicles that do not currently have an EV equivalent. It is recommended to replace those vehicles with internal combustion engine (ICE) vehicles and transition to EV in phase 3 when technology improves.
- **EV Charging** – EV charging is recommended to be installed at City Hall, Public Library, Sid Copeland Water Treatment Plant, Police & Municipal Courts and the Recreation & Senior Center.
- **Equipment Electrification** – 40% of equipment is recommended to be replaced in phase 1.
- **Recreation Center** – The Recreation & Senior Center measures are split into two phases. The first phase addresses the majority of mechanical systems that are near end-of-life and one pool unit. The Recreation & Senior Center is the City’s largest building and highest energy user, accounting for over 50% of municipal emissions.



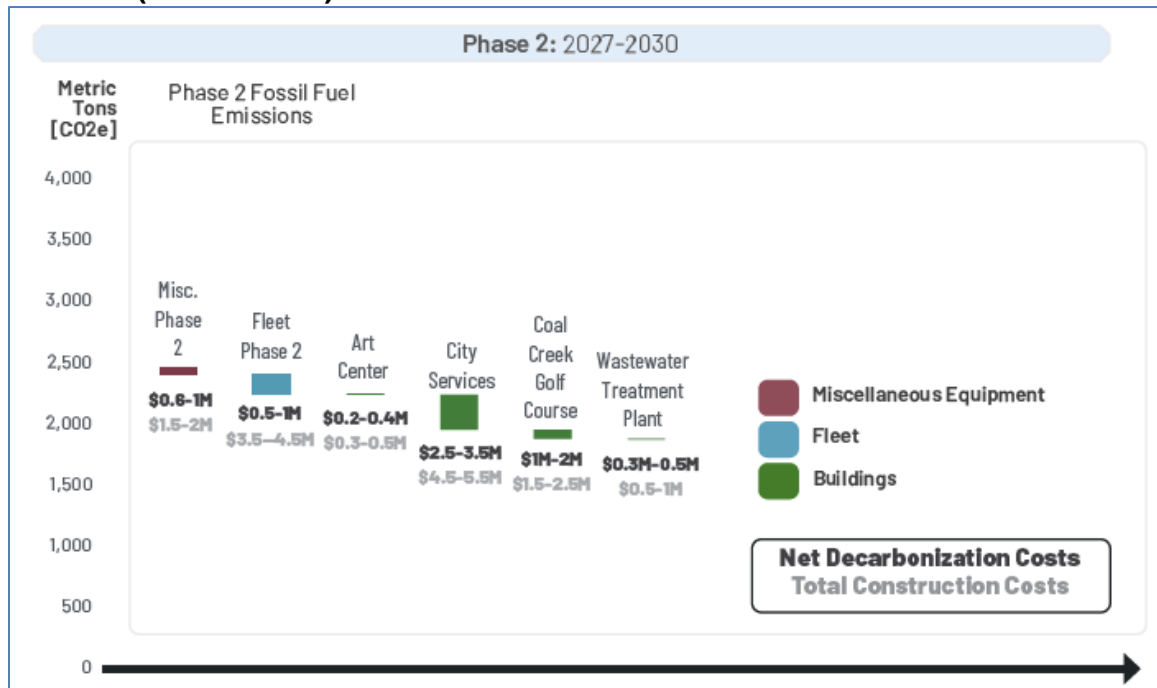
**Costs**

A summary of phase 1 costs are outlined below. The table includes carbon reductions for each measure type, total construction costs, like-for-like construction costs which illustrate the costs associated with fossil fuel replacements and the net decarbonization costs, which does not include utility cost savings, grants and funding opportunities. For more information about costs, see the Financial Analysis section below.

**Phase 1 Summary Table**

Measures	Life Cycle Carbon Reduced [tonnes]	Total Construction Costs	Like-Like Construction Costs	Net Decarbonization Costs
 Building Hybrid Electrification	13,000	\$12-16M	\$8.1-9M	\$3.9-7M
 Fleet Electrification	1,300	\$4-5M	\$3.5-4M	\$0.5-1M
 Miscellaneous Electrification	1,000	\$1.5-2.5M	\$0.9-1.5M	\$0.6-1M
 Efficiency & Load Reduction	-	\$0.4-0.5M	-	\$0.4-0.5M
 Renewables	-	\$9-10M	-	\$9-10M
<b>Total</b>	<b>15,300</b>	<b>\$27-34M</b>	<b>\$13-15M</b>	<b>\$14-20M</b>

**Phase 2 (2027 – 2030)**








*Overview*

- City Services – Significant upgrades occur at the City Services building where both major building electrification upgrades and EV charging upgrades are proposed. The EV charging scope at City Services is the largest as it will be the home to the majority of the City’s fleet.
- Fleet Electrification – 35 vehicles will reach the end of useful life in phase 2. Of these vehicles, 24 currently have EV equivalents and are recommended to be replaced with electric versions. 11 of the vehicles are police of heavy duty vehicles that do not currently have an EV equivalent. It is recommended to replace those vehicles with ICE vehicles and transition to EV in phase 3 when technology improves.
- EV Charging – Additional EV charging stations are recommended to be installed at the Coal Creek Golf Course and Wastewater Treatment Plant.
- Equipment Electrification – 40% of equipment is recommended to be replaced in phase 2.

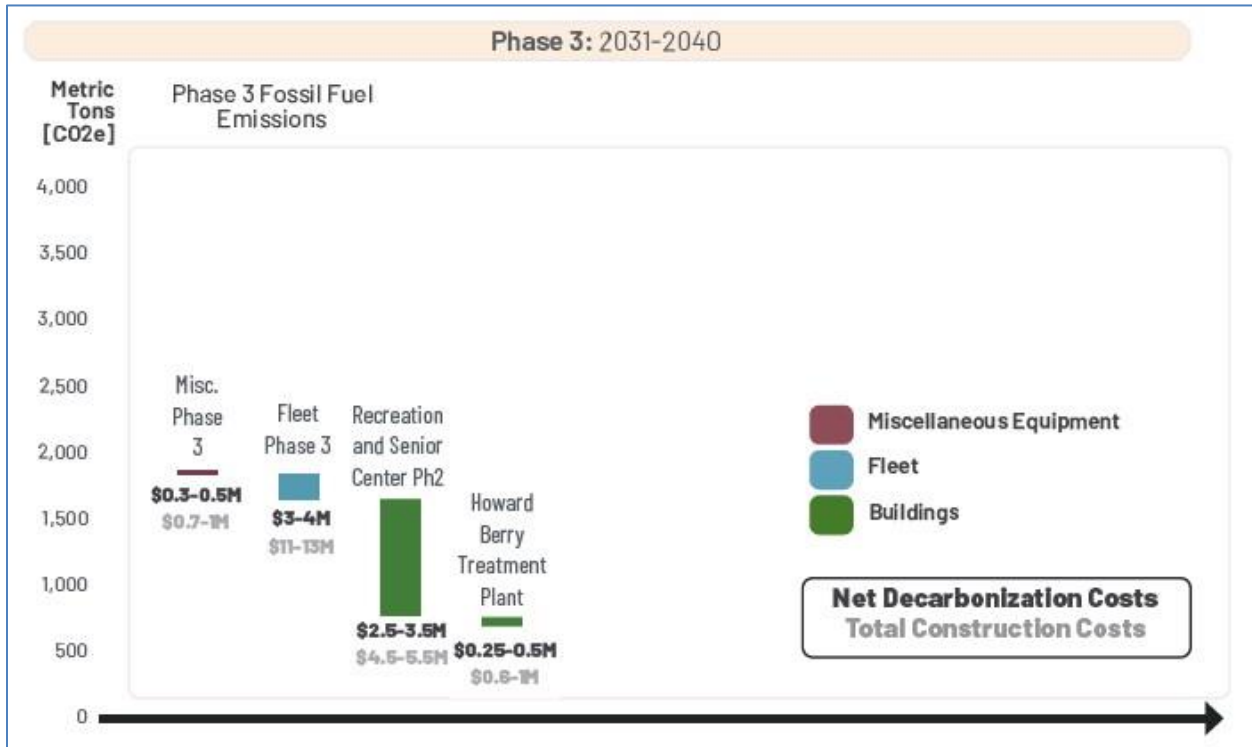
*Costs*

A summary of phase 2 costs are outlined below. For more information about costs, see the Financial Analysis section below.

**Phase 2 Summary Table**

Measures	Life Cycle Carbon Reduced [tonnes]	Total Construction Costs	Like-Like Construction Costs	Net Decarbonization Costs
 Building Hybrid Electrification	6,000	\$6.8-10.1M	\$2.8-3.7M	\$4-6.4M
 Fleet Electrification	2,400	\$3.5-4.5M	\$3-3.5M	\$0.5-1M
 Miscellaneous Electrification	1,000	\$1.5-2M	\$0.9-1M	\$0.6-1M
 Efficiency & Load Reduction	-	-	-	-
 Renewables	-	-	-	-
<b>Total</b>	<b>9,400</b>	<b>\$12-17M</b>	<b>\$7-8M</b>	<b>\$5-8M</b>

**Phase 3 (2031 – 2040)**



**Overview**






Phase 3 focuses on fleet electrification for vehicles that did not have an acceptable electric equivalent in phase 1 or 2. Additionally, phase 3 includes building electrification of equipment that did not reach the end of useful life in phase 1 or 2.

- Fleet Electrification – 116 vehicles will reach the end of useful life in phase 3. Of these vehicles, it is estimated that 115 will have an EV equivalent, with 68 EVs recommended from 2031 – 2035 and 48 EVs recommended from 2036 – 2040. Reevaluation of current technology is recommended during phase 3 fleet electrification.
- Recreation & Senior Center – The remaining Recreation & Senior Center upgrades are recommended to be completed during phase 3, with the exception of remaining gas rooftop units (RTUs) due to existing electrical capacity. It is recommended to re-evaluate existing electrical capacity at this site during phase 3 to understand if additional RTUs can be electrified.
- Equipment Electrification – Remaining 20% of equipment is recommended to be replaced in phase 3.

**Costs**

A summary of phase 3 costs are outlined below. For more information about costs, see the Financial Analysis section below.

**Phase 3 Summary Table**

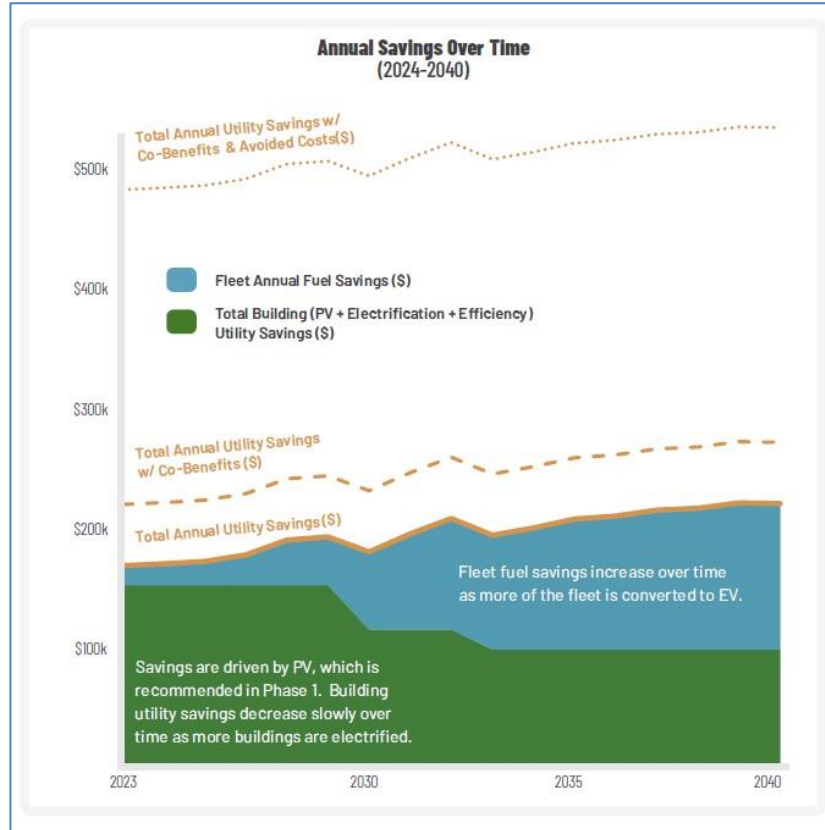
Measures	Life Cycle Carbon Reduced [tonnes]	Total Construction Costs	Like-Like Construction Costs	Net Decarbonization Costs
 Building Hybrid Electrification	15,000	\$5-7M	\$2.3-3M	\$2.8-4M
 Fleet Electrification	3,000	\$11-13M	\$8.5-9M	\$2.5-4M
 Miscellaneous Electrification	500	\$0.7-1M	\$0.4-0.5M	\$0.3-0.5M
 Efficiency & Load Reduction	-	-	-	-
 Renewables	-	-	-	-
<b>Total</b>	<b>18,500</b>	<b>\$17-21M</b>	<b>\$11-13M</b>	<b>\$6-8M</b>

**Financial Considerations**

The Internal Decarbonization Plan will impact annual operating expenses for the City in the following ways:

- Electrification & Building Utility Costs
  - Electrification can lead to increased annual utility costs due to the existing utility rate structures, where electric demand charges are high and the cost per unit energy of electricity is typically higher than natural gas.
- Building Demand Charges
  - Hybrid gas systems will also provide value by reducing annual demand (kW) costs in comparison to an all-electric alternative. Gas-backup systems have the option to lockout the primary heating (heat pumps) when temperatures are lower to avoid potentially costly demand (kW) charges.
- Renewables
  - Renewable solar PV systems account for the majority of the utility cost savings at the building level.
- Efficiency & Load Reduction
  - Efficiency & load reduction measures typically have positive utility savings as they do not involve fuel switching.
- Co-Benefits & Avoided Costs

- Additional benefits realized through the process of electrification, such as improved indoor air quality, thermal comfort and avoided fossil fuel price shocks



○ *Figure 1 includes cost savings related to solar generation, energy efficiency, fleet fuel and includes increased electricity costs due to electrification. The dotted lines represent co-benefits and avoided costs savings.*

### Grants/Funding Options

Funding is a critical piece of the decarbonization roadmap to ensure an implementation plan is successfully executed. Over the course of the project, several grant and stimulus funding opportunities were researched and identified along with capital and financing streams that are applicable to the implementation of the City’s roadmap. McKinstry conducted preliminary interviews with the Finance team, hosted a funding workshop on March 6, 2023 and a final funding session on May 22, 2023. Below is a list of applicable funding sources identified to help the City fund and implement the recommendations within the Internal Decarbonization Plan. All information below is based on research conducted in 2023. Grants and stimulus funding is likely to vary in future years.

### **Grants & Stimulus Funding**

By conducting the Internal Decarbonization Plan project, the City is prepared to submit “shovel ready” and innovative grant applications that create benefits for the community.

- Colorado Public Building Electrification Grant\*
- Colorado High Efficiency Heating & Appliances Program
- Colorado Department of Local Affairs Grants

- Energy and Mineral Impact Grant
- Renewable Energy Grant
- Resiliency Grant\*
- State of Colorado Geothermal Grant
- Congressionally Directed Spending\* – Submitted, did not receive award in 2023 but will reapply in 2024
- FEMA Building Resilient Infrastructure and Communities (BRIC) grant
- Inflation Reduction Act
  - Investment Tax Credit – Direct Pay for renewable energy systems, battery storage
  - Grant programs for electric vehicles and electric vehicle charging
- US Department of Energy grants for municipalities
- Xcel Energy rebates
- Mow Down Pollution Grant\*
- Charge Ahead Colorado Grant\*
- Colorado Fleet-Zero Emission Resource Opportunity (“Fleet-Zero”)\*

\*Grants currently being applied for during the 2023 – 2024 fiscal year for project implementation.

### **Capital & Internal Funding**

Alternatives for funding include capital investment and internal funding by the City. This may include:

- Allocate dedicated stream of capital to sustainability during bi-annual budget cycle. By allocating capital funding towards the implementation of this project, the City is able to utilize this funding as matching funds in grant applications, allowing the City to apply for larger grant funding requests.
- Internal borrowing from enterprise funds with additional capital availability.
  - City has experience with this method of funding projects
  - Some funds are heavily restricted
- Diverted operational/Capital Improvement Plan dollars
- Dedicated sustainability tax – percentage earmarked towards municipal & community sustainability projects
  - Investigated in 2023 during Open Space tax extension discussions. Recommend re-investigating in future years.

### **Financing Options**

Other financing options include:

- Tax Exempt Lease Purchase - an installment purchase, conditional sale or lease by a public agency using the installed equipment as collateral and financed by an investor or bank
- Bond – debt obligation issued by a public entity using the loan for public projects, such as constructing buildings, highways, or renovations.

- Certificates of Participation (COP) – a type of financing where an investor purchases a share of lease revenues to secure financing for public sector projects.
- Energy Performance Contracting – a contracting and financing tool that leverages multiple sources of funding to construct energy savings projects for public sector agencies.
- Energy-as-a-service – a financing tool where a public agencies pays for an energy service without having to make any upfront capital investments and transfers ownership of the capital investment to a third party investor.
- Infrastructure-as-a-service – a financing tool where a public agencies pays for infrastructure via an on-going fee or lease payment without having to make any upfront capital investments and transfers ownership of the capital investment to a third party investor.

Financial Analysis

A financial analysis was conducted to determine the true cost of decarbonization. This analysis reviewed the like-for-like costs to continue replacing equipment and fleet with the current gas version and compared it to the cost to electrify and decarbonize operations, mechanical equipment and fleet. All costs within this report are turnkey and include final design, engineering, procurement, construction management, and commissioning costs. The financial impact of the project to the City was calculated from 2024 through 2040. The like-for-like project costs were derived from a combination of the City’s CIP budget and detailed cost estimating of turnkey like-for-like equipment replacement as the comparison scenario.

If the City were to continue replacing fleet and mechanical systems with like-for-like gas replacements, the total cost to the City through 2040 would be approximately \$27M with no grants or anticipated utility cost savings. If the City were to electrify all fleet, mechanical equipment and operations, the cost would be approximately \$51.1M including the recommendations of EV charging, load reduction measures, and renewable energy. Decarbonization would allow for the City to capture \$7M in utility and fleet operational savings over the term, secure \$3-13M in potential grants, incentives and stimulus funding, and help to mitigate the impacts of climate change.

The Summary Table below shows the net costs of decarbonization as \$4.4M to \$14.4M depending on the level of grants that the City is able to secure. The co-benefit and avoided costs are not included in this number and would provide an additional \$10.6M in benefits to the City through 2040 for a total potential net savings of \$6.2M over the business-as-usual or “like-for-like” replacement scenario.

**Net Cost of Decarbonization =**

Total Cost To Decarbonize (Gross) – Like-for-Like Costs – [Project Savings + Grants]

<b>Summary Table</b>	
<b>Total Cost of Decarbonization (Gross)*</b>	<b>~\$51M</b>
<b>Like-for-Like Replacement</b> (costs that the City would continue to pay*)	<b>(~\$27M)</b>
<b>Total Savings</b> (Utility, Fleet, Solar)	<b>(\$7M)</b>
<b>Total Grants/Stimulus</b>	<b>(\$3M-13M)</b>
<b>Net Cost of Decarbonization</b> (varies based on final grant awards)	<b>\$4M-14M</b>

It is recommended that the City do a more in depth financial analysis for each phase to produce a complete and final amortization schedule either internally or with a selected lender.

*Implementation Strategies*

As part of this analysis, it is recommended that full decarbonization is pushed to 2040 due to technology barriers and avoiding equipment replacement before the end of its useful life. There are three primary methods of implementation for consideration. Due to the complexity, uniqueness and scale of the recommendations, three larger phases or mobilizations are recommended for the implementation portion of the project to reduce the burden on staff, consolidate resources and gain cost efficiencies by scaling the project. The methods below are chosen to lower the overall cost to the City through efficiencies and to reduce the amount of resources needed throughout each phase, in comparison to a piecemeal approach.

**1. Colorado Energy Office’s Energy Performance Contracting**

This method utilizes a state-supported program through the Colorado Energy Office that has been used for over 200 projects within public agencies in the state of Colorado. Energy Service Companies are pre-qualified through the State to assist local governments with implementation of decarbonization projects for fleet and buildings. This approach allows for flexibility in project funding with the ability for the public agency to combine multiple funding avenues such as grants, stimulus, capital and third party financing. This approach is recommended for the larger, complex buildings that require renewable energy, load reduction measures, electrical upgrades, and mechanical electrification as a single project, such as at the Recreation & Senior Center. Energy Performance Contracting enables a jurisdiction to undertake a major decarbonization



effort and avoid impacts to staff that would otherwise be required to manage such projects.

*When to Use:* This option is recommended to be used for phase 1 renewables and load reduction, phase 1 – 3 large system mechanical electrification, and some EV charging.

## **2. Design-Build or Design-Bid-Build**

This is a traditional method for construction projects in which the City would project manage and bid out individual scopes of work for design, construction or both. This is recommended for smaller, less complex buildings and scopes of work that require a simple like-for-like replacement of mechanical systems such as the Art Center.

*When to Use:* This option is recommended to be used for some phase 2 small system mechanical electrification.

## **3. Self-Implementation**

This method is recommended for scopes of work that the City can conduct internally if staff time and resources allow. This method is recommended for equipment replacements (golf carts, lawn mowers, etc.) and EV charging infrastructure.

*When to Use:* This option is recommended to be used for some EV charging, fleet electrification and equipment electrification.

If the Plan is adopted, staff will return with more information about proposed implementation strategies for consideration.

### *Board Feedback*

Staff and McKinstry presented the Plan to the Louisville Sustainability Advisory Board and the Recreation Advisory Board in June 2023. Board discussion and feedback is summarized below and memos from both boards are included in the Council packet.

Sustainability Advisory Board discussion included:

- How to move from hybrid electrification to full electrification, removing all fossil fuels from buildings and operations
- City's lawn equipment contract and a potential policy to require electric equipment replacements
- Oversight for renewable energy credits purchased through Xcel's program and interest in producing electricity locally rather than purchasing offsets
- Geothermal, community solar and floating solar considerations
- Interest in cost analysis formula and how co-benefits are incorporated
- Carbon sequestration and natural climate solutions
- Plan implementation and oversight

Recreation Advisory Board discussion included:

- Golf Course Clubhouse is an inefficient building and retrofitting this building would be less cost effective than building a new net-zero clubhouse
- Interest in grants available for net-zero new construction and staff available to write and apply for grants
- Solar lifespan and panel warranties
- Electric pool heating and potential technology improvements
- Passive techniques, natural climate solutions (urban canopy) and load reduction measures (interior blinds)
- Xcel's electricity mix

**FISCAL IMPACT:**

Fiscal impacts related to the Internal Decarbonization Plan have already been incorporated in the 2023 budget. \$3 million has been budgeted in the Capital Improvement Plan over 2023 and 2024 for implementation of the Internal Decarbonization Plan. The project identifies longer-term planning for needs related to electrification of City facilities, fleet and equipment. If the Plan is approved, staff will address funding needs through the 2025-2026 budget process, for further discussion.

**STAFF RECOMMENDATION:**

Staff recommends adoption of the Internal Decarbonization Plan and implementation of the recommendations utilizing the funding available in 2023 and 2024.

**PROGRAM/SUB-PROGRAM IMPACT:**







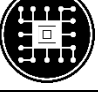

Energy efficiency upgrades both positively impact the Sustainability and Facilities Maintenance sub-programs by reducing energy consumption and realizing cost savings. The objective of the Sustainability sub-program is to use environmental, economic, and human resources to meet present and future needs without compromising the ecosystems on which we depend and to “actively pursue energy efficient upgrades to realize cost savings and reduce environmental impacts.” The objective of the Facilities Maintenance sub-program is to “provide and manage facilities that maintain efficient and effective operations and promote environmental and economic sustainability.”

Future renewables and electric vehicle planning will further support the Sustainability, Facilities Maintenance, and Fleet Maintenance sub-programs by further conserving resources, increasing operational efficiency, and reducing operational negative environmental impact.

**ATTACHMENT(S):**

1. Resolution No. 48, Series 2023
2. McKinstry Final Report
3. Council Presentation Slides
4. Sustainability Advisory Board memo
5. Recreation Advisory Board memo
6. Internal Decarbonization Plan contract (which includes Internal Decarbonization Plan RFP and McKinstry proposal)

**STRATEGIC PLAN IMPACT:**

<input checked="" type="checkbox"/>	 <b>Financial Stewardship &amp; Asset Management</b>	<input type="checkbox"/>	 <b>Reliable Core Services</b>
<input type="checkbox"/>	 <b>Vibrant Economic Climate</b>	<input checked="" type="checkbox"/>	 <b>Quality Programs &amp; Amenities</b>
<input type="checkbox"/>	 <b>Engaged Community</b>	<input type="checkbox"/>	 <b>Healthy Workforce</b>
<input checked="" type="checkbox"/>	 <b>Supportive Technology</b>	<input type="checkbox"/>	 <b>Collaborative Regional Partner</b>

**RESOLUTION NO. 48  
SERIES 2023**

**A RESOLUTION APPROVING AN INTERNAL DECARBONIZATION PLAN  
FOR THE CITY OF LOUISVILLE ORGANIZATION**

**WHEREAS**, the City of Louisville remains committed to its adopted goals to reduce energy consumption, increase clean energy sources, and support the transition to a low-carbon community as outlined in the Sustainability Action Plan and Resolution 25, Series 2019, “A Resolution Setting Clean Energy and Carbon Reduction Goals”; and

**WHEREAS**, the City previously entered into an Agreement By and Between the City of Louisville and McKinstry Essention, LLC for Consulting Services concerning the development and implementation of a Decarbonization Plan for the City organization (“Internal Decarbonization Plan”) which plan has now been completed; and

**WHEREAS**, the Internal Decarbonization Plan reflects the City’s vision in reducing greenhouse gas emissions through facility, fleet, and equipment electrification and renewable energy installation; and

**WHEREAS**, the Internal Decarbonization Plan key recommendations include 100% municipal decarbonization by 2040, retention of 100% renewable electricity and a Decarbonization Plan progress update every five to seven years; and

**WHEREAS**, having reviewed the Internal Decarbonization Plan, the City Council finds its contents acceptable and supportive of the City’s vision as outlined in the City’s Sustainability Action Plan, and thus desires to approve and adopt the same.

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

**Section 1.** The Internal Decarbonization Plan, dated August 4, 2023, a copy of which accompanies this Resolution, is hereby approved and adopted.

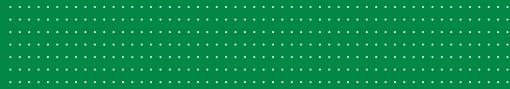
**Section 2.** The Internal Decarbonization Plan is intended to serve as a strategic roadmap to guide the City’s internal decarbonization efforts, but shall not bind the City to any particular course of action, implementation benchmarks, or timeline.

**PASSED AND ADOPTED** this 15<sup>th</sup> day of August, 2023.

\_\_\_\_\_  
Dennis Maloney, Mayor

ATTEST:

\_\_\_\_\_  
Meredyth Muth, City Clerk



# Internal Decarbonization Plan

## Final Report

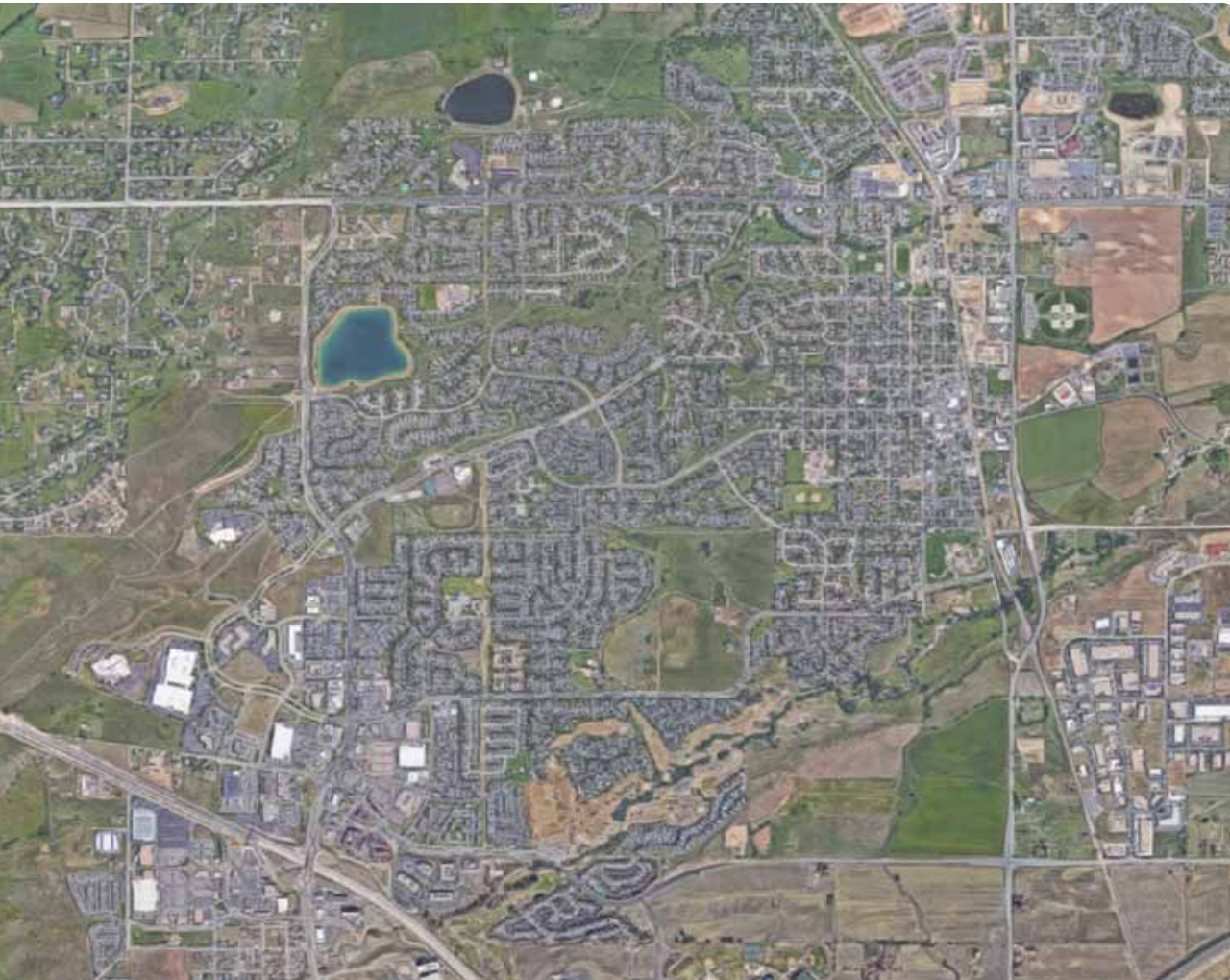


### CITY OF LOUISVILLE

LOUISVILLE, COLORADO  
AUGUST 8, 2023



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Date	Version History
8/8/2023	Final Report Issued

# Table of Contents Abbreviations

Abbreviation	Definition	Abbreviation	Definition
AHU	Air Handling Unit	kVA	Kilovolt-Ampere
ASHP	Air Source Heat Pump	kW	Kilowatt
AWHP	Air to Water Heat Pump	kWh	Kilowatt-Hour
CO2	Carbon Dioxide	kWp	Kilowatt Peak
CO2e	Carbon Dioxide Equivalent	LED	Light Emitting Diode
CHW	Chilled Water	MAU	Makeup Air Unit
DHW	Domestic Hot Water	MW	Mega Watt
dT or DeltaT	Temperature Difference	NDHU	Natorium Dehumidification Unit
ERV	Energy Recover Ventilator	PV	Photovoltaic
EUI	Energy Use Intensity	RCx	Retro Commissioning
EV	Electric Vehicle	ROM	Rough-Order-of-Magnitude
FCA	Facility Condition Assessment	RTU	Rooftop Unit
GC	General Contractor	SCC	Social Cost of Carbon
GSHP	Ground Source Heat Pump	SHW	Service Hot Water
HHW	Heating Hot Water	VAV	Variable Air Volume
HPWH	Heat Pump Water Heater	VRF	Variable Refrigerant Flow
HVAC	Heating Ventilation Air Conditioning	WWHP	Water to Water Heat Pump
IRA	Inflation Reduction Act		
ITC	Investment Tax Credit		



# Executive Summary | Background

## Background

In August of 2019, City Council passed Resolution 25, Series 2019, which set clean energy and carbon emission reduction goals for the municipality and larger community, including:

- Meeting 100% of Louisville’s municipal electric needs with 100% carbon-free sources by 2025
- Reducing core municipal greenhouse gas emissions annually below the 2016 baseline through 2025.

The City of Louisville also adopted Resolution 25-2019 (Setting Clean Energy and Carbon Emission Reduction Goals), and a Sustainability Action Plan (adopted in October 6, 2020). On December 30, 2021, the massive Marshall Fire raged in portions of the Front Range, destroying 550 homes and businesses in Louisville alone. Climate change, which much of the fire is attributed to, became very real to the City, which had already been establishing decarbonization targets. The fire accelerated the City’s sense of urgency to act to eliminate its own carbon footprint.

In response to this urgency, in summer and fall 2022, the City contracted for the creation of a study, analysis, and strategic roadmap for electrification and decarbonization of 100% of City buildings, fleet, equipment and operations\* by 2030 (as part of this study, an alternative completion target was determined). **This document is the outcome of that effort.**

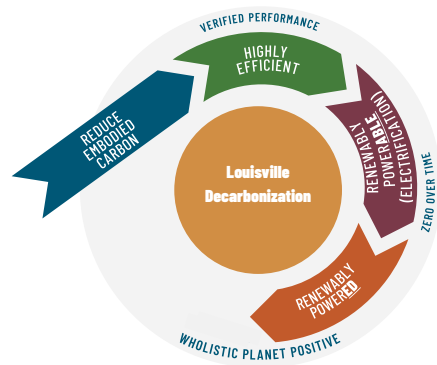
### Environmental, Community, and Financial Stewardship and Leadership

Louisville is already aggressively pursuing a path to decarbonization of its own operations through efficiency and renewable electricity. This roadmap establishes a pathway to complete decarbonization, including: additional efficiency measures, renewables, and electrification of buildings, vehicles, and miscellaneous equipment. Louisville will be one of the first jurisdictions in the United States to aggressively embark on decarbonized operations. By taking responsibility for its carbon and climate impacts, Louisville is an exemplar to its own residents as well as the broader world. On a more focused level, the specific efforts Louisville is taking provide a “show and tell” opportunity for decarbonization through communications to City residents and beyond.

\*Note this roadmap does not include decarbonization for water and wastewater process loads, purchasing, solid waste/recycling/composting, or street lighting. It also does not include equipment that is used via third-party contracts.

## What is Involved in Decarbonization

What is decarbonization? It is the process of eliminating all activities that generate CO2 and other greenhouse gases (in aggregate, known as CO2e -equivalent). Today, the city’s operations (buildings, fleet, miscellaneous equipment) generate 3,400 metric tons of CO2e annually, which is equivalent to the carbon generated by 430 homes in a year.



Eliminating Louisville’s carbon footprint requires focus on four main areas:

**Embodied Carbon** Retrofitting existing buildings, rather than tearing down and building new zero carbon buildings, reduces the carbon inherent in the construction process.

**Efficiency & Load Reduction** Reducing building energy use, and thereby reducing carbon emissions, reduces the amount of renewable energy needed for total decarbonization.

**Renewably Powerable** Reducing on-site fossil fuel burning via electrification allows the building to be powered by renewable sources.

**Renewably Powered** Optimizing the mix of available renewable zero-carbon sources leads to decarbonization at the best value for the City of Louisville.

*Note that these activities aren’t necessarily implemented sequentially – this plan identifies the most cost-effective and high-value phasing plan for implementation.*

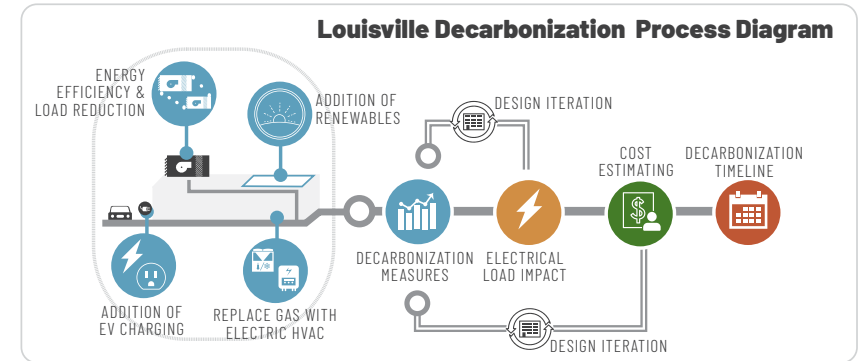


# Executive Summary | Background

## Core Principles

There are a number of big picture principles and concepts that further illuminate this plan:

- Be fiscally responsible and avoid replacing equipment before it is worn out.** Allocate the replacement budget to the decarbonized alternative instead, which will typically save 25-50% of the capital cost. Also work within the context of existing equipment and reuse existing systems wherever possible. Completely tearing out and replacing systems has higher embodied carbon, is usually more costly, and always more disruptive.
- Use proven technologies.** Full zero carbon performance can be achieved via current technologies. Louisville needs results and should not be a guinea pig for untested technologies.
- Provide the greatest value for least cost.** Full decarbonization, particularly electrification, is expensive. It is critical to pursue the various financial incentives available at the local, state, and federal level. In addition, many decarbonization measures can provide co-benefits, providing value streams that offset costs.
- Zero carbon power.** Louisville acquires 100% renewable electricity through utility purchase programs, so all electrical uses are assumed to emit zero carbon. However, reducing energy and electrical load has other financial benefits and related co-benefits.



## Key Findings

**Clear, full, decarbonization pathways exist for all City buildings and its fleet.** In most cases these approaches are based on retrofitting the existing HVAC systems, not gutting the building entirely.

**Efficiency and load reduction strategies often have lower life-cycle costs than current electricity costs.** These are outlined in greater detail in the individual building reports and are recommended for immediate implementation.

**Hybrid building electrification is an excellent short and mid-term approach.** Hybrid mechanical heating systems, which utilize electricity as the primary heating source and natural gas as a backup, achieve the decarbonization "sweet spot" via substantial carbon reductions (i.e. 75%+) while reducing overall costs up to 50%.

**City-owned renewable electricity generation will reduce utility costs and provide greater benefit to the Louisville community.** Substantial opportunities exist for on-site renewable electricity. A combination of Inflation Reduction Act and Xcel Energy incentives make this a very attractive option for the City and result in on-site renewable electricity being cheaper than utility-provided electricity. In addition, on-site renewables provide additional resiliency and signal the City's commitment to decarbonization

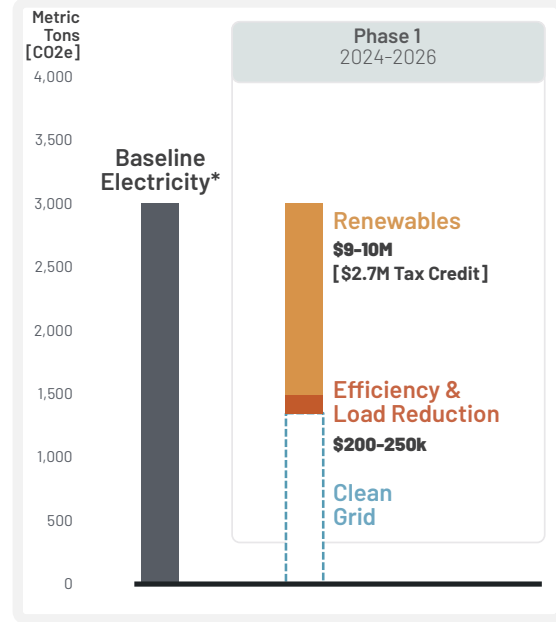
## Key Recommendations

Based on the findings above and detailed findings throughout this report, a formal adoption of the City's decarbonization target is recommended:

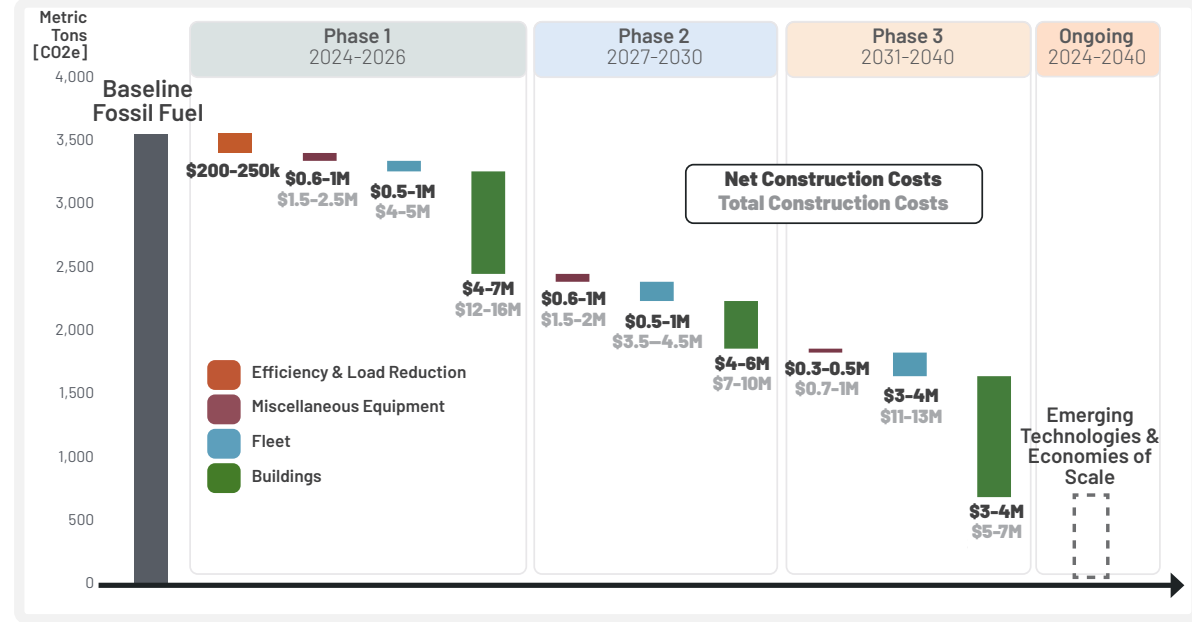
- **100% Decarbonization by 2040**
- **Retain 100% Renewable Electricity** (underway)
- **Decarbonization Plan Progress Update Every 5-7 Years**

# Executive Summary | Decarbonization Implementation Plan

## Electricity Emissions



## Fossil Fuel Emissions



Efficiency & Load Reduction & Renewables reduce electricity that would need to be offset by nearly **50%**.

Emerging technologies & economies of scale will help bring Louisville to **Zero Carbon** emissions.

### Cost Summary Table

Total Construction Costs	<b>~\$51M</b>
Total Like-for-Like Construction Costs (costs that the City would continue to pay)	<b>(~\$27M)</b>
Total Project Savings (Utility, Fleet, Solar)	<b>(\$7M)</b>
Total Grants	<b>(\$3M-13M)</b>
<b>Total Net Cost of Decarbonization</b> (varies based on final grant awards)	<b>\$4M-14M</b>

### Notes:

**Total Construction Costs:** Total **turnkey** construction costs needed for budgetary purposes. Costs do not include incentives or grants. The Inflation Reduction Act will potentially offset 30-40% of the cost of renewables and fleet.

**Total Like-for-Like Construction Costs:** The **turnkey** "business as usual" costs for replacing existing fossil fuel equipment with similar fossil fuel equipment. Costs were derived from a combination of the City's CIP budget and detailed cost estimating of equipment replacement as the comparison scenario.

**Net Construction Costs:** (Total Construction Costs) - (Total Like-for-Like Construction Costs)

**Total Net Cost of Decarbonization:** (Total Construction Costs) - (Total Like-for-Like Construction Costs) - (Total Project Savings + Total Grants)

**Turnkey Costs:** Include design, engineering, construction management, project management, and commissioning.

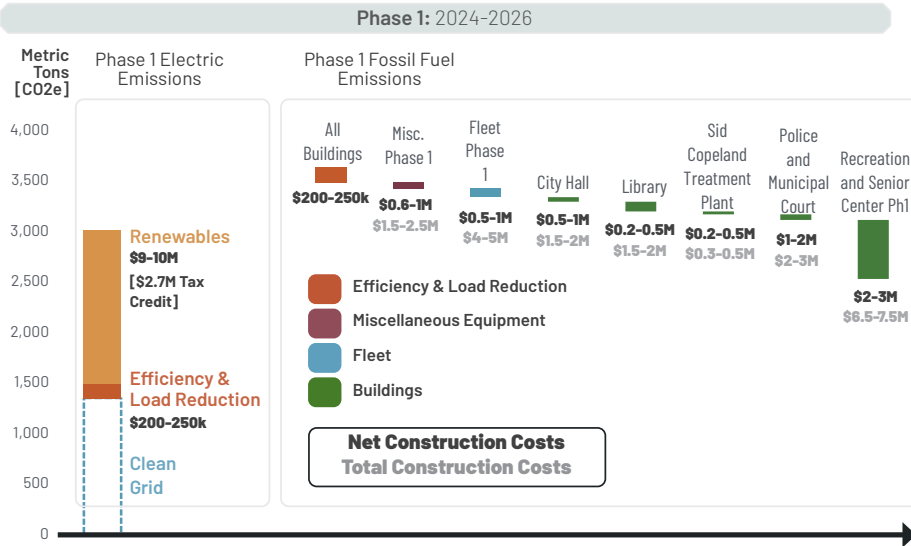
Building costs include costs associated with EV charging (chargers and electrical infrastructure upgrades)

\*Assumes 2023 Xcel Grid Mix

Savings Summary by Measure		Life Cycle Carbon Reduced	Baseline Carbon % Reduction	Electricity Offset
	Building Hybrid Electrification	34,000 tonnes	60%	-
	Fleet Electrification	6,500 tonnes	12%	-
	Miscellaneous Electrification	2,500 tonnes	4%	-
	Efficiency & Load Reduction	2,400 tonnes	4%	5%
	Renewables	-	-	45%
<b>Total</b>		<b>45,400 tonnes</b>	<b>82%</b>	<b>50%</b>

# Decarbonization Implementation Plan | Phase 1 Plan

## Phase 1 Roadmap



## Phase 1 Scope

### Efficiency & Load Reduction

All Buildings

### Renewables

(2.5) MW  
(8) Sites

Evaluate Xcel renewable purchase needed for 100% offset after installation.

### Miscellaneous Electrification

Replace ~40% of remaining gas equipment

### Fleet Electrification

(62) Vehicles  
(36) ICE - Internal Combustion\*  
(26) EV - Electric Vehicle

*\*Part of the fleet, including police vehicles, do not currently have a viable EV replacement that will be market-ready before the existing vehicles need replacement. Therefore, some ICEs are still necessary for the initial phases of this plan.*

See the appendices of the building audit reports for detailed descriptions of scope for each decarbonization measure.

### Building Hybrid Electrification & EV Charging

#### City Hall

(2) Heat Pump RTUs  
(17) VAVs  
(1) ERV + ASHP  
(7) EV Chargers

#### Library

(3) Heat Pump RTUs  
(1) Electric DHW  
(9) EV Chargers

#### Sid Copeland Water Treatment

(1) Heat Pump RTUs  
(7) Electric Unit Heaters  
(3) EV Chargers

#### Police & Municipal Court

(3) Heat Pump RTUs  
(7) Electric Unit Heaters  
(6) EV Chargers

#### Recreation & Senior Center Ph1

(13) Heat Pump RTUs  
(1) Pool NDHU  
(5) EV Chargers

## Phase 1 Implementation Notes

### Renewable Phasing

Renewables are recommended to be implemented right away to take advantage of existing federal and state funding options.

### Efficiency & Load Reduction Phasing

Efficiency & load reduction measures are recommended to be implemented right away to realize any potential downsizing for mechanical and electrical systems as buildings are upgraded in the future.

### Recreation Center Phasing

The Recreation & Senior Center measures are split into two phases. The first phase addresses the majority of the RTUs that are near end-of-life and one of the pool natatorium dehumidification units (NDHUs).

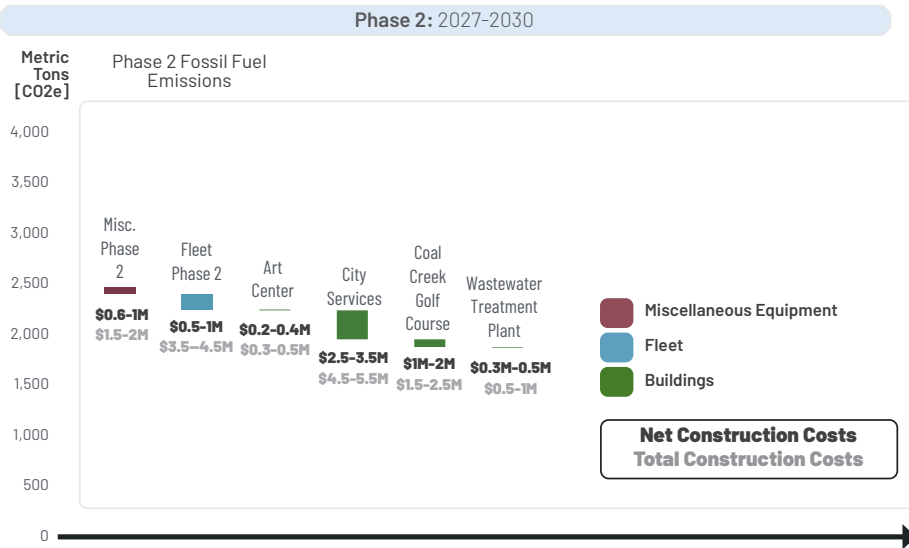
## Phase 1 Summary Table

Measures	Life Cycle Carbon Reduced [tonnes]	Total Construction Costs*	Total Like-for-Like Construction Costs*	Net Construction Costs*
Building Hybrid Electrification	13,000	\$12-16M	\$8.1-9M	\$3.9-7M
Fleet Electrification	1,300	\$4-5M	\$3.5-4M	\$0.5-1M
Miscellaneous Electrification	1,000	\$1.5-2.5M	\$0.9-1.5M	\$0.6-1M
Efficiency & Load Reduction	-	\$0.4-0.5M	-	\$0.4-0.5M
Renewables	-	\$9-10M	-	\$9-10M
<b>Total</b>	<b>15,300</b>	<b>\$27-34M</b>	<b>\$13-15M</b>	<b>\$14-20M</b>

\*Costs do not include incentives or grants. The Inflation Reduction Act will potentially offset 30-40% of the cost of renewables and fleet.

# Decarbonization Implementation Plan | Phase 2 Plan

## Phase 2 Roadmap



## Phase 2 Implementation Notes

### City Services

Significant upgrades occur at the City Services building where both major building electrification upgrades and EV Charging upgrades are proposed. EV charging scope at City Services is the largest as it will be the home to the majority of the city's fleet.

## Phase 2 Scope

### Building Hybrid Electrification & EV Charging

#### Coal Creek Golf Course

- (1) Heat Pump RTUs
- (2) ERV + ASHP
- Kitchen Electrification
- (4) Electric Unit Heaters
- (3) EV Chargers

#### Wastewater Treatment Plant

- (1) ASHP
- (1) Electric Unit Heaters
- (1) Electric DHW
- (2) EV Chargers

#### Art Center

- (1) ERV + ASHP

#### City Services

- (1) ERV + WC VRF System
- (1) AHU Coil Retrofit
- (1) Hydronic AWHP
- (1) Electric Hotsy Washer
- (~50) Electric Unit Heaters
- (1) Electric DHW
- (28) EV Chargers

### Fleet Electrification

- (35) Vehicles
- (11) ICE - Internal Combustion
- (24) EV - Electric Vehicle

### Miscellaneous Electrification

Replace ~40% of remaining gas equipment

See the appendices of the building audit reports for detailed descriptions of scope for each decarbonization measure.

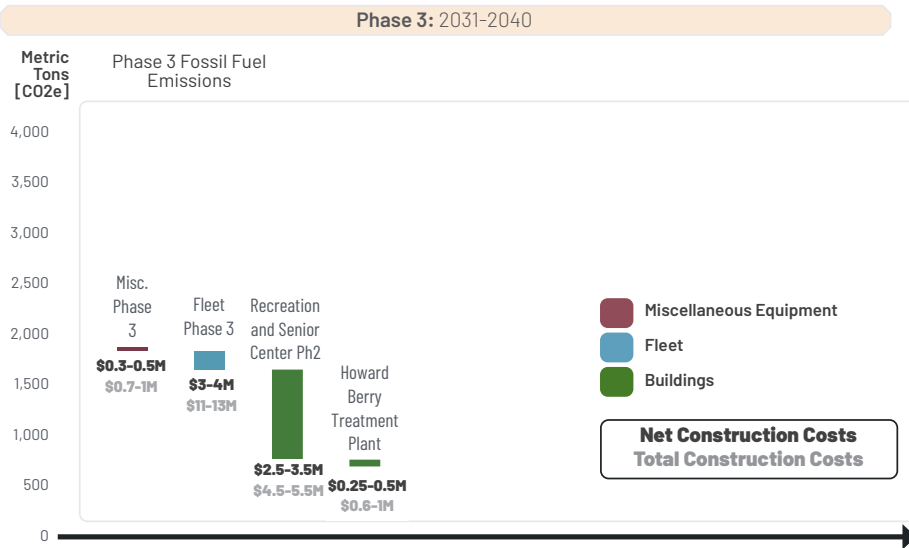
## Phase 2 Summary Table

Measures	Life Cycle Carbon Reduced [tonnes]	Total Construction Costs*	Total Like-for-Like Construction Costs*	Net Construction Costs*
Building Hybrid Electrification	6,000	\$6.8-10.1M	\$2.8-3.7M	\$4-6.4M
Fleet Electrification	2,400	\$3.5-4.5M	\$3-3.5M	\$0.5-1M
Miscellaneous Electrification	1,000	\$1.5-2M	\$0.9-1M	\$0.6-1M
Efficiency & Load Reduction	-	-	-	-
Renewables	-	-	-	-
<b>Total</b>	<b>9,400</b>	<b>\$12-17M</b>	<b>\$7-8M</b>	<b>\$5-8M</b>

\*Costs do not include incentives or grants. The Inflation Reduction Act will potentially offset 30-40% of the cost of renewables and fleet.

# Decarbonization Implementation Plan | Phase 3 Plan

## Phase 3 Roadmap



## Phase 3 Implementation Notes

### Recreation & Senior Center

The remaining Recreation & Senior Center upgrades are completed during this phase. Note that the remaining gas RTUs are not electrified due to existing electrical capacity. Re-evaluate existing electrical capacity at the time of this study to see if additional RTUs can be electrified.

## Phase 3 Scope

### Building Hybrid Electrification & EV Charging

**Howard Berry Treatment Plant**  
 (1) Electric MAU  
 (2) Electric Unit Heaters

**Recreation & Senior Center Ph2**  
 (1) Pool NDHU  
 (6) Pool Heat Pump Water Heaters  
 (1) DHW Heat Pump

### Fleet Electrification

(116) vehicles  
 (1) ICE - Internal Combustion  
 (115) EV - Electric Vehicle  
 (68) 2031-2035  
 (48) 2036-2040

### Miscellaneous Electrification

Replace ~20% of remaining gas equipment

See the appendices of the building audit reports for detailed descriptions of scope for each decarbonization measure.

## Phase 3 Summary Table

Measures	Life Cycle Carbon Reduced [tonnes]	Total Construction Costs*	Total Like-for-Like Construction Costs*	Net Construction Costs*
Building Hybrid Electrification	15,000	\$5-7M	\$2.3-3M	\$2.8-4M
Fleet Electrification	3,000	\$11-13M	\$8.5-9M	\$2.5-4M
Miscellaneous Electrification	500	\$0.7-1M	\$0.4-0.5M	\$0.3-0.5M
Efficiency & Load Reduction	-	-	-	-
Renewables	-	-	-	-
<b>Total</b>	<b>18,500</b>	<b>\$17-21M</b>	<b>\$11-13M</b>	<b>\$6-9M</b>

\*Costs do not include incentives or grants. The Inflation Reduction Act will potentially offset 30-40% of the cost of renewables and fleet.

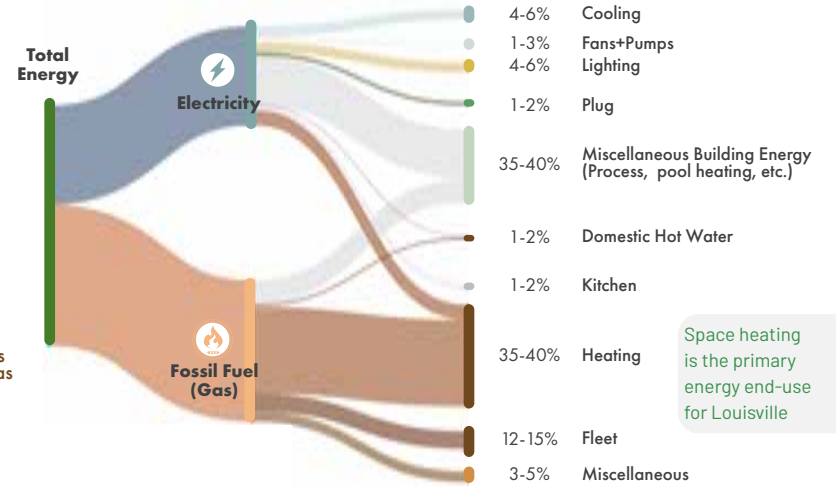
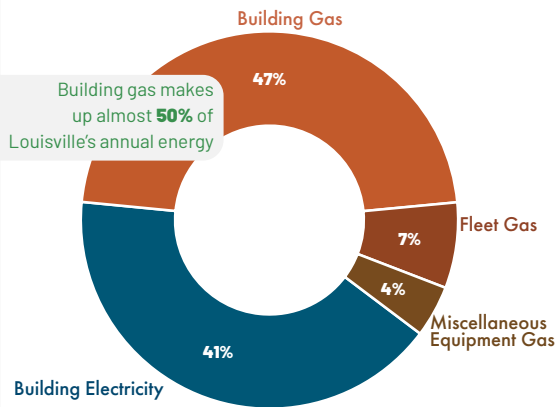
# Decarbonization Implementation Plan | Existing Energy & Emissions

## Energy vs Carbon

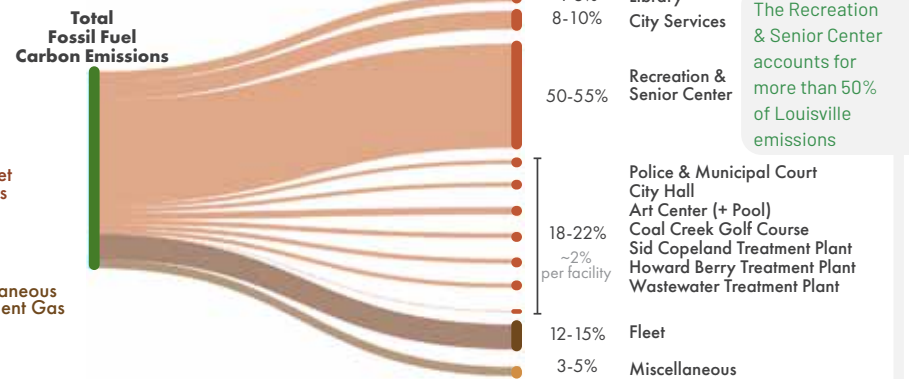
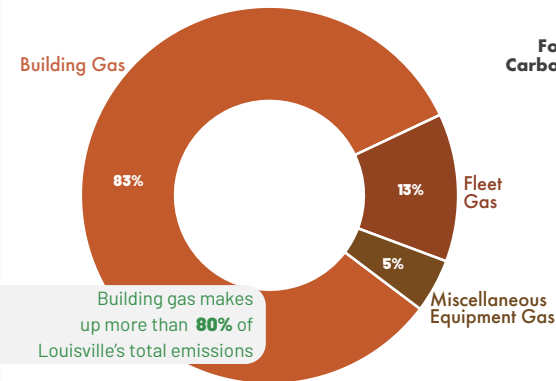
Energy use and carbon emissions are sometimes used interchangeably, but they are quite different. Carbon emissions come from burning fossil fuels – those burnt fossil fuels provide energy to buildings. Energy can also be provided to buildings via zero-carbon sources, such as renewables.

The City of Louisville participates in programs to offset their existing electrical consumption with renewable sources. **Therefore, for the purposes of this study the total carbon emissions at Louisville will be solely driven by on-site fossil fuel combustion and emissions associated with electric consumption will be zero.**

## Energy End-Use



## Fossil Fuel Carbon Emission End-Use



# Decarbonization Implementation Plan | Zero Carbon Electricity

## Cost of Zero Carbon Electricity

The City's decarbonization approach is predicated on 100% renewable electricity. Given this, the question becomes, **what is the best source of renewable power for the Louisville's operations?**

The table to the right summarizes the cost of zero carbon electricity. **Based on this assessment, acquisition of renewable electricity over time is recommended to follow the following prioritization:**

- **Decrease electrical demand through efficiency & load reduction.**
- **On-site renewables**
- **Renewable percentage inherent in standard Xcel electricity over time**
- **Xcel windsorce**

Based on this hierarchy, and given the City's current use of Xcel standard and Windsorce electricity, this plan identifies the best opportunities for efficiency and on-site renewables for the City.



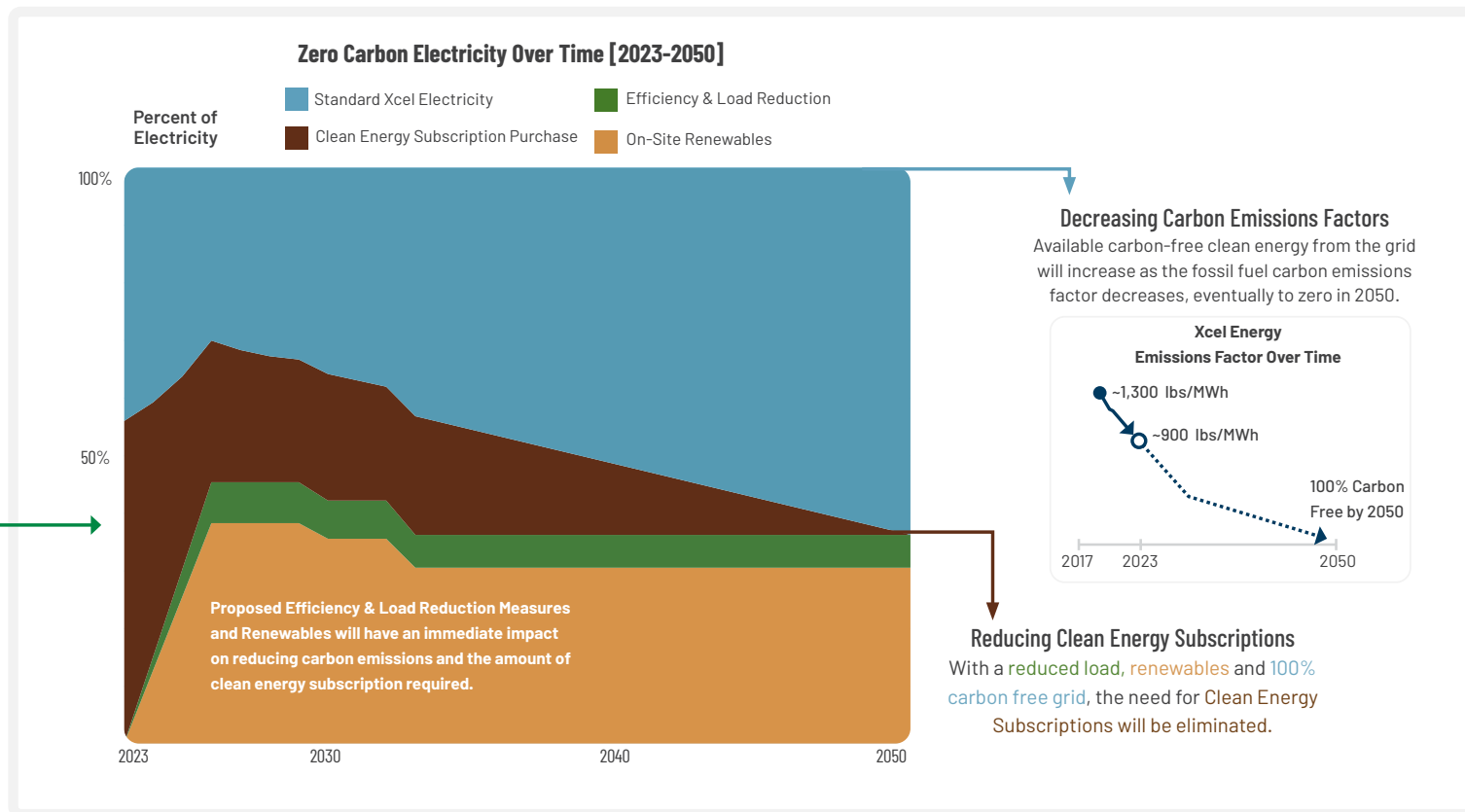
Type	\$/kWh	Pros	Cons
Efficiency & Load Reduction	<b>0.04 \$ / kWh</b>	<ul style="list-style-type: none"> <li>• Reduces islanded electricity demand during power outages</li> <li>• Sometimes includes co-benefits</li> <li>• Avoids line loss of utility scale solar</li> <li>• Avoids solar/wind impacts of utility scale renewables</li> </ul>	<ul style="list-style-type: none"> <li>• Some facility disruption; contracting time/process</li> </ul>
On-site Renewables	<b>0.065 \$ / kWh</b> (assumes 25.5% IRA direct payment)	<ul style="list-style-type: none"> <li>• Demonstrate decarbonization to local Louisville community and encourage others to do same</li> <li>• Avoid solar sprawl at scale - avoiding impacts to rural areas</li> <li>• Enable immediate accrual of energy benefits</li> <li>• 25% of cost incentive available through Inflation Reduction Act</li> <li>• Production incentives available from Xcel with REC sale</li> <li>• Avoid electrical energy loss due to transmitting power over long distances</li> <li>• When on-site renewables are a small percentage of the total usage of facility - such as Louisville's on-site opportunities - most solar electricity would be self used and thus not negatively impact grid</li> <li>• Enable future resiliency through addition of batteries and storage</li> </ul>	<ul style="list-style-type: none"> <li>• Requires maintenance (cost included in cost per kWh to left)</li> <li>• Best installed in conjunction with roof replacement, limiting time window</li> <li>• Can only provide portion of needed renewable electricity</li> </ul>
Standard Xcel Electricity	<b>0.065-0.070 \$ / kWh</b>	<ul style="list-style-type: none"> <li>• Provides some renewable electricity inherent in mix, increasing over time</li> <li>• More expensive than on-site solar per kWh</li> <li>• Ease of implementation, will occur on its own over time -no need for contracting for on-site renewable installation</li> </ul>	<ul style="list-style-type: none"> <li>• Possibility of Xcel not meeting promised renewable target/uncertainty/longer uptake</li> <li>• Solar and wind sprawl/impacts in rural/farming areas</li> <li>• Line loss/less efficient</li> <li>• Doesn't support resiliency</li> </ul>
Xcel Windsorce	<b>0.07-0.08 \$ / kWh</b> (base rate + 0.015 \$/kWh)	<ul style="list-style-type: none"> <li>• Enables immediate provision of 100% renewable electricity; not subject to allocation</li> <li>• Ease of implementation -no need for contracting for on-site renewable installation</li> <li>• Contractually guaranteed renewable source</li> </ul>	<ul style="list-style-type: none"> <li>• Most expensive source of renewables</li> <li>• Avian and aesthetic impacts of wind turbines</li> <li>• Line loss/less efficient</li> <li>• Doesn't support islandability</li> </ul>
Xcel Renewable Direct*	<b>0.065-0.070 \$ / kWh</b>	<ul style="list-style-type: none"> <li>• Approximate cost parity with standard grid electricity</li> <li>• If can be obtained, enables immediate acquisition of renewable power</li> </ul>	<ul style="list-style-type: none"> <li>• Not currently available</li> <li>• Limited availability, subject to new renewable projects</li> <li>• Solar and wind sprawl/impacts in rural/farming areas</li> <li>• Line loss/less efficient</li> <li>• Doesn't support resiliency</li> </ul>

\*Renewable Direct is only available occasionally based on subscription. There is a current waiting list to join.

# Decarbonization Implementation Plan | Zero Carbon Electricity

## Zero Carbon Electricity Strategy

The City of Louisville will utilize a toolbox of strategies to successfully electrify and decarbonize emissions associated with on-site fossil fuel combustion. With an electric utility grid that still has fossil fuel emissions embedded, load reduction and renewables will be key in a quick carbon emissions decrease. Additionally, Xcel's commitment to achieve a 100% carbon free grid by 2050 will play a large role in the decarbonization effects of electrification over time. Combining all these strategies will eliminate the need for Clean Energy Subscriptions over time. The following strategies support the assumption that emissions associated with electric consumption will be zero.

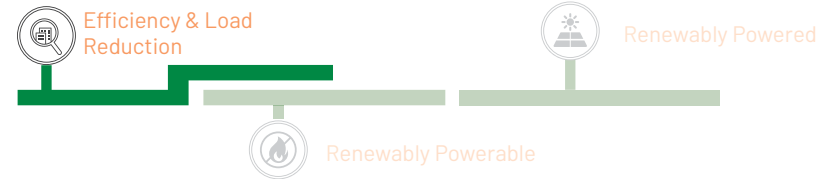




# Efficiency | Efficiency & Load Reduction

## Efficiency & Load Reduction

The recent shift towards decarbonization still operates on the core foundation of reducing building's overall energy use. Measures can have two functions: reducing annual energy/carbon consumption and reducing peak building demand load. These measures are often incentivized by Xcel and may have shorter paybacks. Recommended measures throughout the city are summarized in the table below. See the appendices of the building audit reports for detailed descriptions of scope for each measure.







Load	Carbon	Measure	Art Center	City Hall	City Services	Coal Creek Golf Course	Library	Sid Copeland Treatment Plant	Police and Municipal Court	Recreation and Senior Center	Howard Berry Treatment Plant	Wastewater Treatment Plant
■	■	<b>GLAZING UPGRADES</b> Upgrade glazing units where failing/single-pane glazing still exists.	●	●						●		
□	■	<b>HVAC OCCUPANCY SENSORS</b> Provide occupancy sensors for HVAC setback.							●			
■	■	<b>POOL COVER</b> Provide pool cover for reduced evaporation losses.								●		
□	■	<b>PUMP VFDS</b> Provide variable speed for pumping systems.					●					
□	■	<b>CONTROLS OPTIMIZATION / RETRO-COMMISSIONING (RCX)</b> Optimization of existing controls sequence and operation.	●	●	●		●		●	●		
□	■	<b>SCHEDULE SAUNA</b> Provide temperature scheduling of Sauna during unoccupied hours.								●		
■	■	<b>DUCT AIR SEALING/INSULATION</b> Provide duct air sealing for leaky duct systems.					●					
■	■	<b>ENVELOPE AIR SEALING</b> Provide envelope air sealing for leaky buildings.	●	●	●	●	●	●	●	●		●
□	■	<b>LIGHTING CONTROLS/VACANCY SENSORS</b> Upgrade lighting controls for vacancy sensors.		●		●	●	●	●	●	●	●
□	■	<b>ADVANCED PLUG LOAD REDUCTION</b> Plug load reduction systems.		●	●	●	●		●	●		
■	■	<b>LED LIGHTING</b> Upgrade lighting to LED.		●				●			●	
□	■	<b>COMPRESSED AIR LEAKS</b> Provide commissioning to compressed air system to resolve any leaks.			●	●						
■	■	<b>ENVELOPE INSULATION</b> Provide envelope insulation upgrades where no-insulation or poor insulation exists.				●						

# Renewably Powerable | Building Electrification

## Why Are We Electrifying?

A powerful tool towards decarbonization is “electrification”, which has become a big movement not just in the construction industry, but also in most industries of our society. There are a few driving principles behind this movement:

-  Electricity is currently produced using a range of sources:
  - Carbon emitting fossil fuels – natural gas, coal, oil
  - Zero-carbon sources – hydro-power, nuclear, wind, solar, etc.
-  Natural gas inherently emits carbon when burned, meaning gas-based heating sources will always emit carbon
-  The power grid is shifting away from fossil fuels and towards zero-carbon sources, due to a variety of factors including economic, regulatory, and societal
-  Electrifying our heating systems means their carbon emissions will drop as the grid continues to add more renewables, eventually dropping to zero

The first step for electrifying space and water heating system was to evaluate various system options. Options were evaluated at each building site, where considerations like energy and carbon savings, incremental cost impact, complexity of design, and additional other factors were all considered when making a recommendation. **Please see the individual building audit reports for additional detail.**

### HVAC System Matrix Example



## Full Electrification vs Hybrid Electrification: Space & Water Heating Systems

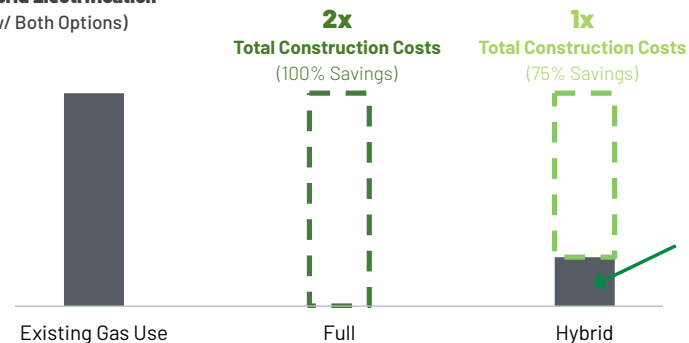
Heating is the single largest source of carbon emissions by Louisville, through burning of natural gas in boilers and furnaces. Heat pumps offer an incredible opportunity to both electrify and save energy, since they run on electricity and are also ~2-3x more efficient than natural gas based heating.

However, while heat pump-based heating is an excellent tool for building electrification, today’s technology still requires supplemental heating for the coldest days. In general, it can be expensive to electrify the “last 10%” peak, because the system is sized for the coldest day of the year, which rarely occurs.

Hybrid heat pump/natural gas peaking systems are a useful tool for sensible and cost-effective decarbonization, as they strike a balance between carbon reduction, construction costs, and utility demand costs. For fully electrified heating systems, that supplemental heating would be provided by electric resistance heating, which is capable of low temperature operation. However, in most facilities this approach results in two negative consequences: a costly electrical service upgrade is required, and operating expenses increase due to high peak electrical draw and resulting Xcel demand charges. In many cases, using gas as the peaking fuel source on the coldest day will mitigate need for an electrical upgrade while still achieving significant carbon reductions. The decarbonization “sweet spot” is a heat pump system that meets most of the annual heating demand, supplemented by a gas system to meet the rare coldest days. This results in substantial carbon reductions (i.e. 75%+) while reducing overall costs up to 50%. Retaining the gas supplemental heating until the next replacement cycle in the late 2030s enables:

1. Potential technology evolution, such as 100% heat pump heating even on coldest days, renewable fuel cells, and/or strategic and accessible use of bio-gas for peaking boilers.
2. Developments in demand shifting technology (e.g. batteries), resulting in lower demand charges.
3. Changes in relative cost of natural gas vs. electricity, increasingly favoring electricity.
4. Full utilization of useful life of natural gas equipment.

### Full vs Hybrid Electrification (At Sites w/ Both Options)



Hybrid solutions do not make sense at some sites due to existing electrical capacity and expected future loads. In these cases, **full electrification** is recommended.

The last 25% of gas usage is **~4x more expensive** to electrify than the first 75%.

## Additional Considerations

### Heating Capacity Oversizing

For the most part, electrified heating system capacities were sized similarly to the existing fossil fuel equipment. As these projects enter the detailed design phase, there is opportunity to minimize electrical impact by identifying equipment that can be downsized. This is particularly impactful in spaces that have freeze protection heating.

### Structural Impacts

Some of the proposed measures have an impact on the existing building structural system. These impacts have been included in the construction costs and are detailed in the building audit reports.

### Staged Mechanical Electrification

In general, Building Electrical Code requires electrical service to be sized based on nameplate power data for mechanical equipment. Thus, if all mechanical equipment is electrified at the same time, the electrical service upgrade would need to match the total nameplate power. This can lead to oversized electrical systems as mechanical systems are often oversized. For example, the Recreation & Senior Center existing nameplate load is calculated at 2,200 Amps, but utility data shows the actual demand peaking at 550 Amps.

As an alternate approach, Electrical Code also allows for the use of metering data to determine the actual power draw of the equipment; the actual data is then used to determine whether an electrical service upgrade is needed. A staged approach would install a couple electrified units and trend the new electrical load; if the power draw of the mechanical equipment is proven to be less than the nameplate, then additional load could be added to the existing service. This process would be repeated until either the service needs to be upgraded or all units are electrified.

## Building Electrical System Considerations

### Battery System

Use of battery systems is growing across the building industry, both for resiliency and demand reduction purposes. However, batteries are not suited for every situation. A 250 kW battery system was evaluated for the Recreation and Senior Center, mostly for demand reduction and load shifting purposes. However, the high first cost was unable to offset the annual demand cost reductions, and resulted in a payback longer than the measure life. While this option is currently not included in this plan, it could become a viable option in the future as the technology improves and becomes more cost-effective.

### Backup Power

Throughout this study, the impacts to existing backup power systems were evaluated where buildings already had generators. In general, it is recommended to continue using fossil fuel-based generators (e.g. propane) instead of using batteries. Since these units very rarely run, the added cost of batteries is not justifiable. Additional information is available for each building in the building audit reports.

## Net Cost of Electrification

The total cost is the total amount that will need to be allocated for budgetary purposes. The net cost represents the total cost minus the replacement cost that would've been spent to replace the existing units with like-for-like fossil fuel units. Note that there is a significant net cost premium for full electrification due to electrical upgrades.



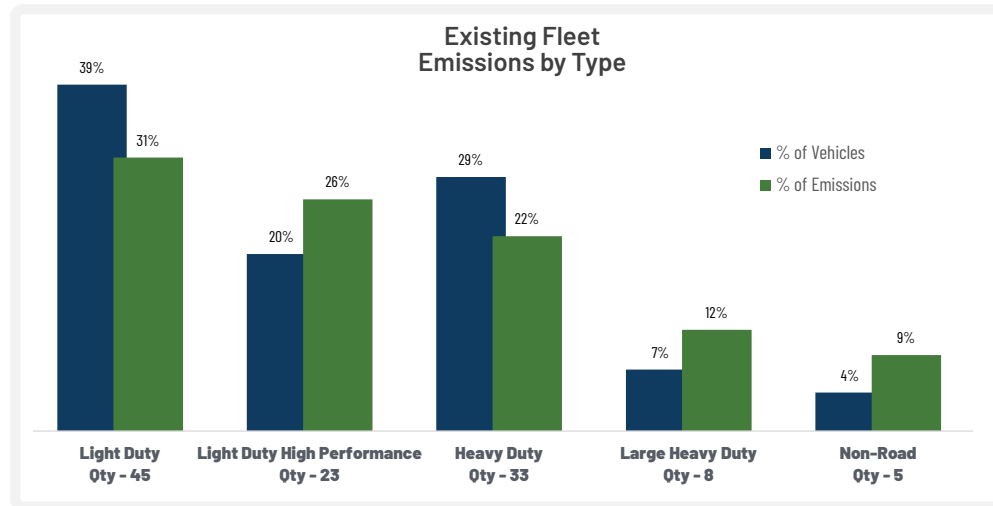
# Renewably Powerable | Fleet Electrification

## Existing Fleet

The City of Louisville provided data from 2022 for their fleet vehicles. Vehicles utilized by the city were divided into five categories.

- Light duty vehicles** – Light duty vehicles make up the majority of the vehicles the city owns. They typically encompass any normal passenger vehicle such as sedans, SUVs, light pickup trucks, and minivans. This vehicle is mostly used for transporting people and small amounts of cargo.
- Light duty high performance vehicles** – This category incorporates mainly police vehicles. These vehicles are similar to the light duty vehicles but have been altered for higher performance due to specific police requirements.
- Heavy duty vehicles** – Heavy duty vehicles mostly incorporate large pickup trucks. These vehicles are used for hauling and towing heaving loads.
- Large heavy duty vehicles\*** – This category is for the large snow plows and street sweeper. These vehicles typically are only used seasonally and have a varying work load that is dependent on the weather
- Non-road vehicles\*** – These vehicles are typically construction type vehicles. There usage is usually measured in hours of operation instead of miles.

\*There are not currently market-ready EV alternatives for these categories.



Please refer to the appendix for additional details on fleet electrification

Department	Vehicle Category					Total [#]
	1 Light Duty	2 Light Duty High Performance	3 Heavy Duty	4 Large Heavy Duty	5 Non-Road	
Building Inspection	3					3
Code Enforcement	2					2
Engineering	4					4
Facilities	3		1			4
Finance	2					2
Parks	10		12			22
Police	7	23				30
Rec Center	1		2			3
Streets			4	5	2	11
Utilities			10	2	3	17
Water Treatment	4		1			5
Waste Water Treatment	3		1			4
Open Space	4		2	1		7
<b>Grand Total</b>	<b>45</b>	<b>23</b>	<b>33</b>	<b>8</b>	<b>5</b>	<b>114</b>

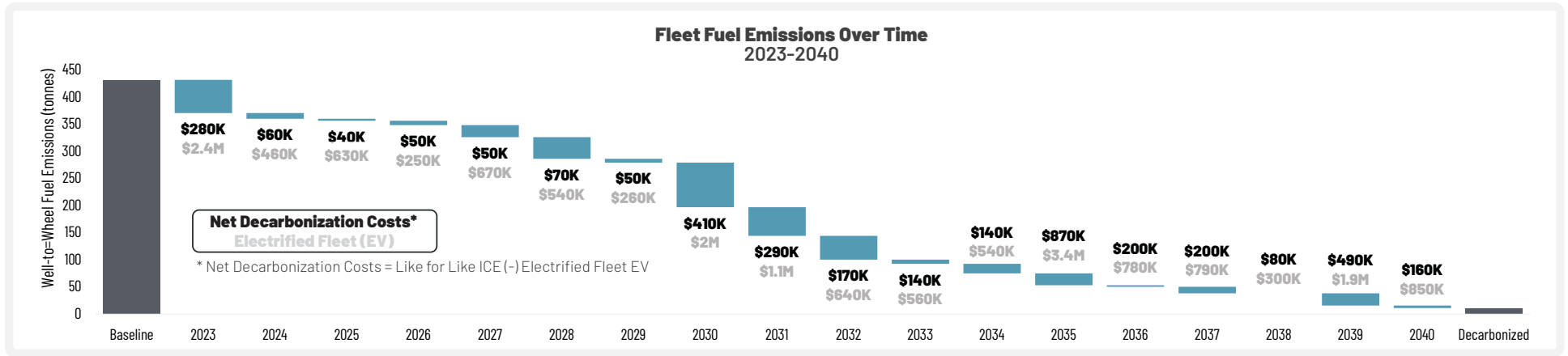
## Existing Fleet Emissions

Based on vehicle-specific annual usage, fleet emissions were calculated using publicly-available data from the Environmental Protection Agency. Three key factors contribute to a vehicle's annual CO2 emissions: average miles driven/hours operated, fuel efficiency, and CO2 emissions factor of fuel source. Emissions data is well-to-wheel, meaning it captures to complete life-cycle emissions associated with extraction, production and consumption of fuel.

# Renewably Powerable | Fleet Electrification

## Fleet Conversion Plan

Transitioning from internal combustion engine (ICE) vehicles to EVs can substantially lower overall carbon emissions. It is recommended that the City replace vehicles with EV after the current vehicle has met its replacement criteria. Early replacement is not assumed in the analysis – simply a year-over-year swap with an EV once the vehicle reaches the appropriate mileage or service life based on the vehicle type (i.e. 12yr/120,000 for most light duty vehicles).



### Vehicle Availability

Not all vehicles in the City’s fleet have suitable replacements commercially available. The current EV market is dominated by light duty vehicles, with emerging options in pickup and SUV categories. There currently are no manufacturers that outfits an EV for police vehicle use. However, the market is rapidly changing so over the course of the next 5 years new innovation and demand should allow for police patrol vehicles to come to market. Some vehicles will need to be replaced before there is an EV equivalent on the market, in those cases it is assumed that a new ICE vehicle will be purchased and then will be replaced with an EV in the next cycle. It is assumed all type 2 vehicles (mostly police patrol vehicles) will not have an EV equivalent until 2027 and all type 3, 4, and 5 vehicles until 2030.

### Summary of Financial Metrics

EVs have a higher initial capital cost, but lower fuel and maintenance costs than ICE vehicles. Fueling vehicles using electricity is approximately 25% the cost of gasoline. Maintenance costs of are 50-75% of gasoline equivalents. Some of the initial cost is offset by federal and incentives. Over time, initial cost is also trending downward as production volumes increase and battery costs decreases.

Over the next 17 year, the Total Cost of Ownership (TCO) of replacing vehicles with EVs would be comparable with ICE vehicles. The amount of CO2 emissions saved would be ~9 million lb. Analysis assumes 2.5% inflation, electric rate inflation of 2.44%, and cost escalation of 2.65%. Initial cost is inclusive of federal incentives for EVs (both passenger and heavy duty) and charging infrastructure.

### Fleet Conversion Life-Cycle Cost Analysis (2023-2040)

Scenario	Vehicle [\$]	Fuel [\$]	Maintenance [\$]	Total [\$]	2023-2040 Life-cycle Emissions [Tonnes CO <sup>2</sup> e]	Decarbonized Reduction from Baseline in 2040 [%]
Like-for-Like (ICE)	\$14.5M	\$3.9M	\$1.6M	\$20M	7,300	-
Electrified Fleet** (EV)	\$18.0M	\$1.7M	\$1.2M	\$21M	3,100**	97%

\*\*Costs & Emissions are based on the fleet conversion happening over time and account for both costs and emissions associated with the existing ICE vehicles before they are electrified.

# Renewably Powerable | Electric Vehicle Charging

## Charging Infrastructure

### Overview

Fleet electrification requires infrastructure to charge vehicles to they can be used in daily operations. In addition, there is a desire to provide public charging for electric vehicles to encourage residents to drive EVs themselves. **The costs associated with this infrastructure are included in the building decarbonization costs.** This includes any electrical service upgrades needed to accommodate the new electrical demand. Refer to the Building Audit reports for site specific information on EV Charging infrastructure and it's impacts. Fleet charging should occur almost entirely on-site at City facilities. Charging at publicly accessible stations is much higher cost and adds operational uncertainty.

### Charging Power

Charging stations are available in a range of power levels. Level 2 and 3 charging are the most appropriate for fleet use. Level 2 outputs AC power from 7-18kW, adding 15 to 40 miles of range per hour depending on the vehicles type and power level. Level 2 charging requires a 208 volt or 240 volt AC service. Level 3 outputs DC power at 25+ kW and typically requires a 480 volt AC service.

Primarily Level 2 charging for fleet use is recommended, as it provide good value for infrastructure investment when factoring in cost and time required to charge when compared to Level 3 chargers. Level 3 chargers can make sense when high use vehicles need quick recharging, though these chargers will cost more to install and incur a higher charging cost than level 2 chargers.

### Public Charging

It is recommended to install a small amount of charging intended to be used by City residents and the general public. These chargers are an important demonstration of the City's decarbonization and a city service for residents. These should be located where the intended use of a site aligns with public use.

Facility	# of EV Charging Parkings Spaces			
	Existing Public Charging [#]	New Public Charging [#]	New Fleet Charging [#]	Total Public + Fleet Charging [#]
Art Center	0	0	0	0
City Hall	0	8	6	14
City Services	0	4	52	56
Coal Creek Golf Course	2	4	0	6
Library	2	10	8	20
Sid Copeland Water Treatment Plant	0	0	6	6
Police and Municipal Court	0	2	10	12
Recreation and Senior Center	2	6	4	12
Howard Berry Water Treatment Plant	0	0	0	0
Wastewater Treatment Plant	0	0	4	4
<b>Total</b>	<b>6</b>	<b>34</b>	<b>90</b>	<b>130</b>

Each EV charger has two charging connections, meaning it provides charging for two parking spaces.



# Renewably Powerable | Miscellaneous Electrification

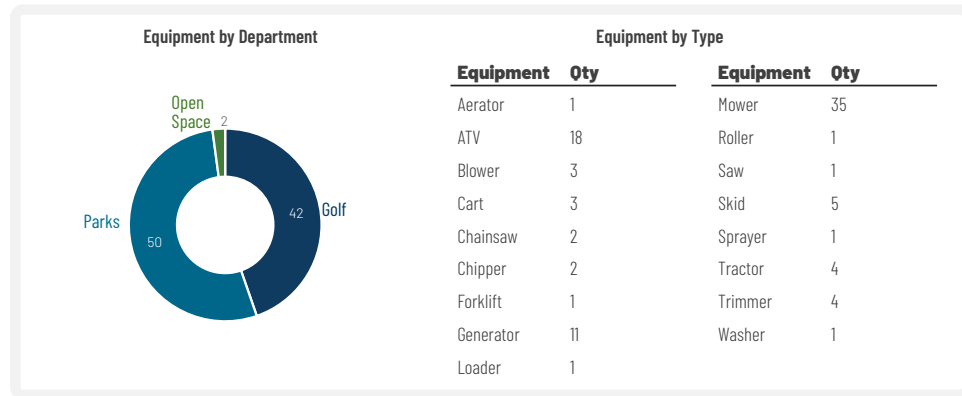
## Conversion Plan

Small gasoline engines like those in gas powered riding mowers and garden equipment are fast becoming the number one contributor to smog forming air pollution. These small engines emit hundreds of times more pollutants per hour than automobile engines.

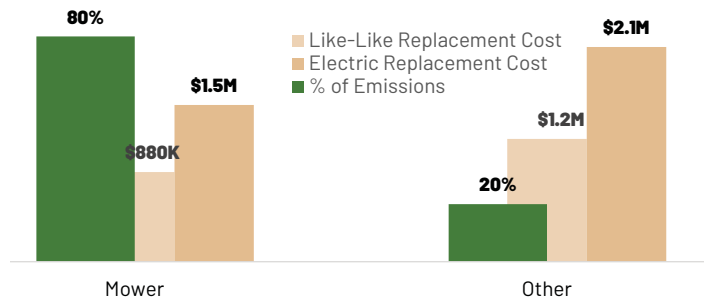
New lithium battery powered riding mowers, park equipment, and leaf blowers compete effectively with gasoline powered tools regarding power and performance and have significantly longer operating run times than older electric models. On top of that these new tools are quieter and will not produce the lingering gasoline smells that are an unhealthy indicator of the fumes and pollution that gasoline powered equipment produce.

### Current Equipment

The city currently has three departments that own the majority of the small engine vehicles and equipment, the golf department, parks and recreation, and open space.



Lawn mowers account for **80%** of total emissions



### Small Engine Electrification

Most the equipment categories currently have electric equivalents available. The categories that do not or have very limited choices are, tractor, skid, loader, chipper, and roller. Some of these types of equipment are actively being developed. In addition in the mower category there are some specialty Coal Creek Golf Course lawn mowers that do not have a good electric choice.

Unfortunately unlike the electric fleet vehicles most of the electric lawn care equipment does not have battery warranty that match the equipment warranty. As this technology matures the warranties will get better.

Another large hurdle for this equipment is the cost of the electrified version. Most electric versions of the non handheld equipment is about 1.75 times the cost of the gas version. Maintenance costs are lower but not enough to offset the initial up front cost.

**It is recommended to replace existing equipment that is at the end of its life (most large equipment is replaced by the department every 8 years) with the electric equivalent.**

### Refueling & Charging

With the newest battery technology available, most of the larger equipment is able to operate during a typical work day. This equipment isn't designed for battery swap out in the field, so if the battery charge got low the operator would need to plug it in somewhere to charge or switch to a different piece of equipment. Typically they would need to switch to a different piece of equipment. The charging time for this equipment isn't fast enough to get a full charge in a reasonable amount of time. For smaller hand held equipment spare batteries can be carried along to change out and when the charge gets low. This will take some training to get operators use to carrying around extra batteries that are fully charged. When the city switches to the fleet vehicles to EV's, most work style trucks may have the ability to charge auxiliary devices like batteries for small hand held equipment. For most of this equipment it is recommended that everything be charged overnight as it is unlikely that anything would be able to be charged during the day and used that same day.

### Charging

Most small motor equipment will require at least a 120v 15amp circuit to charge. It is recommended that there is one dedicated plug for each piece of equipment. Additional electrical infrastructure will be needed to make charging plugs accessible to all equipment where it is stored.

### Battery Life

Battery technology is improving significantly year to year. Most batteries are Lithium based and have longer life spans than the equipment. Depending on the manufacture the battery warranty may or may not match the typical equipment life. For small hand held equipment purchasing extra batteries will allow longer use and does not add much cost. For larger equipment the battery can be a significant part of the cost and having a second battery on hand will be cost prohibitive. In addition the larger equipment isn't always designed for quick battery change outs. Similar to electric vehicles batteries for this type of equipment will eventually have warranty life greater than the cities typical use.

# Renewably Powered | Photovoltaics

## Photovoltaics

Renewable energy plays the important role of offsetting remaining carbon emissions after building load reductions and electrification has been made. This can be handled through a variety of avenues – behind-the-meter systems, Community Solar Gardens, and utility subscriptions. Since City of Louisville already offsets its current electricity with renewable utility subscriptions, the focus was on customer-owned, behind-the-meter systems that would provide more value to the City of Louisville.

### On-site Versus Grid Purchase

Some of the benefits of on-site solar vs renewables purchased from the grid are listed below.

- Avoid solar sprawl at scale - avoiding offsetting of impacts to rural areas.
- Avoid electrical energy loss due to transmitting power over long distances.
- Dispersed approach is typically grid beneficial, especially when on-site renewables are a small percentage of the total usage of building - most solar on this bldg would be self used.
- Enable future resiliency through addition of batteries and storage.
- Demonstrate decarbonization to local Louisville community.

### High Priority Sites

High priority sites were recommended based on the following considerations:

- Financial and technical feasibility
- Impact & considerations with land development

Facility	Proposed			
	Array Type [-]	Array Size [kW]	Array Production [kWh/year]	Cost Estimate [\$]
Art Center	None	-	-	-
City Hall	None	-	-	-
<b>City Services</b>	<b>Ground</b>	<b>286</b>	<b>315,000</b>	<b>\$870K</b>
Coal Creek Golf Course	Ground	100	252,000	\$1.2M
Library	Roof	128	174,000	\$520K
Sid Copeland Water Treatment Plant	Ground	375	559,000	\$1.3M
Police and Municipal Court	Ground	257	397,000	\$910K
<b>Recreation and Senior Center</b>	<b>Ground</b>	<b>380</b>	<b>569,000</b>	<b>\$1.2M</b>
Howard Berry Water Treatment Plant	Ground	200	302,000	\$750K
<b>Wastewater Treatment Plant</b>	<b>Ground</b>	<b>690</b>	<b>1,026,000</b>	<b>\$2.1M</b>
<b>Total</b>			<b>3,593,000</b>	<b>\$8.8M</b>





# Renewably Powered | Photovoltaics

## On-Site Design Considerations

### Where to create solar arrays: ground, rooftop, or parking canopies?

The first constraint on system size is the available space on the property. Since ground mounted solar arrays are typically the least expensive, this is the first priority, followed by rooftop and then parking canopies. Solar systems benefit from economies of scale – generally, the larger the system, the cheaper it is per kW.

### Financial size optimization

In some cases, it is possible to add more solar capacity than can be used by the facility. Typically, based on current regulations, this scenario would mean giving the value of this electricity back to the utility. All recommended on-site solar in this roadmap avoids significant amounts of such value “give back”.

### Roof age

Roof membranes and solar PV modules have similar lifespans, about 30 years. De-installation/re-installation of a solar system is costly, creating unviable economics in addition to unnecessary hassle for facilities management down the road. The PV array at the Library is the only recommended system that is roof-mounted. This array should be installed at the time of the Library roof replacement.

### Assumed useful life of solar

The National Renewable Energy Laboratory estimates the operational lifespan of photovoltaic systems to be 25 to 40 years, and a recent study by the Lawrence Berkeley National Lab found that utility scale solar developers assume an average useful life of ~35 years. The financial pro forma included in this roadmap assumes a useful life of the ground and canopy mounted solar arrays of thirty years, and 25 years for roof mounted arrays (based on typical 25 year roof life). While this is longer than the warranty period, it is expected the arrays will be functional for this period and potentially beyond. A small output degradation is assumed over time, consistent with standard industry practice. Note the pro forma does assume micro-inverter replacement as part of solar operation and maintenance at year 15.

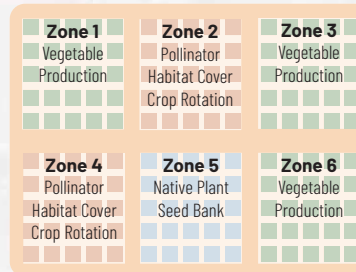


Credit: Jack's Solar Garden

### Agrivoltaics

The co-location of ground mounted solar arrays and agriculture (such as community pea patches), or carbon sequestering/pollinator habitat restored native meadows, are a great holistic sustainability solution. All ground mount systems should have some component of agrivoltaics to further mitigate carbon whether it's drought resistant irrigation, pollinator habitats, or wild flowers.

### Planting plan for Denver Botanic Gardens Solar Array



## Potential future opportunities for larger-scaled Louisville owned renewables

### Virtual net metering

The State of Colorado recently adopted virtual net metering legislation, which potentially enables utility customers with multiple site portfolios to transfer the electricity value of solar production from one location to another. The details of this legislation are complex and still being understood, but over time, it may enable Louisville to look at larger scale opportunities, such as undeveloped land, open water, or park areas to be used for solar production.

### Water reservoir or sewage processing pond floating solar

A specific opportunity for larger scale solar (which would require net metering to make financially feasible) is floating solar. An initial evaluation suggests that an array ~400kWdc could sit at the Sid Copeland Treatment Plant reservoir. Typically arrays need to be on the scale of 1-2MW or larger to cost-compete with ground mount options.

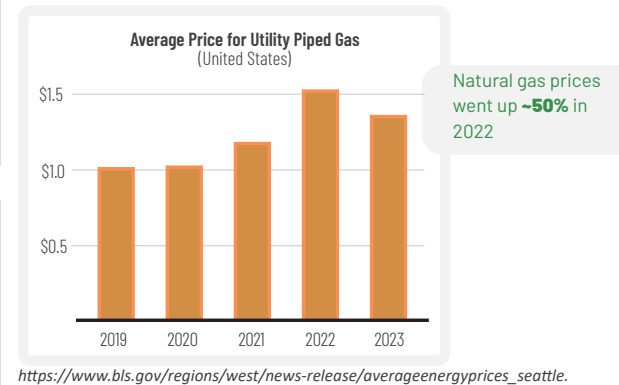
# Financial Considerations | Financial Considerations

## Financial Considerations

The process of decarbonization doesn't occur in a vacuum, and other financial considerations beyond initial costs or utility savings come into play. Different financial scenarios or considerations impact how the cost of decarbonization might be viewed – these are the **additional avoided costs** discussed below. In addition, the process of electrification, in particular, can yield additional benefits– known as **co-benefits**. Where quantification is possible, it is provided, based on economic modeling derived from best and most recent available science. **All figures assume a value stream of the roadmap horizon of 2023 - 2040.**

### Additional Avoided Costs

<p>Estimated Avoided Future Carbon Emissions Penalties</p> <p><b>\$7,335,000</b></p>	<p><b>Avoided future carbon emissions penalties</b></p> <p>As climate change becomes an increasingly current (rather than future) reality, carbon emissions penalties are starting to be applied by leading organizations to internal operations, and by governing bodies as regulation. Colorado recently adopted HB21-1286, which establishes penalties for high Energy Use Intensity private sector buildings, and the City of Denver created Energize Denver, which has even more aggressive carbon penalties. Leading private sector firms, such as Microsoft, also apply an internal cost of carbon to lower immediate emissions and begin bending decision making to anticipate a more aggressive future carbon penalty regulatory environment. The Canadian Federal government recently adopted an internal decision making price of \$261 CDN\$/mton, and the EPA has draft rule of \$261US. While these have yet to become actual regulatory penalties, they indicate a likely direction over time as climate change worsens. For this roadmap, an initial penalty stream based on the Colorado carbon price of \$76/mton is applied from 2023-2027, moving to the draft EPA price for 2028-2040.</p>
<p>Estimated Avoided Cost of Future Natural Gas Price Shock</p> <p><b>\$732,000</b></p>	<p><b>Natural gas price shocks</b></p> <p>Historically, natural gas has substantially greater price volatility than electricity, which isn't captured by typical escalation rates. The Russian invasion of Ukraine has put a spotlight on the potential for long term natural gas price instability – during 2022, natural gas prices increased by 50%, making previous natural gas escalation rate assumptions of 3-4% invalid. Many risk forecasters anticipate further natural gas instability based on volatility of many producing nations. This roadmap includes a scenario of a second natural gas price shock in 2030, mirroring the impact of the 2022 shock.</p>
<p>Value of Solar for Future Electric Micro-grid Backup Power</p> <p><b>\$900,000</b></p>	<p><b>Future electric micro-grid backup power</b></p> <p>Currently, emergency power is provided by backup fossil fuel powered generators. A decarbonized alternative, with potentially even greater resiliency, is electric batteries fueled by on-site solar. The cost of batteries for such systems is currently cost-prohibitive, but likely to drop in the future. Installing on-site solar as proposed for overall renewable power for the City has a dual benefit of helping enable future electrical islandability. The value of this is assumed at 10% of the overall cost of proposed on-site solar.</p>



# Financial Considerations | Co-benefits

## Co-benefits

### Employee and visitor health and performance: Air quality and Thermal comfort

The proposed decarbonization program will also enable improvement of ventilation and filtration systems that are part of HVAC systems being electrified. Demand control ventilation can be added and optimized to better filter media. Elimination of natural gas combustion removes any risk of noxious combustion gasses (NOx, SO2, CO) from malfunctioning exhausts, etc. Air sealing the buildings, which retains tempered indoor air, has the added benefit of excluding smog and wildfire smoke, as well as reducing mold – a substantial benefit. Finally, City Hall currently has very poor temperature control, with overheated and colder work areas. The new electrified and rezoned system will enable more comfortable work temperatures there.

Value of Improved  
Employee and Visitor  
Health and Performance

**\$1,027,000**



### Employee retention – climate leadership

The cost of employee turnover (training, lost knowledge, etc.) is significant in any organization. Employees take pride in working for organizations which have integrity in reflecting their values. This value stream assumes a 2% reduction in employee turnover due to its expressed climate leadership.

Value of Employee  
Retention Based on  
Climate Leadership

**\$714,000**



### Additional Co-benefits [Not Quantified]

**Community Decarbonization Education & Leadership** Decarbonization is a signal to the community about the importance of the climate action goals the City has set. Specific elements such as heat pumps, renewables, and efficiency measures can be used for classes etc. to inform residents about zero carbon living.

**Eliminate Gas Explosion Potential** Natural gas is flammable gas that has risk of combustion. While the likelihood is statistically low, the potential cost and impact is extreme.

**Eliminate Gas Cooking Burns** Natural gas is currently used for cooking in the Golf Course Clubhouse. On-site combustion for cooking can lead to burns and injuries. Induction ranges and electric combi-ovens (which use infrared, microwave, steam, and heat together for great efficiency) reduce those risks.

**Louisville “Brand”** Louisville’s decarbonization program is leading edge, and if desired, could be used for publicity and to enhance the City’s reputation, with likely economic development benefits.

**Job Creation** Louisville’s decarbonization work will result in local employment that would not otherwise occur in a business-as-usual scenario.



## Annual Operating Expense Impacts

### Electrification & Building Utility Cost Impact

Electrification can lead to increased annual utility costs due to the existing utility rate structures, where electric demand charges are high and the cost per unit energy of electricity is typically higher than natural gas. Specifically for Xcel energy, electric demand charges (\$/kW) are particularly high. This makes demand reduction strategies particularly important. Electric energy (\$/kWh) charges for Xcel are lower than most utilities, but are still approximately 50% higher than gas on a \$/kBtu basis.

### Building Demand Charges

Hybrid gas systems will also provide value by reducing annual demand (kW) costs in comparison to an all-electric alternative. Gas-backup systems have the option to lockout the primary heating (heat pumps) when temperatures are lower to avoid potentially costly demand (kW) charges. This strategy can help alleviate some of the demand penalty associated with the all-electric option, but it will also incur slightly more energy usage and more fossil fuel combustion.

### Renewables

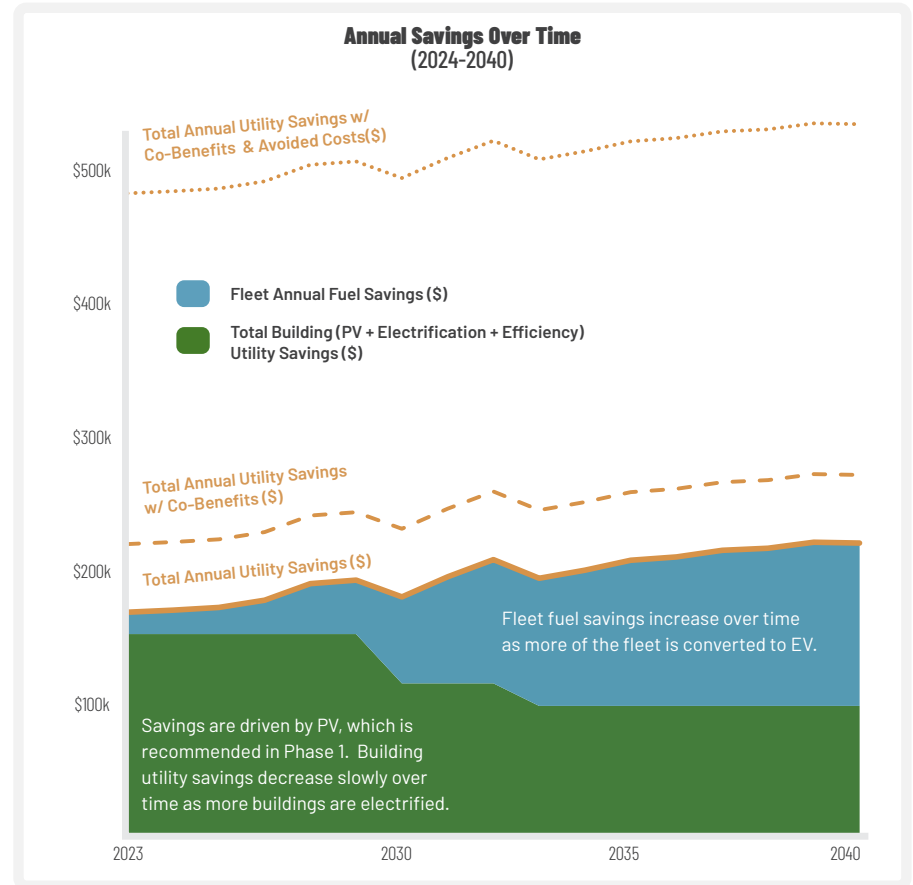
Renewable PV systems account for the majority of the utility cost savings at the building level. Adjusting utility rate schedules based on the recommended PV array was analyzed as part of this study.

### Efficiency & Load Reduction

Efficiency & load reduction measures typically have positive utility savings as they do not involve fuel switching.

### Co-Benefits & Avoided Costs

Additional benefits realized through the process of electrification. Annualized co-benefits and avoided costs are shown in the figure to the right.



# Funding & Implementation | Funding Options

## Funding Options

Funding is a critical piece of any decarbonization roadmap to ensure an implementation plan is successfully executed. Over the course of the project, several grant and stimulus funding opportunities were researched and identified along with capital and financing streams that are applicable to the implementation of the City's roadmap. In addition, interviews with the finance team were conducted, and funding workshops were held in March and May of 2023. Below is a list of applicable funding sources identified to help the City fund and implement the recommendations within the Internal Decarbonization Roadmap. All information below is based on research conducted during the year of the study. Grants and stimulus funding is likely to vary in future years.

### Grants and Stimulus Funding\*

- Colorado Public Building Electrification Grant\*\*
- Colorado High Efficiency Heating & Appliances Program
- Colorado Department of Local Affairs Grants
  - Energy and Mineral Impact Grant
  - Renewable Energy Grant
- State of Colorado Geothermal Grant
- Congressionally Directed Spending\*\*
- FEMA Building Resilient Infrastructure and Communities (BRIC) grant
- Inflation Reduction Act
  - Investment Tax Credit – Direct Pay for renewable energy systems, battery storage
  - Grant programs for electric vehicles and electric vehicle charging
- US Department of Energy grants for municipalities
- Xcel rebates
- Mow Down Pollution Grant\*\*
- Charge Ahead Colorado Grant\*\*
- Colorado Fleet-Zero Emission Resource Opportunity ("Fleet-Zero")\*\*

\*The key to successful grant applications: the full application and submitted project needs to move the needle, be "shovel ready", compelling and create benefits for the community.

\*\* Grants currently being applied for during the 2023-24 fiscal year for project implementation.

### Capital and Internal Funding

- Allocate dedicated stream of capital to sustainability during bi-annual budget cycle
- Internal borrowing from enterprise funds with additional capital availability.
  - City has experience with this method of funding projects
  - Some funds are heavily restricted
- Diverted operational/Capital Improvement Plan dollars
- Dedicated sustainability tax – with % earmarked towards municipal & community sustainability projects
  - Investigated in 2023 through Open Space tax extension discussions. Recommend re-investigating in future years.

### Financing Options

- **Tax Exempt Lease Purchase** – an installment purchase, conditional sale or lease by a public agency using the installed equipment as collateral and financed by an investor or bank.
- **Bond** – debt obligation issued by a public entity using the loan for public projects, such as constructing buildings, highways, or renovations.
- **Certificates of Participation (COP)** – is a type of financing where an investor purchases a share of lease revenues to secure financing for public sector projects.
- **Energy Performance Contracting** – a contracting and financing tool that leverages multiple sources of funding to construct energy savings projects for public sector agencies.
- **Energy-as-a-service** – a financing tool where a public agencies pays for an energy service without having to make any upfront capital investments and transfers ownership of the capital investment to a third party investor.
- **Infrastructure-as-a-service** – a financing tool where a public agencies pays for infrastructure via an on-going fee or lease payment without having to make any upfront capital investments and transfers ownership of the capital investment to a third party investor.

# Funding & Implementation | Financial Analysis

## Financial Analysis

A financial analysis was conducted to determine the true cost of decarbonization. This analysis reviewed the like-for-like costs to continue replacing equipment and fleet with the current gas version and compared it to the cost to electrify and decarbonize operations, mechanical equipment and fleet. All costs within this report are turnkey and include final design, engineering, procurement, construction management, and commissioning costs. The financial impact of the project to the City was calculated from 2024 through 2040. The like-for-like project costs were derived from a combination of the City's CIP budget and detailed cost estimating of turnkey like-for-like equipment replacement as the comparison scenario.

If the City were to continue replacing fleet and mechanical systems with like-for-like gas replacements, the total cost to the City through 2040 would be approximately \$27M with no grants or anticipated utility cost savings. If the City were to electrify all fleet, mechanical equipment and operations, the cost would be approximately \$51.1M including the recommendations of EV charging, load reduction measures, and renewable energy. Decarbonization would allow for the City to capture \$7M in utility and fleet operational savings over the term, secure \$3-13M in grants, incentives and stimulus funding, and help to mitigate the impacts of climate change on the community.

$$\text{Total Net Cost of Decarbonization} = \text{Total Construction Costs} - \text{Total Like-for-Like Construction Costs} - [\text{Total Project Savings} + \text{Total Grants}]$$

The Summary Table to the right shows the net costs of decarbonization as \$4.4M to \$14.4M depending on the level of grants that the City is able to secure. The co-benefit and avoided costs are not included in this number and would provide an additional \$10.6M in benefits to the City through 2040 for a total potential net savings of \$6.2M over the business-as-usual or "like-for-like" replacement scenario. This number is calculated by taking the gross cost to decarbonize and subtracting out what the City would be spending anyways and the project savings and grants/stimulus.

Summary Table	
<b>Total Construction Costs</b>	<b>~\$51M</b>
<b>Total Like-for-Like Construction Costs</b> (costs that the City would continue to pay)	<b>(~\$27M)</b>
<b>Total Project Savings</b> (Utility, Fleet, Solar)	<b>(\$7M)</b>
<b>Total Grants</b>	<b>(\$3M-13M)</b>
<b>Total Net Cost of Decarbonization</b> (varies based on final grant awards)	<b>\$4M-14M</b>

It is recommended that the City do a more in depth financial analysis for each phase to produce a complete and final amortization schedule either internally or with a selected lender. The annual financial model to the right shows annual estimated costs, savings, capital allocation and a summary each year from 2024-2040.

### Notes:

**Total Construction Costs:** Total **turnkey** construction costs needed for budgetary purposes. **Costs do not include incentives or grants. The Inflation Reduction Act will potentially offset 30-40% of the cost of renewables and fleet.**

**Total Like-for-Like Construction Costs:** The **turnkey** "business as usual" costs for replacing existing fossil fuel equipment with similar fossil fuel equipment. Costs were derived from a combination of the City's CIP budget and detailed cost estimating of equipment replacement as the comparison scenario.

**Turnkey Costs:** Include design, engineering, construction management, project management, and commissioning.

Annual Financial Model						
Year	Total Construction Costs	Solar IRA Direct Pay (30%)	Total Grants	Total Project Savings	Total Like-for-Like Construction Costs	Total Net Cost of Decarbonization
2024	\$23,979,948	\$0	\$8,000,000	\$337,000	\$10,184,682	\$5,458,266
2025	\$629,972	\$2,692,000	\$100,000	\$340,000	\$599,000	(\$3,101,028)
2026	\$244,741	\$0	\$100,000	\$344,000	\$201,000	(\$400,259)
2027	\$661,949	\$0	\$100,000	\$355,000	\$622,000	(\$415,051)
2028	\$538,469	\$0	\$100,000	\$380,000	\$469,000	(\$410,531)
2029	\$255,583	\$0	TBD	\$385,000	\$213,000	(\$342,417)
2030	\$8,796,674	\$0	TBD	\$360,000	\$4,253,497	\$4,183,177
2031	\$1,126,108	\$0	TBD	\$390,000	\$843,000	(\$106,892)
2032	\$638,869	\$0	TBD	\$416,000	\$478,000	(\$255,131)
2033	\$5,449,661	\$0	TBD	\$389,000	\$2,653,746	\$2,406,915
2034	\$537,051	\$0	TBD	\$401,000	\$402,000	(\$265,949)
2035	\$3,440,025	\$0	TBD	\$416,000	\$2,574,000	\$450,025
2036	\$775,290	\$0	TBD	\$421,000	\$580,000	(\$225,710)
2037	\$783,153	\$0	TBD	\$431,000	\$586,000	(\$233,847)
2038	\$297,040	\$0	TBD	\$434,000	\$222,000	(\$358,960)
2039	\$1,923,560	\$0	TBD	\$443,000	\$1,439,000	\$41,560
2040	\$847,035	\$0	TBD	\$442,000	\$693,000	(\$287,965)
<b>Total</b>	<b>\$50,925,129</b>	<b>\$2,692,000</b>	<b>\$8,400,000</b>	<b>\$6,684,000</b>	<b>\$27,012,925</b>	<b>\$6,136,204</b>

# Funding & Implementation | Implementation Options

## Implementation Options

Delivery and implementation of the decarbonization plan is laid out through 2040. As part of this analysis, it is recommended that full decarbonization is pushed to 2040 due to technology barriers and the recommendation of not replacing fleet and equipment before the end of its useful life. Three primary methods are recommended for the City to consider for implementation of all phases of the roadmap and outlined below. Due to the complexity, uniqueness and scale of the recommendations, three larger phases or mobilizations are recommended for the implementation portion of the project to reduce the burden on staff, consolidate resources and gain cost efficiencies by scaling the project. The methods below are chosen to account for the metrics above and to lower the overall cost to the City through efficiencies and to reduce the amount of resources needed throughout each phase (versus a piecemeal approach).



### Energy Performance Contracting

This method utilizes a state-supported program through the Colorado Energy Office that has been used for over 200 projects within public agencies in the state of Colorado. Energy Service Companies are pre-qualified through the State to assist local governments within turnkey implementation of decarbonization projects for fleet and buildings. This approach allows for flexibility in project funding with the ability for the public agency to combine multiple funding avenues such as grants, stimulus, capital and third party financing. This approach is recommended for the larger, complex buildings that require renewable energy, load reduction measures, electrical upgrades, and mechanical electrification as a single project or construction mobilization such as at the City's recreation center. Energy performance contracting enables a jurisdiction, to "surge" a major decarbonization effort and avoid the quick ramp up/ramp down staffing impacts that would otherwise be required to manage such projects.

Further information can be found here: <https://energyoffice.colorado.gov/clean-energy-programs/clean-energy-financing/energy-performance-contracting>

#### When to Use:

- Ph1 Renewables**
- Ph1 Load Reduction**
- Ph. 1 -3 Mechanical**
- Some EV Charging**
- All Buildings
- Larger Systems



### Design-Build or Design-Bid-Build

Traditional method for construction projects where the City would project management and bid out individual scopes of work for design, construction or both. This is recommended for smaller, less complex buildings and scopes of work that require a simple like-for-like replacement of mechanical systems such as the Art Center.

#### When to Use:

- Smaller HVAC Systems**
- Phase 2 Art Center

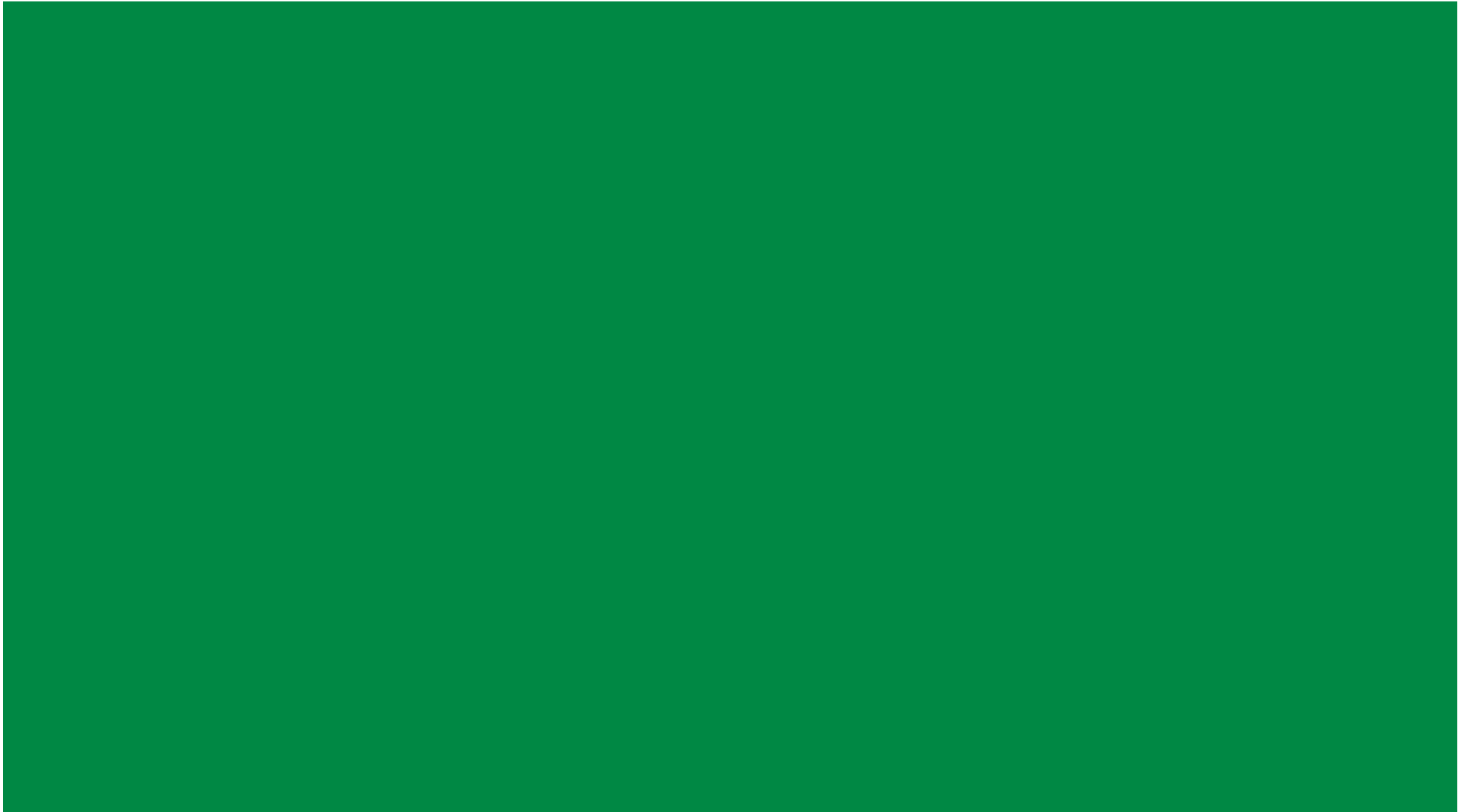


### Self-Implementation

This method is recommended for scopes of work that the City can conduct internally if staff time and resources allow. This method is recommended for equipment replacements (golf carts, lawn mowers, etc) and EV charging infrastructure.

#### When to Use:

- EV Charging**
- Fleet Purchase**
- Misc. Equipment**





# Internal Decarbonization Plan

## Final Presentation & Plan Adoption

City of Louisville, Colorado  
August 15, 2023



# Project Overview

## City of Louisville Decarbonization Plan



Electrification  
& Efficiency

- Buildings
- Fleet
- Operations
- Parks Equipment



Renewables

- Roof-mounted
- Ground-mounted
- RECs

## Team Leads



Kayla Betzold  
Louisville Sustainability  
Manager



Ashley Brasovan  
McKinstry Team Director



Brian Goldcrump  
McKinstry Technical  
Study Director

## GOALS → DELIVERABLES

■ Develop an implementable  
action plan to achieve  
cost-effective  
decarbonization.

■ Foster buy-in across City  
departments and the  
public.

- 10 Building Audit Reports
- Final Summary and Plan
- Board Presentations
- City Council Presentations

## Project Timeline

Phase 1: Information Gathering and Audits

Phase 2: Analysis

Nov.

★ City Council  
Presentation

May

Phase 3: Roadmap, Action Plan, + Presentations

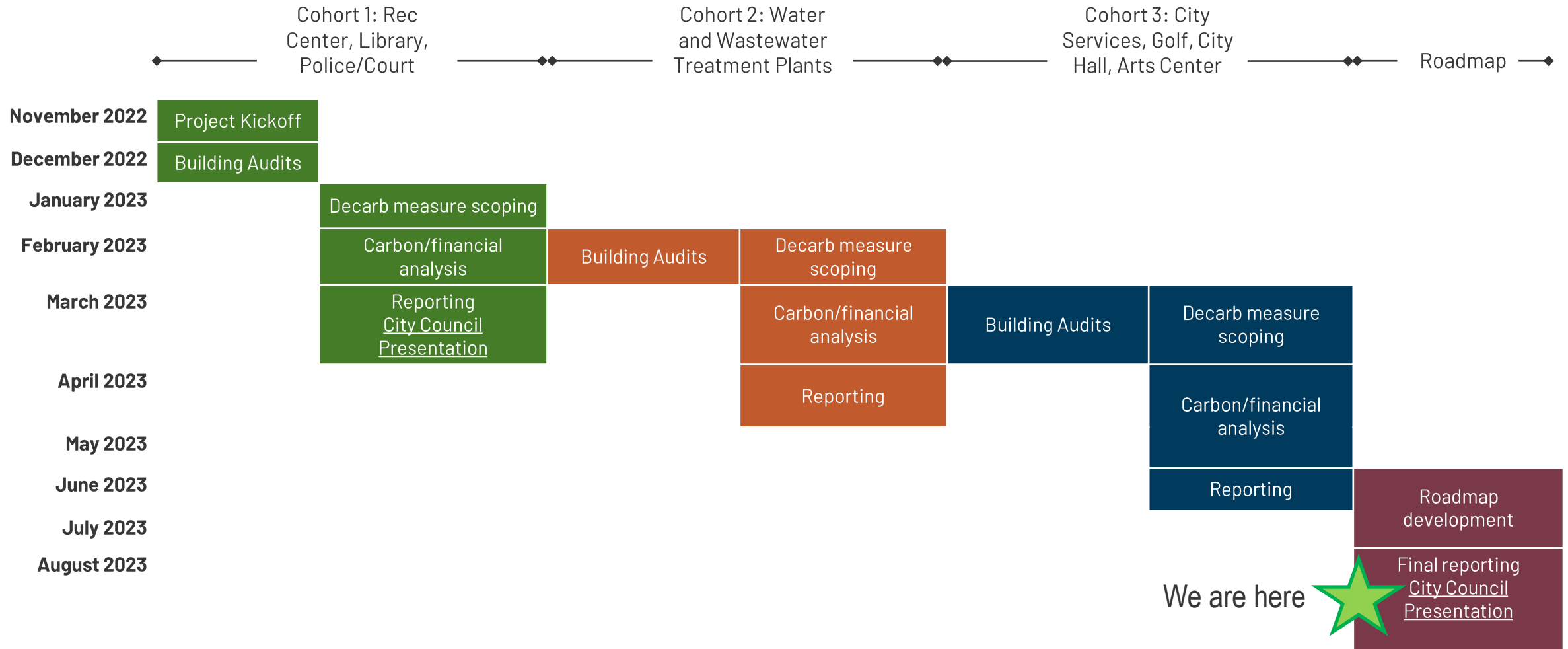
Implementation

August

★ City Council  
Presentation

**106**

# Internal Decarbonization Process



Funding Analysis - On-going

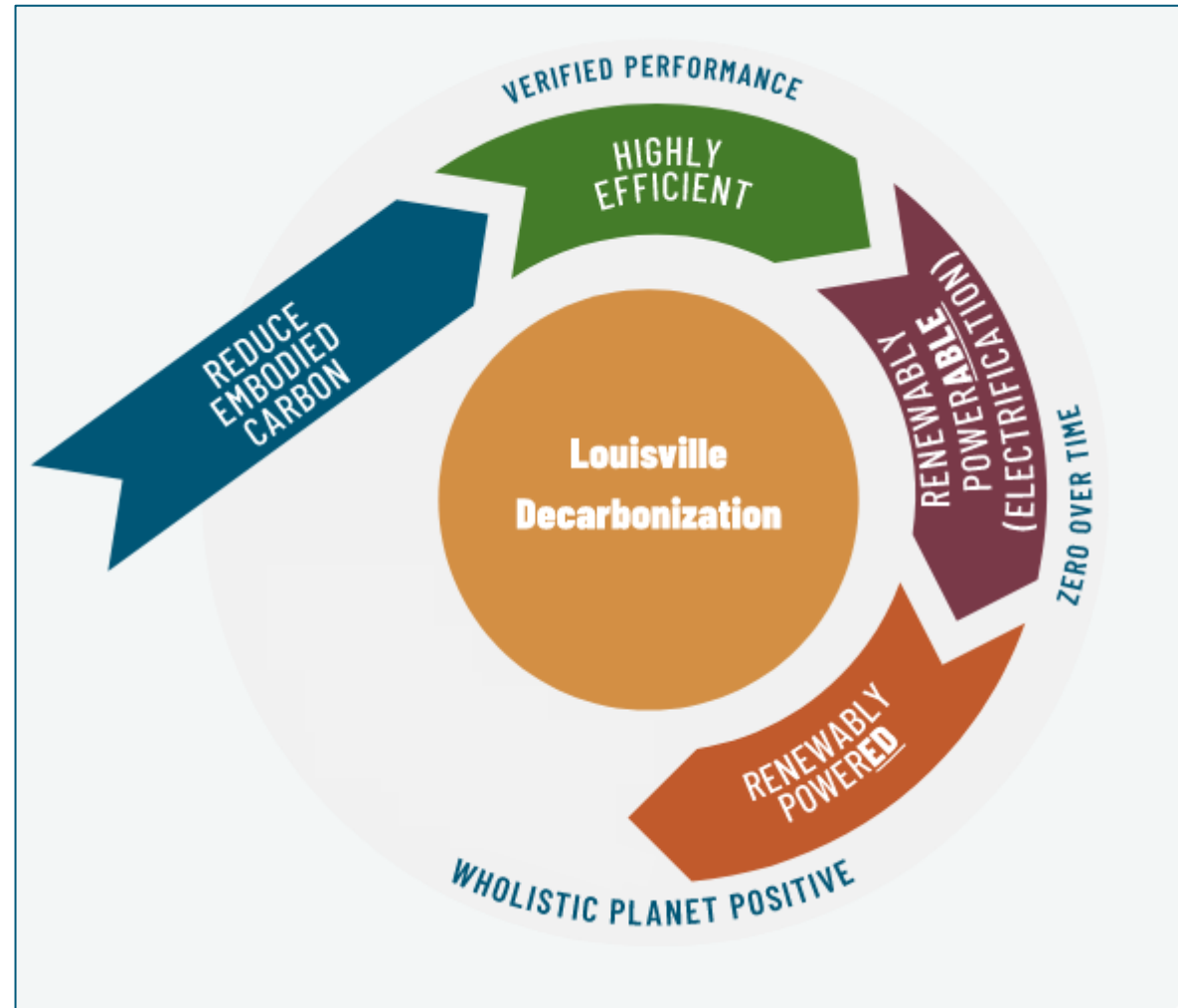
We are here



# Louisville Decarbonization

Decarbonizing Louisville's buildings, fleet and equipment includes a focus on four main areas:

- **Embodied Carbon** – Retrofitting existing buildings
- **Efficiency & Load Reduction** – Reducing energy use
- **Renewably Powerable** – Reducing fossil fuels on-site
- **Renewably Powered** – Increasing zero-carbon energy sources

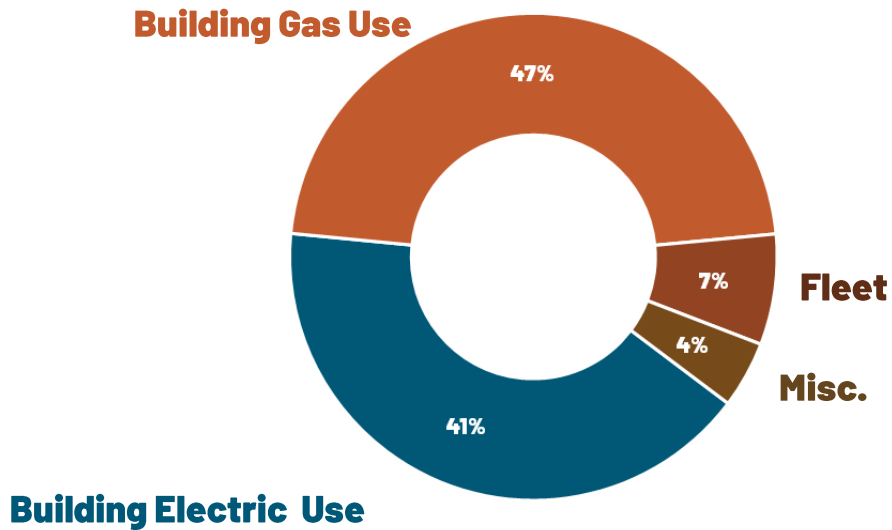


# Key Findings

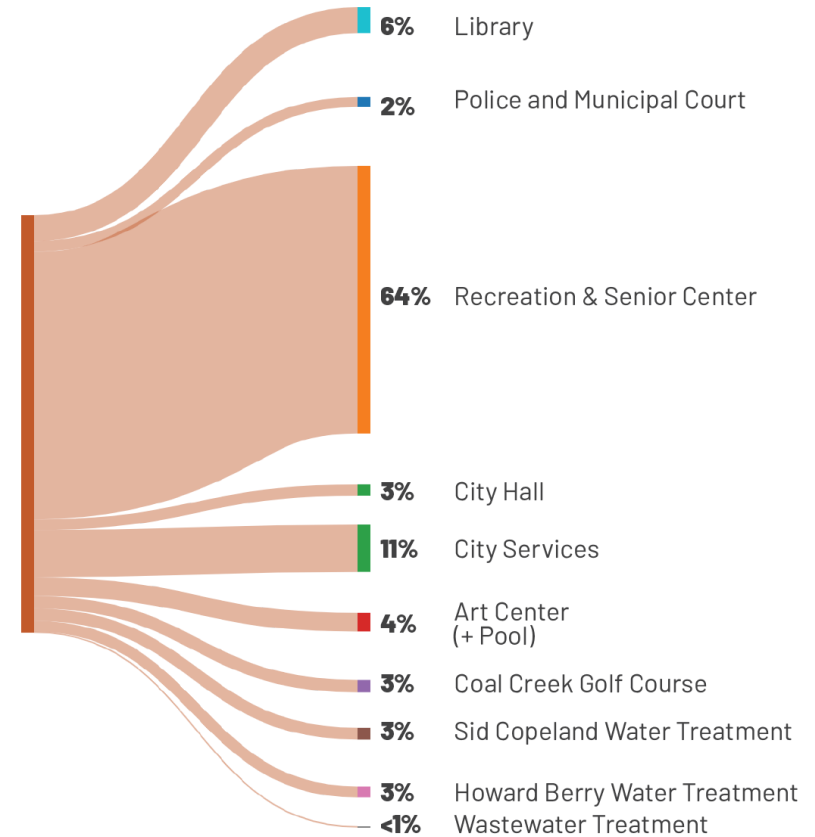
- Identified a pathway for decarbonization by 2040
- Hybrid electrification enables a cost-effective approach to decarbonization
- Total net cost of decarbonization is \$4.3m-14.3m
- Self-owned solar and efficiency are cheaper than Xcel-purchased energy
- Recommended phase one reduces carbon by 35% and generates 40% of renewable energy on-site
- The City is a leader in the climate space

# Current Overall Emissions

## Portfolio Energy By End Use



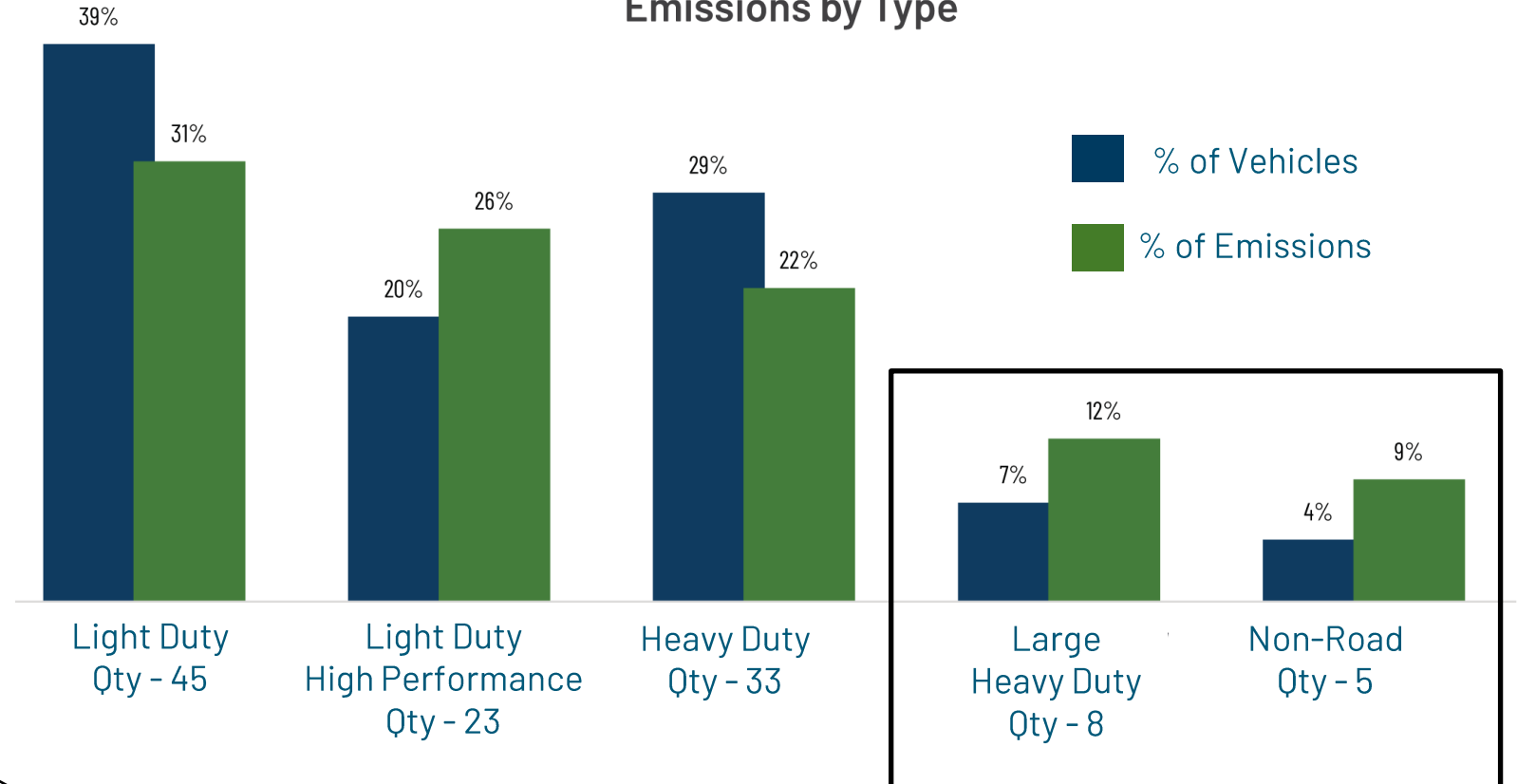
## Building Emissions By Building



# Current Fleet Emissions

1. Light duty:
  - Sedans, SUVs, light pickup trucks, and minivans
  - Used for transporting people and small cargo
2. Light duty high performance:
  - Mainly police vehicles
  - Similar to light duty but with police-specific modifications.
3. Heavy duty
  - Large pickup trucks
  - Used for hauling and towing heaving loads.
4. Large heavy-duty
  - Large snowplows and street sweepers
  - Only used seasonally and have a varying workload that is dependent on the weather
5. Non-road
  - Construction-type vehicles
  - Usage measured in hours of operation instead of miles.

Existing Fleet Emissions by Type



Not ready for electrification

# Evaluation Criteria for Recommendations

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- **Goals** – does the solution drive towards the decarbonization goals and meet the needs of the City?



- **Technology** – does the technology exist and/or meet the needs of the City?

- **Cost** – is the solution financially and provide the lowest cost for the highest value to the City to achieve goals? Hybrid vs full electrification?

- **Lifecycle Carbon Emissions** – if the measure includes hybrid electrification, how does that impact the lifecycle carbon emissions?



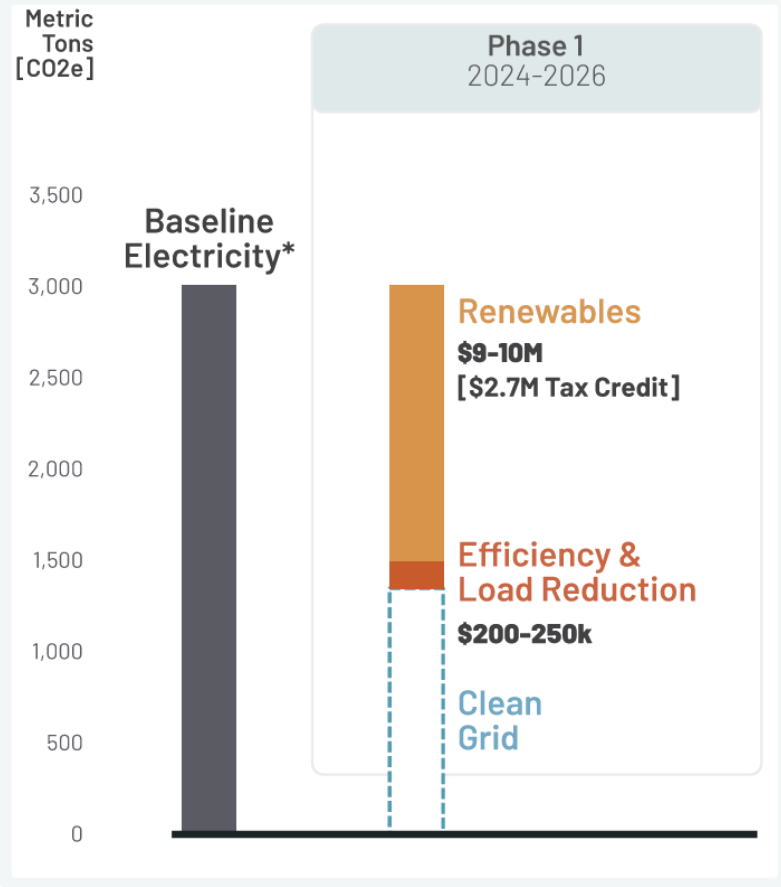
- **Operations & Maintenance** – does the measure add significant O&M burden to staff?

- **Co-benefits** – does the measure address additional benefits to the City such as improved comfort or better air quality?

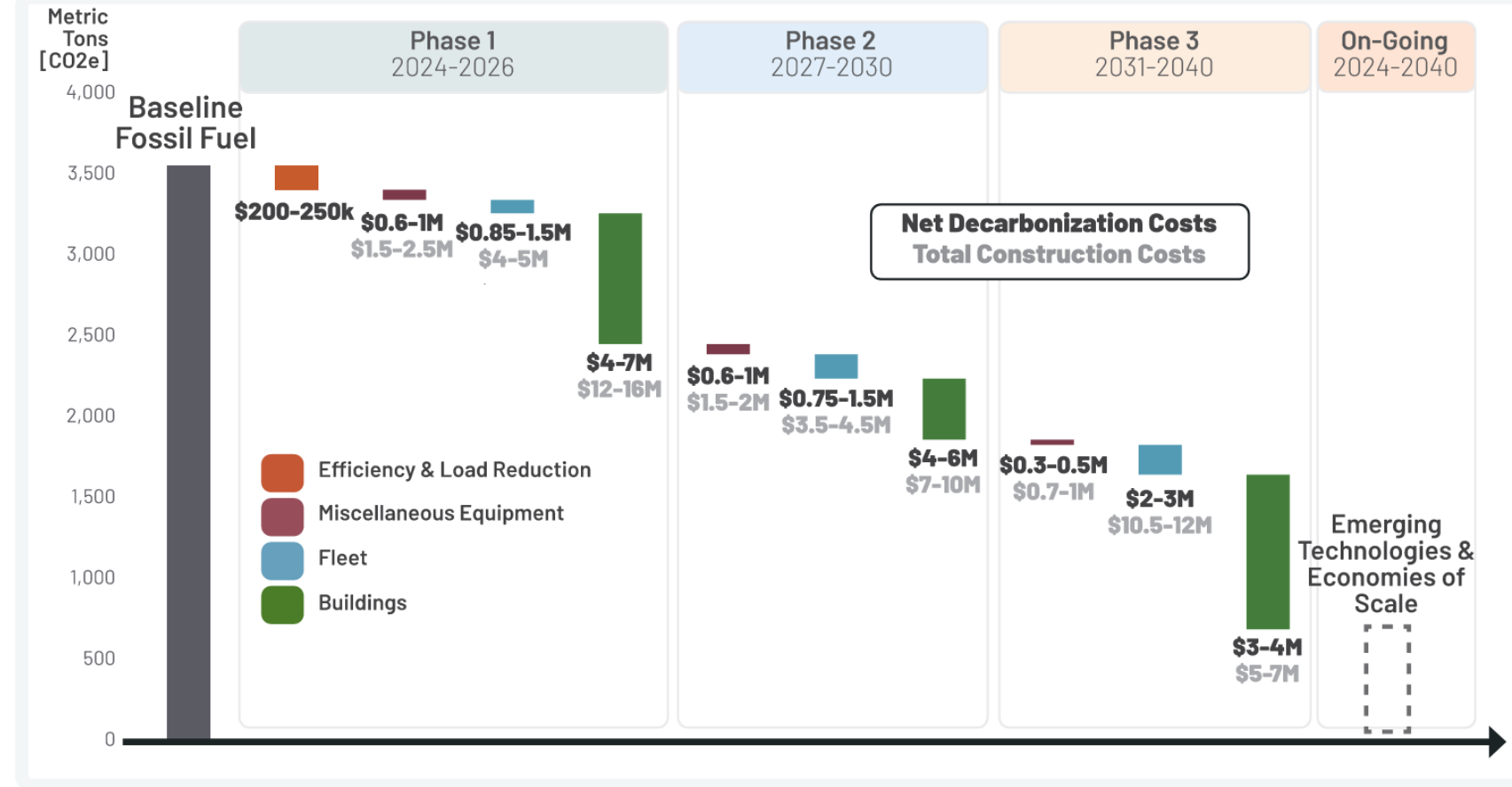


# Decarbonization Roadmap

## Electricity Emissions



## Fossil Fuel Emissions



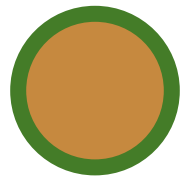
### Notes:

- Like-for-Like Costs: the "business as usual" costs for replacing existing fossil fuel equipment with similar fossil fuel equipment.
- Total Budget Costs: total costs needed for budgetary purposes. **The true cost of decarbonization is the total cost minus the like-for-like cost.**
- Costs do not include incentives or grants. The Inflation Reduction Act will potentially offset 25-30% of the cost of renewables and fleet. **113**
- Building costs include costs associated with EV charging (chargers and electrical infrastructure upgrades)

# Cost of Zero Carbon Electricity

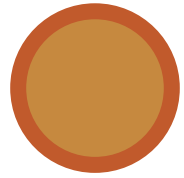
Type	Cost
Efficiency and Load Reduction	\$0.04/kWh
On-Site Solar Owned by City	\$0.065/kWh (assumes 25.5% IRA incentive)
Standard Xcel Rate	\$0.07/kWh
Xcel WindSource	\$0.08/kWh

# Recommended Renewable Energy Systems



## Highest Priority

- Wastewater
- Rec Center
- City Services



## Lower Priority

- Water Treatment Plants
- Police & Municipal Court
- Library
- Golf Clubhouse

Existing = 300 kW

Added = 2.5 MW

**Total = 2.8 MW**

Future % Offset = 25-30%

Total all systems = \$9-10M



# Recommended EV Charging Portfolio

Qty EV  
Chargers  
Recommended

\*2 connections per  
charger



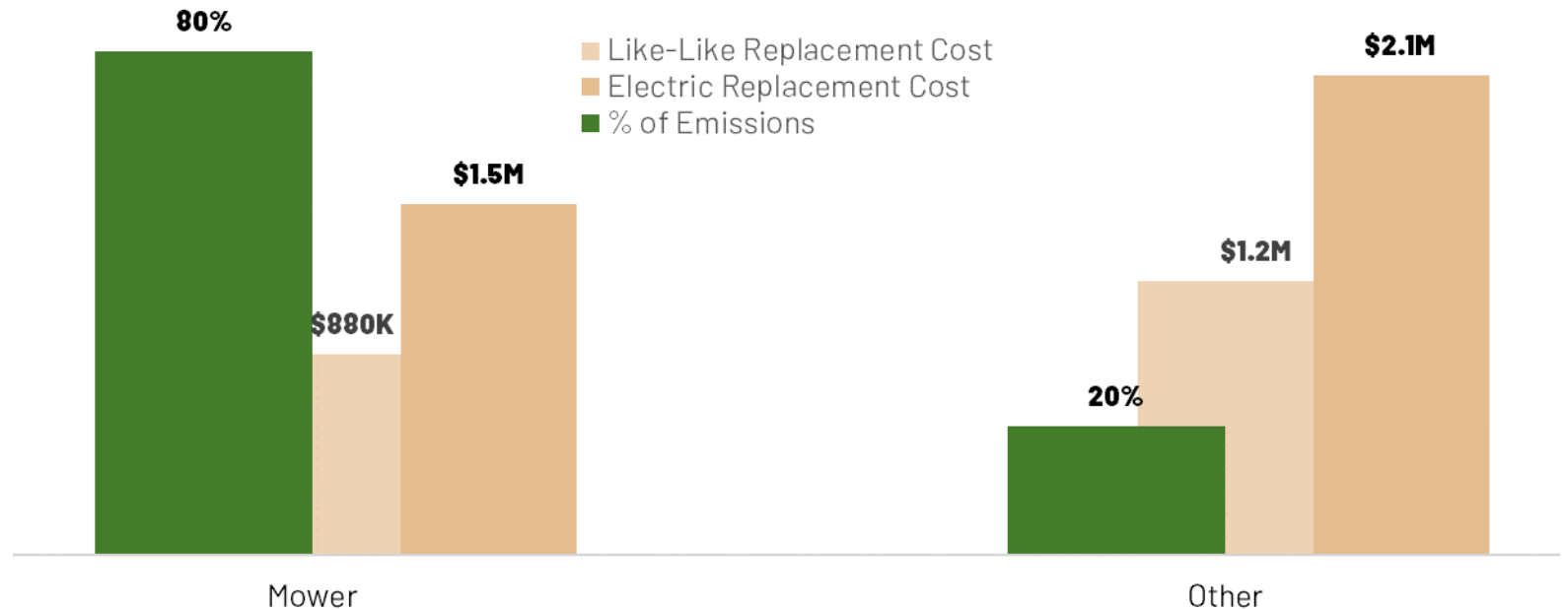
**116**

# Misc. Equipment – Emissions & Electrification

## Gas Powered Equipment Includes:

Equipment	Qty	Equipment	Qty
Aerator	1	Mower*	35
ATV	18	Roller	1
Blower	3	Saw	1
Cart	3	Skid	5
Chainsaw	2	Sprayer	1
Chipper	2	Tractor	4
Forklift	1	Trimmer	4
Generator	11	Washer	1
Loader	1		

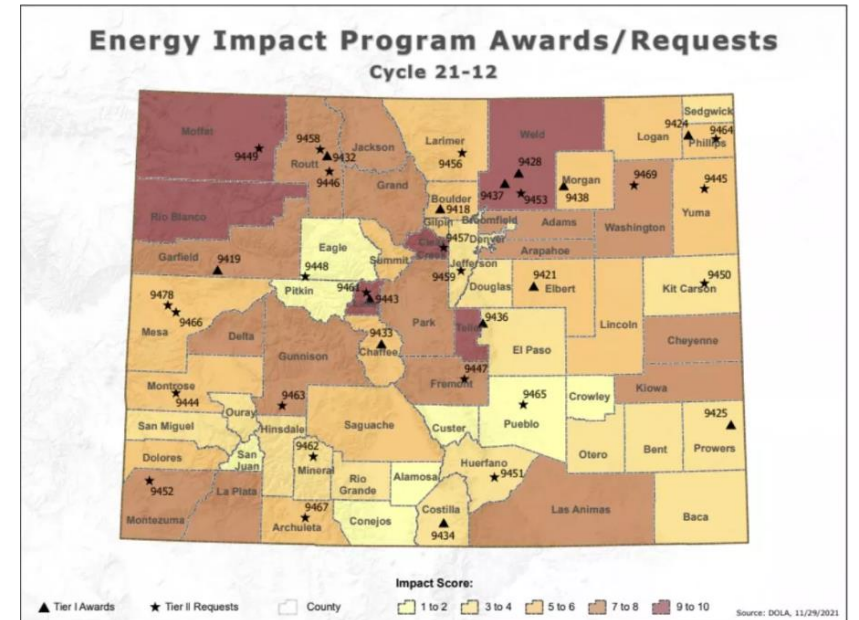
\* Includes 7 mowers that are gas/electric hybrid



# Grant Opportunities

- Colorado Public Building Electrification Grant\*
- Colorado Department of Local Affairs
  - RENEW & EIAF grants
  - Resiliency Challenge\*
- State of Colorado Geothermal Grant
- Congressionally Directed Spending\*
- FEMA Building Resilient Infrastructure and Communities (BRIC) grant
- Charge Ahead Grant\*
- Mow Down Pollution Grant\*
- Fleet Zero Grant\*
- Inflation Reduction Act
  - Investment Tax Credit – 30% Direct Pay for solar
- Xcel rebates

\*City is applying for in 2023-24 cycles



# Additional Avoided Costs + Cobenefits

**Avoided Future Carbon Emissions Penalties**

**Avoided Costs - Future Natural Gas Price Shock**

**Facility-ready for Future Microgrids**

**Improved Employee and Visitor Health/Performance**

**Employee Retention - Climate Leadership/Better Facilities**

**Total Value of Cobenefits: \$10,708,000**

## **Additional unquantified cobenefits:**

- Community decarbonization education and inspiration**
- Louisville "brand" and leader in climate**
- Local job creation and economic development**



# Net Costs of Decarbonization

**Net Costs of Decarbonization = Total cost to decarbonize – (like-for-like costs) – (project savings + grants)**




<b>Gross Decarbonization costs*</b>	~\$51M
<b>Like-for-like replacement costs that the City would continue to pay**</b>	(~\$27M)
<b>Total Savings (Utility, Fleet, Solar)</b>	(\$7M)
<b>Total Grants/Stimulus</b>	(\$3M-13M)
<b>Net Cost of Decarbonization (varies based on final grant awards)</b>	<b>\$4M-14M</b>

**\*All costs are turn-key including design, engineering, construction, commissioning.**

**\*\*Like-for-like is what the City would encumber in cost for business-as-usual gas replacements**



# Implementation Strategies

 <b>Energy Performance Contracting</b>	 <b>Design-Build or Design-Bid-Build</b>	 <b>Self-Implementation</b>
Use for Phase 1 renewables, load reduction & mechanical; Phases 2-3 complex mechanical retrofits; some EV charging	Use for smaller and less complex mechanical upgrades	Use for EV charging, fleet purchases, misc. equipment



**Thank you!**

## Memorandum

**To: Louisville City Council Members**  
**From: Louisville Sustainability Advisory Board**  
**Date: August 15, 2023**  
**Re: Internal Decarbonization Plan**

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Dear Louisville City Councilmembers

The Louisville Sustainability Advisory Board writes you today regarding McKinstry Engineering's plans for decarbonizing the City's buildings and operations. First of all, the Board wishes to commend City Council for recognizing the necessity of and prioritizing the planning for this municipal decarbonization. The Board also appreciates being involved in the planning process. Moreover, the Board applauds City Council's goal of complete municipal decarbonization by 2030. The Board considers municipal decarbonization to be the City's singlemost important sustainability initiative and one of the City's most important initiatives: decarbonization is absolutely crucial to mitigating climate change. The Board also wishes to emphasize the urgency of municipal decarbonization: considerable decarbonization within the next decade is absolutely essential to keeping global warming within livable bounds.

At the Board's June meeting McKinstry presented its latest plans for municipal decarbonization. The Board was impressed with McKinstry's work, and the Board endorses McKinstry's plans, both McKinstry's recommendations for how to achieve municipal decarbonization and McKinstry's timeline for implementation of these recommendations. The Board recognizes that this timeline does not achieve complete municipal decarbonization by 2030, but the Board understands the reasons for and supports extending the timeline. The Board suggests that the City investigate the capacity for City-owned lands to sequester carbon, potentially offsetting the extra carbon emitted over this extended timeline. More specifically, the Board supports McKinstry's plans for increasing the City's own solar



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energy generation rather than relying on Xcel Energy’s efforts to transition to carbon-free energy sources.

The Board thus recommends that City Council adopt McKinstry’s plans for municipal decarbonization and swiftly pivot to these plans’ implementation. The Board further recommends that City Council establish means to hold the City accountable for achieving its decarbonization goals, for instance, by appropriately forecasting staffing and budgetary needs. The Board recognizes that the City will most likely require supplemental funding to meet these goals; accordingly, the Board strongly encourages the City to explore all possible avenues of funding, ensuring that City staff has the capacity to pursue this funding.

Finally, the Board recommends that the City revisit and revise its municipal decarbonization plans in the next few years. The City may be able to advance more rapidly towards its decarbonization goals by taking advantage of new technologies and methodologies. In particular, if City Council decides not to achieve complete municipal decarbonization by 2030, then the Board recommends that the City make definite plans for achieving complete decarbonization at an appropriate time after 2030.

The City’s decarbonization efforts will set an example for not only the Louisville community, which is about to begin its own decarbonization planning, but also neighboring municipalities and communities. Given the necessity and urgency of decarbonization, the Board hopes that Louisville will become a shining example through its actions.

Thank you for considering our recommendations.

Sincerely,

The Louisville Sustainability Advisory Board

# Memorandum

**To:** City of Louisville, City Council  
**From:** Recreation and Golf Advisory Board  
**Date:** July 25, 2023  
**Re:** Proposed De-carbonization Plan Response

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Recently, the Recreation Advisory Board received a presentation by a consultant that was engaged to explore retrofitting our buildings with heat pumps and other energy savings measures to achieve decarbonization by 2030. In their presentation the consultants suggested replacing mechanical systems in various buildings that had reached obsolescence, and others that have not yet achieved their performance lifetime. The consultant's report addressed the current recreation center, the library and the golf course club house amongst other buildings.

In a previous presentation by the Recreation Center staff, the RAB committee learned that most of the systems for the swimming pools were operating efficiently and effectively. It was mentioned that these mechanical systems were not expected to or needed to be replaced soon. However, the 2030 Decarbonization consultant recommended replacing these systems in the near future.

We realize that there are many measures to achieve net-zero status passively and actively. We also recognize that there is a major difference between achieving "actual net-zero" and an illusion that would require much of our electricity to be provided from Excel Energy, which will generate a large percentage of its electricity from fossil fuels long into the future.

The consultant did not emphasize any passive measures to help reduce the need for heating or cooling in our existing buildings. The use of berms, the placement and size of windows, automatic window dimming, the use of appropriate deciduous and evergreen trees, and other passive measures should be investigated as part of any future plans for the energy management of our buildings.

Instead of replacing mechanical equipment in our newer, fully functioning buildings, the RAB suggests an alternative that would identify the City's least energy efficient buildings

and propose measures that would decarbonize these buildings and transform them from the least efficient energy users into the most efficient energy users.

By example, in a recent feasibility study of the current Coal Creek Golf Course Clubhouse, the consulting architects identified it as the least energy efficient building in the entire city, and one of the biggest users of energy. The building and its mechanical systems are obsolete. The study determined that renovations to the clubhouse would be futile in terms of its mechanical systems, building envelope and material finishes. In contrast, the Decarbonization 2030 consultant's plan suggested retrofitting the clubhouse's mechanical systems. With reference to this example, the RAB recommend, in the strongest terms, that the City invest appropriately in new construction and net-zero systems and materials for buildings that are highly inefficient as opposed to investing to retrofit buildings that are not yet mechanically obsolete.

The RAB unanimously believes that making an investment to retrofit and refurbish the existing clubhouse is a waste of taxpayer money. It is already functionally obsolete and is not competitive with other clubhouses in the region. As the Decarbonization 2030 consultants correctly point out, it is a poorly insulated energy sieve with a dismal and inefficient kitchen.

A newly built replacement clubhouse could incorporate an all-electric heat pump system with a super-insulated building envelope and sustainable non-carbon-based materials. In addition, if solar panels were incorporated with other passive energy treatments, the possibility of achieving a net-zero building could be a realization.

A new clubhouse, built to net-zero standards, would stand as a showcase for the entire region. It would attract scores of golfers and eco-tourists to Louisville. The proposed large meeting room in the new clubhouse is another feature that could be a magnet for events and an economic boon to the city while further demonstrating the City's commitment to net-zero decarbonization. The architectural consultants also advocated for the electrification of all golf course vehicles, including carts, ball-pickers and mowers---a recommendation that the RAB endorses and is currently being employed.

The RAB agrees with the Decarbonization 2030 consultant's recommendation that the City research and seek grants that would invest in the upgrading of the Recreation and Senior Center, as well as other city facilities, but the RAB cautions against what we see as conflicting recommendations that would still require energy from fossil fuel sources. For example, as noted earlier, the Decarbonization 2030 consultant suggested changing the gas-heating mechanical systems currently used for the pools to electric heating, but

a report from the pool staff suggested that the electrical heating systems would be inefficient.

Apparently, grant opportunities are plentiful currently, and to the extent that upgrading systems can be funded in this manner, the RAB recommends committing to those upgrades as soon as is feasible. The RAB recommend that the City Council consider a full-time grant writing position, as the position could pay for itself by seeking out and obtaining grants while reducing the immense costs of consultants to do similar work.

Respectfully submitted,

Recreation and Golf Advisory Board

Lisa Norgard, Chair

Michele VanPelt, Vice Chair

Mary O'Brien, Secretary

Angie Layton

Richard Friedson

Eugene Kutscher

**AN AGREEMENT BY AND BETWEEN THE CITY OF LOUISVILLE  
AND MCKINSTRY ESSENTION, LLC  
FOR CONSULTING SERVICES**

**1.0 PARTIES**

This AGREEMENT FOR CONSULTING SERVICES (this “Agreement”) is made and entered into this 1 day of November 2022 (the “Effective Date”), by and between the **City of Louisville**, a Colorado home rule municipal corporation, hereinafter referred to as the “City”, and McKinstry Essention, LLC, a Washington limited liability company, hereinafter referred to as the “Consultant”.

**2.0 RECITALS AND PURPOSE**

- 2.1 The City desires to engage the Consultant for the purpose of providing energy engineering and consulting services as further set forth in the Consultant’s Scope of Services (which services are hereinafter referred to as the “Services”).
- 2.2 The Consultant represents that it has the special expertise, qualifications and background necessary to complete the Services.

**3.0 SCOPE OF SERVICES**

The Consultant agrees to provide the City with the specific Services and to perform the specific tasks, duties and responsibilities set forth in Scope of Services attached hereto as Exhibit “A” and incorporated herein by reference.

**4.0 COMPENSATION**

- 4.1 The City shall pay the Consultant for services under this agreement a total not to exceed the amounts set forth in Exhibit “B” attached hereto and incorporated herein by this reference. The City shall not pay mileage and other reimbursable expenses (such as meals, parking, travel expenses, necessary memberships, etc.), unless such expenses are (1) clearly set forth in Exhibit B and (2) necessary for performance of the Services (“Pre-Approved Expenses”). The foregoing amounts of compensation shall be inclusive of all costs of whatsoever nature associated with the Consultant’s efforts, including but not limited to salaries, benefits, overhead, administration, profits, expenses, and outside consultant fees. The Scope of Services and payment therefor shall only be changed by a properly authorized amendment to this Agreement. No City employee has the authority to bind the City with regard to any payment for any services which exceeds the amount payable under the terms of this Agreement.
- 4.2 The Consultant shall submit monthly an invoice to the City for Services rendered and a detailed expense report for Pre-Approved Expenses incurred during the previous month. The invoice shall document the Services provided during the preceding month, identifying by work category and subcategory the work and tasks performed and such other



information as may be required by the City. The Consultant shall provide such additional backup documentation as may be required by the City. The City shall pay the invoice within thirty (30) days of receipt unless the Services or the documentation therefor are unsatisfactory. Payments made after thirty (30) days may be assessed an interest charge of one percent (1%) per month unless the delay in payment resulted from unsatisfactory work or documentation therefor.

## **5.0 PROJECT REPRESENTATION**

- 5.1 The City designates Kayla Betzold as the responsible City staff to provide direction to the Consultant during the conduct of the Services. The Consultant shall comply with the directions given by Kayla Betzold and such person's designees.
- 5.2 The Consultant designates Ashley Brasovan as its project manager and as the principal in charge who shall be providing the Services under this Agreement. Should any of the representatives be replaced, particularly Ashley Brasovan, and such replacement require the City or the Consultant to undertake additional reevaluations, coordination, orientations, etc., the Consultant shall be fully responsible for all such additional costs and services.

## **6.0 TERM**

- 6.1 The term of this Agreement shall be from the Effective Date to June 30, 2023, unless sooner terminated pursuant to Section 13, below. The Consultant's Services under this Agreement shall commence on November 2, 2022 and Consultant shall proceed with diligence and promptness so that the Services are completed in a timely fashion consistent with the City's requirements.
- 6.2 Nothing in this Agreement is intended or shall be deemed or construed as creating any multiple-fiscal year direct or indirect debt or financial obligation on the part of the City within the meaning of Colorado Constitution Article X, Section 20 or any other constitutional or statutory provision. All financial obligations of the City under this Agreement are subject to annual budgeting and appropriation by the Louisville City Council, in its sole discretion. Notwithstanding anything in this Agreement to the contrary, in the event of non-appropriation, this Agreement shall terminate effective December 31 of the then-current fiscal year.
- 6.3 Notwithstanding any other provision(s) of this Agreement, neither party shall be liable, or declared in breach of this Agreement, for any failure or delay in performing an obligation under this Agreement that is due to events beyond such party's reasonable control, including acts of God, armed conflict, war, or pandemic events; including, but not limited to (1) increased illness of such party's workforce and/or unavailability of labor; (2) government quarantines, closures, or other mandates, restrictions, and/or directives; and/or (3) fulfillment of legal health and safety obligations associated with COVID-19 ("Force Majeure"). Force Majeure shall not include (a) financial distress nor the inability of either party to make a profit or avoid a financial loss, (b) changes in market prices or conditions, or (c) a party's financial inability to perform its obligations hereunder.

## 7.0 INSURANCE

- 7.1 The Consultant agrees to procure and maintain, at its own cost, the policies of insurance set forth in Subsections 7.1.1 through 7.1.4. The Consultant shall not be relieved of any liability, claims, demands, or other obligations assumed pursuant to this Agreement by reason of its failure to procure or maintain insurance, or by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types. The coverages required below shall be procured and maintained with forms and insurers acceptable to the City. All coverages shall be continuously maintained from the date of commencement of services hereunder. The required coverages are:
- 7.1.1 Workers' Compensation insurance as required by the Labor Code of the State of Colorado and Employers Liability Insurance. Evidence of qualified self-insured status may be substituted.
- 7.1.2 General Liability insurance with minimum combined single limits of ONE MILLION DOLLARS (\$1,000,000) each occurrence and TWO MILLION DOLLARS (\$2,000,000) aggregate. The policy shall include the City of Louisville, its officers and its employees, as additional insureds, with primary coverage as respects the City of Louisville, its officers and its employees, and shall contain a severability of interests provision.
- 7.1.3 Comprehensive Automobile Liability insurance with minimum combined single limits for bodily injury and property damage of not less than FOUR HUNDRED THOUSAND DOLLARS (\$400,000) per person in any one occurrence and ONE MILLION DOLLARS (\$1,000,000) for two or more persons in any one occurrence, and auto property damage insurance of at least FIFTY THOUSAND DOLLARS (\$50,000) per occurrence, with respect to each of Consultant's owned, hired or non-owned vehicles assigned to or used in performance of the services. The policy shall contain a severability of interests provision. If the Consultant has no owned automobiles, the requirements of this paragraph shall be met by each employee of the Consultant providing services to the City of Louisville under this Agreement.
- 7.1.4 Professional Liability coverage with minimum combined single limits of ONE MILLION DOLLARS (\$1,000,000) each occurrence and ONE MILLION DOLLARS (\$1,000,000) aggregate.
- 7.2 The Consultant's general liability insurance, automobile liability and physical damage insurance, and professional liability insurance shall be endorsed to include the City, and its elected and appointed officers and employees, as additional insureds, unless the City in its sole discretion waives such requirement. Every policy required above shall be primary insurance, and any insurance carried by the City, its officers, or its employees, shall be excess and not contributory insurance to that provided by the Consultant. Such policies shall contain a severability of interests provision. The Consultant shall be solely responsible for any deductible losses under each of the policies required above.

- 7.3 Certificates of insurance shall be provided by the Consultant as evidence that policies providing the required coverages, conditions, and minimum limits are in full force and effect, and shall be subject to review and approval by the City. No required coverage shall be cancelled, terminated or materially changed until at least 30 days' prior written notice has been given to the City. The City reserves the right to request and receive a certified copy of any policy and any endorsement thereto.
- 7.4 Failure on the part of the Consultant to procure or maintain policies providing the required coverages, conditions, and minimum limits shall constitute a material breach of contract upon which the City may immediately terminate this Agreement, or at its discretion may procure or renew any such policy or any extended reporting period thereto and may pay any and all premiums in connection therewith, and all monies so paid by the City shall be repaid by Consultant to the City upon demand, or the City may offset the cost of the premiums against any monies due to Consultant from the City.
- 7.5 The parties understand and agree that the City is relying on, and does not waive or intend to waive by any provision of this Agreement, the monetary limitations or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, § 24-10-101 et seq., C.R.S., as from time to time amended, or otherwise available to the City, its officers, or its employees.
- 7.6 Neither party shall be liable for any consequential, indirect, special, incidental, or exemplary, or punitive damages, including loss of profits, whether based in contract or tort or any other theory, even if a party has been advised of the possibility of such damages.

## **8.0 INDEMNIFICATION**

To the fullest extent permitted by law, the Consultant agrees to indemnify and hold harmless the City, and its elected and appointed officers and its employees, from and against all liability, claims, and demands, on account of any injury, loss, or damage, which arise out of or are connected with the services hereunder, if and to the extent such injury, loss, or damage is caused by the negligent act, omission, or other fault of the Consultant or any subcontractor of the Consultant, or any officer, employee, or agent of the Consultant or any subcontractor, or any other person for whom Consultant is responsible. The Consultant shall investigate, handle, respond to, and provide defense for and defend against any such liability, claims, and demands. The Consultant shall further bear all other costs and expenses incurred by the City or Consultant and related to any such liability, claims and demands, including but not limited to court costs, expert witness fees and attorneys' fees if the court determines that these incurred costs and expenses are related to such negligent acts, errors, and omissions or other fault of the Consultant. Notwithstanding the foregoing, Consultant's duty to defend, indemnify and hold harmless the City, and its elected and appointed officials and employees as set forth in this section shall only arise upon determination, by adjudication, alternative dispute resolution, or mutual agreement between Consultant and the City, of the Consultant's liability or fault. The City shall be entitled to its costs and attorneys' fees incurred in any action to enforce the provisions of this Section 8.0. The Consultant's

indemnification obligation shall not be construed to extend to any injury, loss, or damage which is caused by the act, omission, or other fault of the City.

## **9.0 QUALITY OF WORK**

Consultant's professional services shall be in accordance with the prevailing standard of practice normally exercised in the performance of services of a similar nature in the Denver metropolitan area.

## **10.0 INDEPENDENT CONTRACTOR**

It is the expressed intent of the parties that the Consultant is an independent contractor and not the agent, employee or servant of the City, and that:

- 10.1. Consultant shall satisfy all tax and other governmentally imposed responsibilities including but not limited to, payment of state, federal, and social security taxes, unemployment taxes, worker's compensation and self-employment taxes. No state, federal or local taxes of any kind shall be withheld or paid by the City.
- 10.2. **Consultant is not entitled to worker's compensation benefits except as may be provided by the Consultant nor to unemployment insurance benefits unless unemployment compensation coverage is provided by the Consultant or some entity other than the City.**
- 10.3. Consultant does not have the authority to act for the City, or to bind the City in any respect whatsoever, or to incur any debts or liabilities in the name of or on behalf of the City.
- 10.4. Consultant has and retains control of and supervision over the performance of Consultant's obligations hereunder and control over any persons employed by Consultant for performing the Services hereunder.
- 10.5. The City will not provide training or instruction to Consultant or any of its employees regarding the performance of the Services hereunder.
- 10.6. Neither the Consultant nor any of its officers or employees will receive benefits of any type from the City.
- 10.7. Consultant represents that it is engaged in providing similar services to other clients and/or the general public and is not required to work exclusively for the City.
- 10.8. All Services are to be performed solely at the risk of Consultant and Consultant shall take all precautions necessary for the proper and sole performance thereof.
- 10.9. Consultant will not combine its business operations in any way with the City's business operations and each party shall maintain their operations as separate and distinct.

## **11.0 ASSIGNMENT**

Except as provided in section 22.0 hereof, Consultant shall not assign or delegate this Agreement or any portion thereof, or any monies due or to become due hereunder without the City's prior written consent.

## **12.0 DEFAULT**

Each and every term and condition hereof shall be deemed to be a material element of this Agreement. In the event either party should fail or refuse to perform according to the terms of this Agreement, such party may be declared in default.

## **13.0 TERMINATION**

13.1 This Agreement may be terminated by either party for material breach or default of this Agreement by the other party not caused by any action or omission of the other party by giving the other party written notice at least thirty (30) days in advance of the termination date. Termination pursuant to this subsection shall not prevent either party from exercising any other legal remedies which may be available to it.

13.2 In addition to the foregoing, this Agreement may be terminated by the City for its convenience and without cause of any nature by giving written notice at least fifteen (15) days in advance of the termination date. In the event of such termination, the Consultant will be paid for the reasonable value of the services rendered to the date of termination, not to exceed a pro-rated daily rate, for the services rendered to the date of termination, and upon such payment, all obligations of the City to the Consultant under this Agreement will cease. Termination pursuant to this subsection shall not prevent either party from exercising any other legal remedies which may be available to it.

## **14.0 INSPECTION AND AUDIT**

The City and its duly authorized representatives shall have access to any books, documents, papers, and records of the Consultant that are related to this Agreement for the purpose of making audits, examinations, excerpts, and transcriptions.

## **15.0 DOCUMENTS**

All computer input and output, analyses, plans, documents photographic images, tests, maps, surveys, electronic files and written material of any kind generated in the performance of this Agreement or developed for the City in performance of the Services are and shall remain the sole and exclusive property of the City. All such materials shall be promptly provided to the City upon request therefor and at the time of termination of this Agreement, without further charge or expense to the City. Consultant shall not provide copies of any such material to any other party without the prior written consent of the City.

## **16.0 ENFORCEMENT**

- 16.1 In the event that suit is brought upon this Agreement to enforce its terms, the prevailing party shall be entitled to its reasonable attorneys' fees and related court costs.
- 16.2 This Agreement shall be deemed entered into in Boulder County, Colorado, and shall be governed by and interpreted under the laws of the State of Colorado. Any action arising out of, in connection with, or relating to this Agreement shall be filed in the District Court of Boulder County of the State of Colorado, and in no other court. Consultant hereby waives its right to challenge the personal jurisdiction of the District Court of Boulder County of the State of Colorado over it.

## **17.0 COMPLIANCE WITH LAWS**

- 17.1 Consultant shall be solely responsible for compliance with all applicable federal, state, and local laws, including the ordinances, resolutions, rules, and regulations of the City; for payment of all applicable taxes; and obtaining and keeping in force all applicable permits and approvals.
- 17.2 Consultant acknowledges that the City of Louisville Code of Ethics provides that independent contractors who perform official actions on behalf of the City which involve the use of discretionary authority shall not receive any gifts seeking to influence their official actions on behalf of the City, and that City officers and employees similarly shall not receive such gifts. Consultant agrees to abide by the gift restrictions of the City's Code of Ethics.

## **18.0 INTEGRATION AND AMENDMENT**

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.

## **19.0 NOTICES**

All notices required or permitted under this Agreement shall be in writing and shall be given by hand delivery, by United States first class mail, postage prepaid, registered or certified, return receipt requested, by national overnight carrier, or by facsimile transmission, addressed to the party for whom it is intended at the following address:

If to the City:

City of Louisville  
Attn: City Manager  
749 Main Street  
Louisville, Colorado 80027  
Telephone: (303) 335-4533

Fax: (303) 335-4550

If to the Consultant:

McKinstry Essention, LCC  
Attn: Ashley Brasovan  
16025 Table Mountain Parkway, Suite 100  
Golden, Colorado 80403  
Telephone: 303-968-4138

Any such notice or other communication shall be effective when received as indicated on the delivery receipt, if by hand delivery or overnight carrier; on the United States mail return receipt, if by United States mail; or on facsimile transmission receipt. Either party may by similar notice given, change the address to which future notices or other communications shall be sent.

## **20.0 EQUAL OPPORTUNITY EMPLOYER**

- 20.1 Consultant will not discriminate against any employee or applicant for employment because of race, color, religion, age, sex, disability or national origin. Consultant will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, age, sex, disability, or national origin. Such action shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Consultant agrees to post in conspicuous places, available to employees and applicants for employment, notice to be provided by an agency of the federal government, setting forth the provisions of the Equal Opportunity Laws.
- 20.2 Consultant shall be in compliance with the applicable provisions of the American with Disabilities Act of 1990 as enacted and from time to time amended and any other applicable federal, state, or local laws and regulations. A signed, written certificate stating compliance with the Americans with Disabilities Act may be requested at any time during the life of this Agreement or any renewal thereof.

## **21.0 NO THIRD PARTY BENEFICIARIES**

It is expressly understood and agreed that enforcement of the terms and conditions of this Agreement, and all rights of action relating to such enforcement, shall be strictly reserved to City and Consultant, and nothing contained in this Agreement shall give or allow any such claim or right of action by any other third party on such Agreement. It is the express intention of the parties that any person other than City or Consultant receiving services or benefits under this Agreement shall be deemed to be an incidental beneficiary only.

## **22.0 SUBCONTRACTORS**

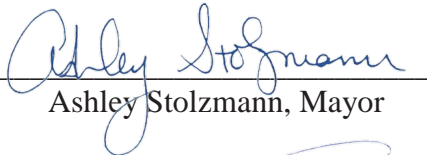
Consultant may utilize subcontractors identified in its qualifications submittal to assist with non-specialized works as necessary to complete projects. Consultant will submit any proposed subcontractor and the description of its services to the City for approval. The City will not work directly with subcontractors.


**23.0 AUTHORITY TO BIND**

Each of the persons signing below on behalf of any party hereby represents and warrants that such person is signing with full and complete authority to bind the party on whose behalf of whom such person is signing, to each and every term of this Agreement.

In witness whereof, the parties have executed this Agreement to be effective on the date first above written.

CITY OF LOUISVILLE,  
a Colorado Municipal Corporation

By:   
Ashley Stolzmann, Mayor

Attest:   
Meredyth Muth, City Clerk

CONSULTANT:

McKinstry Essention, LLC.

By:   
Bryan Hanson  
Digitally signed by Bryan Hanson  
DN: C=US, E=bryanh@mcKinstry,  
O=RKY Region, OU="McKinstry  
Essention, LLC.", CN=Bryan Hanson  
Date: 2022.10.20 15:31:23-06'00'

Title: Vice President



**Exhibit A – Scope of Services**



## **Request for Proposals**

### **2022 Internal Decarbonization Plan**

**City of Louisville, City Manager's Office  
749 MAIN STREET, LOUISVILLE, CO 80027  
PH: (303) 335-4528  
[www.louisvilleco.gov](http://www.louisvilleco.gov)**

**Project Number: 101446-540910**

**PROPOSALS DUE: FRIDAY, AUGUST 26  
11:59 A.M.**

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## PROPOSED PROJECT SCHEDULE

Proposals Due .....	Aug 26, 2022
Selection Committee – Interviews .....	Sept. 2022
Final Selection and Contract.....	Sept. 2022
Kick-off to begin.....	Oct. 2022
Baseline Review Process.....	Oct. 2022
Audits 1 - 3 (location TBD).....	Nov. 2022
Audits 4 – 6 (location TBD) .....	Dec. 2022
Audits 7 - 10 (location TBD).....	Jan. 2023
Audits 1 - 3 Deliverable.....	Feb. 2023
Audit 4 – 6 Deliverable.....	Mar. 2023
Audit 7 – 9 Deliverable.....	Apr. 2023
Audit 10 Deliverable & Final Report.....	May. 2023

## CITY INFORMATION

Situated between Denver and Boulder, the City of Louisville, Colorado receives national attention for being one of the best places to live in the United States. The City has a population of approx. 21,000 residents and provides a wide range of services and amenities. As a home rule municipality with more than 400 employees to serve its residents, the City delivers core services and operates several public facilities that fall within the scope of work for this project.

In August of 2019, the Louisville City Council passed Resolution 25, Series 2019, which set clean energy and carbon emission reduction goals for the municipality and larger community. This resolution sets goals to meet all of Louisville’s municipal electric needs with 100% carbon-free sources by 2025 and to reduce core municipal greenhouse gas emissions annually below the 2016 baseline through 2025.

As a result, the City is seeking a complete engineering, mechanical and financial analysis for each of its municipal facilities (ten facilities in total, some of which consist of multiple buildings) and associated fleet and equipment. The final deliverable for this project will include a strategic roadmap for electrification and decarbonization of all City buildings, fleet, equipment and operations by 2030.

## INVITATION

The City of Louisville is inviting proposals from highly qualified firms (“Respondents”) exhibiting the following qualifications:

1. Seeking a team of creative and innovative engineers who have a track record of going above and beyond for clients performing tasks such as ASHRAE level 2 and level 3 audits with expertise in identifying strategic opportunities.
2. Seeking a team that has proven and significant realization rates from recommendation reports.
3. Seeking a team experienced in building energy sciences with Heating, Ventilation, and Air Conditioning (HVAC) design engineering expertise.
4. Seeking experience in building electrical system design, specifically regarding the electrification of existing natural gas systems.
5. Seeking heat pump operations expertise (ie, ability to evaluate and recommend specific designs, equipment, identify potential barriers, etc.)
6. Seeking electric vehicle charging, solar photovoltaic and energy storage engineering expertise.
7. Seeking knowledge of fleet vehicles/equipment and landscaping equipment for municipal operations (ie, mowers, leaf blowers, etc.) and electric alternatives
8. Must have knowledge of local, federal, and state funding opportunities and grants and utility programs and incentives.
9. Must have ability to research and analyze financial barriers and supply chain challenges when compiling recommendations report.
10. Requiring Professional Engineering License(s) for the State of Colorado.

The City may contract with multiple firms to obtain all desired services.

### Scope of Services

The scope of work will involve an initial review of existing facility mechanical, electrical and plumbing (MEP) drawings, available ASHRAE audit reports, benchmarking data and fleet studies followed by electrification audits of each of the municipal facilities listed below. Each audit may require several experts to be present and these may include electrical engineering experts, HVAC and building mechanical systems experts, building automation and controls experts, building code experts, electric vehicle charging, battery storage design and solar PV expertise as well as others having expertise in the relevant electrification requirements for each of the systems included, but not limited to the following:

## HVAC Equipment

1. Rooftop units
2. Heat recovery ventilators
3. Gas furnaces
4. Natural gas boiler systems
5. Commercial kitchen systems
6. Domestic hot water heating systems
7. Gas grills and fireplaces

## HVAC Infrastructure

1. Ductwork
2. Piping
3. Electrical service (costs to upgrade to meet new electrical demand)
4. Backup Generators

## Distributed Energy Resources

1. On-site solar photovoltaics (PV)
2. Electric energy storage battery systems
3. Demand response controls (hot water heating, batteries, thermal energy storage, lighting, etc.)
4. Vehicle to grid (V2G) planning
5. Innovative future planning (i.e. micro-grid, centralized/district heating and cooling systems (CHP), etc.)

## Fleet Equipment

1. Fleet vehicle use evaluation
2. Fleet electric vehicle (EV) charging
3. EV charging infrastructure/electric service design and cost evaluation

## Additional Equipment

1. Lawnmowers
2. Trimmers
3. Leaf blowers
4. Golf Carts
5. Snow Blowers
6. Operations equipment

## Facilities Included in Scope

The municipal sites that will each require a full electrification audit and subsequent cost evaluation and recommended timeline for implementation will include:

1. Louisville City Services
2. Police and Municipal Court
3. City Hall
4. Louisville Public Library
5. Louisville Golf Course
6. Recreation and Senior Center
7. North Water Treatment Plant
8. South Water Treatment Plant
9. The Louisville Art Center
10. City of Louisville Wastewater Treatment Plant

Each of these municipal facilities have existing Energy Star Portfolio Manager accounts with baseline usage data as well as having completed ASHRAE level 1 audits available for baseline review. As mentioned, the scope of work will involve a thorough review and economic analysis with electrification audit reports delivered for each facility. Sites may contain multiple buildings (white house, golf course maintenance building, old city shops, etc.).

## Project and Deliverables Scope

Respondents will be required to attend bi-weekly meetings with the internal working group and will be responsible for conducting staff interviews with representatives from various departments, including but not limited to: City Manager's Office, Public Works and Facilities,

Planning and Building, Parks and Golf Course, Open Space and Trails, and Sustainability to understand department priorities before conducting site visits. Throughout the project, respondents are responsible for regular communication with staff and will be available to answer questions and provide information as needed.

Upon delivery of each electrification audit report, respondents are responsible for department and/or executive management team presentations with results and recommendations to detail findings and answer questions. Respondents are responsible for one City Council presentation during the project, after the site audits are complete and before the audit reports are complete, to communicate audit findings and project progress and direction.

Upon completion of final report, respondent is responsible for three board presentations (Parks and Public Lands Advisory Board, Open Space Advisory Board and Sustainability Advisory Board) and one City Council presentation to detail project steps, findings, and recommendations with a focus on optimal implementation timeline, decarbonization potential and budget impacts.

The ten audit report deliverables shall contain, at minimum, the following sections:

- Executive Summary to include:
  - List of recommendations and alternative options for electrification and decarbonization of buildings and associated fleet and equipment with benefit/drawback analysis
  - Economic summary with options for financing and grants to offset costs
    - Report on GHG cost effectiveness (ie, GHG reduced / dollar spent) intended to help with prioritizing facilities/measures having the greatest GHG reduction cost effectiveness.
  - Total electrical infrastructure capacity upgrade requirement per facility that would allow for the full electrification and EV charging capacity detailed individually throughout the report
  - Availability of materials and supply chain impacts
  - Availability of service providers, electricians, and others as necessary
  - Recommended timeline and action items for implementation of each recommendation, with an emphasis on maximizing financial investments
  - Decarbonization summary (GHG reduced per recommendation and overall potential)
  - Baseline and proposed total facility site energy use intensity (EUI) comparison or Energy Star scores
  
- Background and introduction with facility descriptions and:
  - Recent (3-year) facility upgrades
  - Review of existing ASHRAE audits
  - Baseline utility data analysis
  - Interview staff to determine and report on knowledge gaps. Deliver on

recommended trainings to fill knowledge gaps (operations and maintenance)

- HVAC Electrification Sections to include:
  - Detailed sections for each HVAC electrification recommendations
    - Description of existing natural gas (or other) system to be upgraded
    - An evaluation of the existing and proposed electrical infrastructure upgrade requirements with cost estimates for the engineering design and implementation specific to each proposed equipment location.
    - An evaluation of each recommended equipment replacement to involve outreach to obtain cost estimates and availability to inform estimated timelines, taking into consideration supply chain barriers.
    - Evaluation of electrification risks (ie. where should building envelope be addressed prior to electrification to avoid future issues operating heat pumps)
    - Evaluation of alternative options (ie. opportunities for combining systems, heat recovery systems, ground-source, or air-source options, etc.)
  
- Distributed Energy Resources Section(s) to include:
  - Evaluation of electric energy generation, storage and resilience opportunities (necessary infrastructure, availability of equipment, specific equipment recommendations, charging and discharging strategy recommendations, costs, etc.)
    - On-site solar PV
    - Battery storage
    - Demand response
    - Vehicle to grid (V2G)
    - Industrial power-surge technologies that may be applicable
  - Innovative future planning (i.e. micro-grid, centralized heating and cooling, etc.) including necessary infrastructure, availability of equipment and costs.
  - Evaluation into peak demand cost savings potential for each DER system recommended.
  - Evaluation of cost comparison between on-site renewables and Xcel Energy subscription programs, including equipment depreciation costs and replacement schedules.
  - Evaluation of existing and proposed fire codes in locations where batteries are being stored, charged, etc. This should include any potential fire code changes that may result from other electrification measures.
  
- Fleet Electrification Sections to include:
  - Detailed sections for each fleet recommendation with:
    - Evaluation of existing fleet routes, schedules, and down-time
    - Recommendations with cost analysis and availability to replace the total fleet of vehicles with electric vehicles and necessary charging



infrastructure; including detailed recommendations that are specific to each fleet replacement vehicle, taking into consideration supply chain barriers.

- Evaluation and recommendations regarding leasing -vs- purchasing fleet EV's
  - Evaluation of the required fleet EV charging infrastructure with recommended schedules and schedule changes (this may involve overlap between each facility so fleet EV's may be shared and optimal charging achieved based on use and overlapping needs) and V2G opportunities.
  - Evaluation of EV charging needs offsite (away from facilities). This may include parks and other locations where our fleet EV's may require charging during the workday to avoid bringing vehicles back to facilities. This may or may not be necessary depending on the findings from evaluations listed previously.
  - Recommended fleet EV battery replacement schedules and costs for annual budgeting purposes.
  - Evaluation of existing and proposed fire codes in locations where batteries are being stored, charged, etc.. This should include any potential fire code changes that may result from other electrification measures.
  - Specific and overall estimates for GHG reductions
- Additional Equipment Electrification Section:
    - Evaluation of operations and lawn care equipment electrification such as lawnmowers, trimmers, leaf blowers, golf carts, snow removal equipment and other operations equipment.
      - Evaluation of existing equipment uses, schedules and down-time
      - Evaluation comparing options to lease our own electric operations equipment -vs- contracting with an all-electric service provider.
      - Recommendations with cost analysis and availability to replace the total number of equipment with electric; including detailed recommendations that are specific to each replacement equipment, taking into consideration supply chain barriers.
      - Evaluation of the required charging infrastructure needed at each facility with recommended charging and use schedules
      - Specific and overall estimates for GHG reductions
      - Evaluation of operations electric equipment charging needs offsite (away from facilities). This may include parks and other locations equipment may require charging during the workday to avoid bringing equipment back to facilities. This may or may not be necessary depending on the findings from evaluations listed previously.
      - Recommended operations electric equipment battery replacement schedules, and costs for annual budgeting purposes.

The final report will summarize the ten audit reports and include a strategic roadmap for full decarbonization of City facilities, fleet, equipment and operations by 2030. This roadmap will include a financial and technological feasibility assessment, implementation timeline, greenhouse gas reduction potential and annual budget implications to achieve decarbonization within the allotted timeframe. Project may be completed prior to May 2023 if deemed feasible by Respondent.

### **Piggyback Contract Award Opportunity**

Please indicate your firm's willingness to extend the terms of resulting contracts, inclusive of price, to other Colorado local government entities, including counties and municipalities, should your firm be awarded a contract or contracts pursuant to this RFP. While this clause in no way commits any other local government entity to purchase from the City of Louisville's awarded contractor, nor does it guarantee any additional orders will result, it is intended to allow such local governmental entities, at their discretion, to make use of the City of Louisville's competitive process (provided said process satisfies their own procurement guidelines) and purchase directly from the awarded contractor. All purchases made by other local government entities will be transactions between that entity and the awarded vendor; the City of Louisville will not be responsible for any such purchases. While not dispositive, a response to this section in the negative may affect the City's decision on whether to award your firm a contract pursuant to this RFP.

### **Submittal Instructions**

If you have any questions about the RFP, please contact Kayla Betzold in the City Manager's Office at 303-335-4534 or [kbetzold@louisvilleco.gov](mailto:kbetzold@louisvilleco.gov). Submittals are due at Louisville City Hall (749 Main Street) for time and date recording on or before August 26, 2022 at 11:59 a.m.

**Electronic submittals can be emailed to [kbetzold@louisvilleco.gov](mailto:kbetzold@louisvilleco.gov).**

All RFPs must be received, and time and date recorded by authorized City staff by the above due date and time. Sole responsibility rests with the Respondents to see that their RFP response is received on time at the stated location. Any responses received after due date and time will be returned to the Respondents.

The City of Louisville reserves the right to reject any and all responses, to waive any informalities or irregularities therein, and to accept the proposal that, in the opinion of the City, is in the best interest of the City of Louisville. Due to the complexity of work required, selection of a firm will not be based solely upon the lowest responsible bid but will also take into account experience gained from work on similar projects and an understanding of the project goals and approach to the project.

Digital copies of the Bidding Documents will be available beginning August 1, 2022 on-line through Rocky Mountain Bid System and linked through the City of Louisville's website at <http://www.louisvilleco.gov/business/bidding-opportunities>.

## Terms and Conditions

1. Each Respondent shall furnish the information required in the proposal.
2. The Contract/Purchase Order will be awarded to the Respondent whose submittal, conforming to the Request for Proposals, will be most advantageous to the City of Louisville, price and other factors considered.
3. The City of Louisville reserves the right to reject any or all proposals and to waive informalities and minor irregularities in proposals received, and to accept any portion of or all items proposed if deemed in the best interest of the City of Louisville to do so.
4. No submittal shall be withdrawn for a period of thirty (30) days subsequent to the opening of RFPs without the consent of the City's delegated representative.
5. A signed purchase order or contract furnished to the selected firm results in a binding contract without further action by either party.
6. Late or unsigned RFPs will not be accepted or considered. It is the responsibility of Respondents to ensure that the RFP arrives at the City of Louisville no later than the time indicated in the "Request for Proposal."
7. The proposed price shall be exclusive of any Federal or State taxes from which the City of Louisville is exempt by law.
8. Any interpretation, correction or change of the RFP documents will be made by Addendum. Interpretations, corrections, and changes of the RFP documents made in any other manner will not be binding, and Respondents shall not rely upon such interpretations, corrections and changes. The City will not be responsible for oral clarification.
9. Confidential/Proprietary Information: RFPs submitted in response to this "Request for Proposal" and any resulting contract are subject to the provisions of the Colorado Public (Open) Records Act, 24-72-201 et.seq., C.R.S., as amended. Any restrictions on the use or inspection of material contained within the proposal and any resulting contract shall be clearly stated in the RFP itself. Confidential/proprietary information must be readily identified, marked and separated/packaged from the rest of the proposal. **Co-mingling of confidential/proprietary and other information is NOT acceptable. Neither a proposal, in its entirety, nor proposed price information will be considered confidential/proprietary. Any information that will be included in any resulting contract cannot be considered confidential.**
10. The City reserves the right to modify the Scope of Services and request revisions to proposals prior to entering into a written contract.

## EVALUATION CRITERIA

Please respond to the evaluation criteria with comments that are concise and to the point. The City will evaluate, and finalists will be selected and invited to continue the process by making formal presentations to a selection committee. The best fit will be recommended to City Council authorizing the City to enter into a professional services agreement. The selection committee will evaluate and score the submittals using a weighted average based upon:

- A. Statement of Interest (SOI). In up to three (3) pages, express your interest in the project, specifically addressing:
  - 1. Specialized experience
  - 2. Analysis/identification of issues – identify constraints as well as opportunities.
  - 3. Goals – identify how your project goals meet or exceed the City’s project goals.
  
- B. Project Approach. In up to five (5) pages, express your project approach, specifically including:
  - 1. A detailed project schedule highlighting critical path and milestones for completion of the project.
  - 2. Examples of similar projects – quality finished projects with proven implementation results
  - 3. Innovative solutions – discuss project alternatives, and/or opportunities to add value to the project.
  - 4. On-time and budget – accountability for time, budget and firm availability.
  
- C. Project Team Listing
  - 1. Provide a listing of team members that will be involved in the process, relevant experience and other material that is pertinent and concise.
  
- D. References
  - 1. Submit three references for similar projects completed within the last three years along with contacts for the project.
  
- E. Cost Proposal
  - 1. A not-to-exceed amount for all phases of the Scope of Services.

## **SUBMITTAL**

Please submit the following information in the order listed below:

1. Name of your company/organization
2. Type of Organization: (Corporation, Partnership, etc.)
3. Address
4. Names and Address of Project Team or Firm
5. Contact Person(s)
6. Telephone, Fax, E-mail
7. Statement of Interest
8. Project Approach
9. Project Team Listing
10. References
11. Cost Proposal

## SIGNATURE PAGE

**Failure to complete, sign and return this signature page with your proposal may be cause for rejection.**

Contact Information	Response
Company Name	
Name and Title of Primary Contact Person	
Company Address	
Phone Number	
Email Address	
Company Website if applicable	

**By signing below, I certify that:**

I am authorized to bid on my company's behalf.

I am not currently an employee of the City of Louisville.

\_\_\_\_\_  
Signature of Person Authorized to Bid on

\_\_\_\_\_  
Date Firm's Behalf

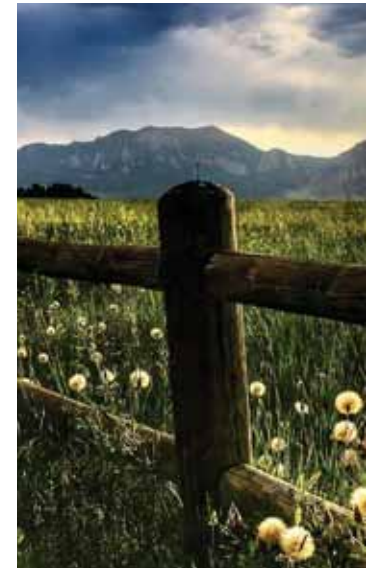
Note: If you cannot certify the above statements, please explain in the space provided below.

**EXHIBIT B**

# City of Louisville

## 2022 INTERNAL DECARBONIZATION PLAN

LOUISVILLE, CO  
AUGUST 26, 2022







August 26, 2022  
 Kayla Betzold  
 City of Louisville, CO  
 749 Main Street  
 Louisville, CO 80027  
 kbetzold@louisvilleco.gov

**RE: Request for Proposals 2022 Internal Decarbonization Plan**

Dear Ms. Betzold and Evaluation Committee,

On behalf of McKinstry Essention, LLC (McKinstry), we are pleased to submit this response to the City of Louisville's Request for Proposals for an Internal Decarbonization Plan. Our team is excited to partner with the City of Louisville to create a roadmap that drives the City towards electrification and decarbonization by 2030 and prioritizes the economic, environmental, and community goals of Louisville.

**A VALUABLE PARTNERSHIP**

Given the scope, scale, and complexity of this project, success will require broad expertise in local policies, new technology, project development, project finance, grants, long-term life cycle analysis, and technical engineering/design. The McKinstry team is the right choice for the City of Louisville project based on the following key proven differentiators:

**In House, Experienced Decarbonization & Resiliency Team.** Based in Golden, McKinstry's team has a proven track record of engineering, designing, and deploying thousands of projects across the US focused on electrification, energy efficiency, water reduction, distributed energy resources, and electric vehicle fleet conversion. With a team that has **in-house experience in both planning and implementation** for renewables, electrification and decarbonization, your team can be assured that you'll receive an **actionable roadmap**. This breadth of experience enables us to deliver a study with just one trusted partner (Cascade Energy) rather than a number of subconsultants.

**Extensive Municipal Experience.** McKinstry has completed more than \$175 million worth of energy services to the municipal market sector in the last four years implemented across 218+ cities, counties, and government agencies nationwide. We have successfully and safely conducted all this effort around work schedules with little-to-no interruption to customer operations and have the recent and relevant experience – both in planning and implementation – to apply to the City of Louisville project.

**Golden, CO-Based Regional Office and Local Commitment.** McKinstry's Mountain Region headquarters is located within the City of Golden – just a few minutes down the road from Louisville – and our team is fully committed to serving the local geography. We are excited to continue working in our backyard to further the City's electrification and decarbonization goals by 2030.

**Success in Converting Audits to Implementation.** With the complexity and uniqueness of this project for the City of Louisville, your team will need to select a firm that not only has experience with roadmaps and studies but also has experience with implementation. McKinstry has General Contracting roots and has experience implementing over \$2 Billion in energy, electrification and decarbonization projects nation-wide. Our team is implementing over \$100M in decarbonization construction projects in Colorado alone in the next year.

Sincerely,



Ashley Brasovan | Senior Account Executive  
 303.968.4138 | ashleyb@mckinstry.com

**SIGNATURE PAGE**


**Failure to complete, sign and return this signature page with your proposal may be cause for rejection.**

Contact Information	Response
Company Name	McKinstry Essention, LLC
Name and Title of Primary Contact Person	Ashley Brasovan   Senior Account Executive
Company Address	16025 Table Mountain Parkway, Suite 100 Golden, CO 80403
Phone Number	303.968.4138
Email Address	ashleyb@mckinstry.com
Company Website if applicable	www.McKinstry.com

**By signing below, I certify that:**

I am authorized to bid on my company's behalf.

I am not currently an employee of the City of Louisville.

  
 \_\_\_\_\_  
 Signature of Person Authorized to Bid on

08.26.2022  
 \_\_\_\_\_  
 Date Firm's Behalf

Note: If you cannot certify the above statements, please explain in the space provided below.

“The experience, professionalism and technical expertise McKinstry has displayed are among the highest in the industry.”  
 —Joe Castro PE, Former Facilities and Fleet Manager, City of Boulder

**Company Information**

**Company Name:** McKinstry Essention, LLC  
**Type of Organization:** Limited Liability Company

**Location:** McKinstry Golden Office  
 16025 Table Mountain Pkwy, Suite 100  
 Golden, CO 80403

**Wastewater Subcontractor:** Cascade Energy  
 5670 Greenwood Plaza Blvd, Suite 500W  
 Greenwood Village, CO 80111

**Primary Contact Person:** Ashley Brasovan  
**Telephone:** 303.968.4138  
**Email:** ashleyb@mckinstry.com

# Statement of Interest

## Specialized Experience

**MCKINSTRY: LOUISVILLE'S IDEAL PARTNER IN DECARBONIZATION** McKinstry is an energy performance company with an unmatched depth and breadth of experience in building planning, design, development, contracting, construction, finance, and operations. Over the last decade, McKinstry has planned, developed and implemented over \$2.0 billion in energy projects that reduce our client's carbon footprint through electrification, efficiency and renewable energy. Founded in 1960, with 2,000+ staff, 26 offices coast to coast, and our Rocky Mountain headquarters just down the road in Golden, McKinstry is an ideal partner for Louisville because:

**As a company, we believe the climate crisis is an existential threat to humanity.** We see our core corporate mission as resolving the climate, equity, and affordability crises as nested concerns in the building sector. This is not just another job for us – we are fully aligned with Louisville's climate values. As shown below, we have taken a national leadership role in eliminating climate harm.



*McKinstry made a major commitment to exemplify deep climate solutions and self-developed Catalyst, which will be the largest dual ILFI Zero Energy/Zero Carbon certified building in the United States.*

**Local strength, national horsepower.** Our Golden Rocky Mountain region headquarters, with 100+ employees, is also our corporate center of excellence in existing building decarbonization. Many of our national experts live locally, including in Louisville. As a national company of over 2,000, we also have a deep well of specialized expertise to draw from.

**We are passionate innovator/doers, wedding world class design with real world solutions.** We love a good study, but don't believe our work is successful if the solution doesn't happen. Our 360 degree perspective on how buildings are designed, estimated, financed, retrofitted, and operated over the long haul give our studies a much greater likelihood of action – truly shovel ready.

**While we implement solutions, we also specialize in planning and consulting.** Our engineering and design consulting studio focuses solely on front-end planning, helping clients make good decisions about their future. This studio is delivery agnostic, ensuring the best value is provided for the customer.

**We are privately owned.** This seemingly small detail makes a huge difference – we are mission-driven, deeply care about our long term relationships, and are not moved by relentless stock market demands for maximum profitability.



Figure 1. Modeled vs Actual Air Source Heat Pump

**Design informed by actual performance.** As our industry shifts towards electrification and use of heat pumps, McKinstry tracks actual heat pump performance. We work with our field teams to acquire system operational data and use this to inform our future modeling and designs. The ability to design, build, and operate these heat pump systems sets McKinstry apart.



**McKinstry has delivered more than \$180 million of decarbonization results for 200+ local governments in the last five years, all of which began with plans and audits. The following are details of our specialized experience:**

### DECARBONIZATION PLANNING AND ROADMAPMING



Led by national decarbonization pioneer **Brad Liljequist**, with technical leadership by **Brian Goldcrump**, McKinstry's decarbonization roadmapping team combines deep innovation with wholistic solutions, ensuring we create an energy endgame for Louisville that provides maximum benefit for minimum cost.



**FUN FACT:** Brad was launch Director of ILFIs Living Community Challenge

**Experience:** Decarbonization implementation plans for 200+ local governments, including the City of Boulder, Jefferson County, City of Golden, City and County of Broomfield, City and County of Denver and City of Lakewood; Laird Norton Properties decarbonization plan; Salt Lake City School District decarbonization roadmap; Seattle University decarbonization roadmap.

### EXISTING BUILDING ELECTRIFICATION



*McKinstry is currently electrifying two schools for Salt Lake City School District.*

Very few companies, if any, bring the same level of expertise, rooted in both design and actual retrofitting, to existing building electrification as does McKinstry. Led by Sarah Moore, our national director of engineering for existing buildings, our dedicated retrofit team of nine (out of a larger 110 person engineering group) plans and designs electrification solutions every day.

**Experience:** Seattle Central College, Uintah Elementary HVAC electrification (full design); Backman Elementary electrification (full design), Unico, Laird Norton, Seattle University.

### RENEWABLES/EV INFRASTRUCTURE DESIGN, DEVELOPMENT, AND DELIVERY



*McKinstry is pioneering innovative row crop/community solar with Denver Botanic Gardens and Chatfield Farms.*

McKinstry's 30+ strong team of solar designers and developers, based in our Golden, CO office are responsible for 35.2 megawatts of solar in the last two years – filling the equivalent of 77 football fields with solar! With the recent **Inflation Reduction Act inclusion of 30% Direct Payment for onsite solar**, this solution is likely to take a higher profile than previously in the planning effort.

Our EV infrastructure team has designed and developed an array of projects, including the prototype EV fleet delivery van site for a global online retailer.

**Experience:** City of Boulder, City and County of Denver, Denver Public Schools, City of Lakewood, City of Golden, City and County of Broomfield, Jefferson County, Aurora Public Schools, Colorado School of Mines

# Statement of Interest

## Specialized Experience

### HIGH PERFORMANCE LIGHTING



*The International Journal of Industrial Ergonomics—comparing fluorescent and LED lighting—found an 8.3% performance improvement in visual and cognitive tasks.*

McKinstry's Lighting Solutions Team, based out of the Golden office, has completed more than 42 million square feet of lighting projects providing more than \$7,000,000 in cost savings the last 3 years alone. This team focuses on innovative solutions to ensure the maximum watts are saved while providing quality and comfortable lighting environments.

**Local Experience:** Denver International Airport, City and County of Denver, City of Phoenix, University of Boulder, City and County of Broomfield, Jeffco School District

### ADVANCED BUILDING OPTIMIZATION



*McKinstry recently reduced one client's carbon footprint by 18%, just through Advanced Building Optimization!*

The bottom line is the majority of buildings are simply operated poorly, wasting huge amounts of energy. McKinstry has an entire 150 person division dedicated to saving energy through retrocommissioning, efficient building operations, and diverse measures that add up to big carbon reductions.

**Experience:** Decarbonization implementation plans for 200+ local governments, including the City of Boulder, Jefferson County, City of Golden, City and County of Broomfield, City and County of Denver and City of Lakewood; Laird Norton Properties decarbonization plan; Salt Lake City School District decarbonization roadmap; Seattle University decarbonization roadmap.

### INNOVATIVE ELECTRIFICATION

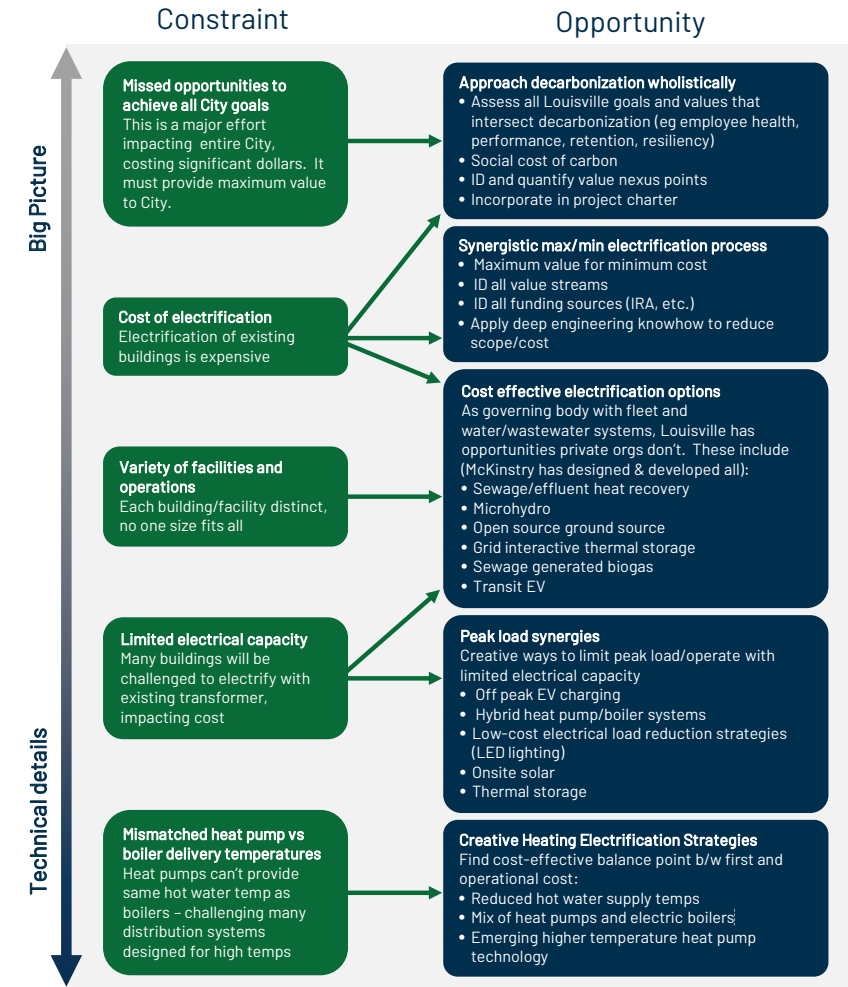


*McKinstry developed the South Landing all electric district heating/cooling system, which is 4x more efficient than a code based system.*

McKinstry is an international leader in innovative district and individual building electrification.

**Experience:** Central Washington University plant gas to electric conversion study; 2nd largest sewage heat recovery/heat pump district in US; all electric South Landing heating/cooling district; regional water main microhydro electricity generation; wastewater treatment plant biogas collection; split distribution temp boiler conversion to heat pump; Two district-scale open loop ground source heat pump system.

## Analysis/Identification of Issues



The recent adoption of the Inflation Reduction Act (IRA) throws a very positive wildcard into the mix of renewable electricity decision-making (self-owned vs utility provided). We understand Louisville has a current 100% renewable electricity contract with Xcel Energy. The new IRA 30% Renewables Direct Payment to non-taxed entities (such as Louisville) will upend the math - making it even more cost effective for Louisville to self-own renewables.

# Statement of Interest

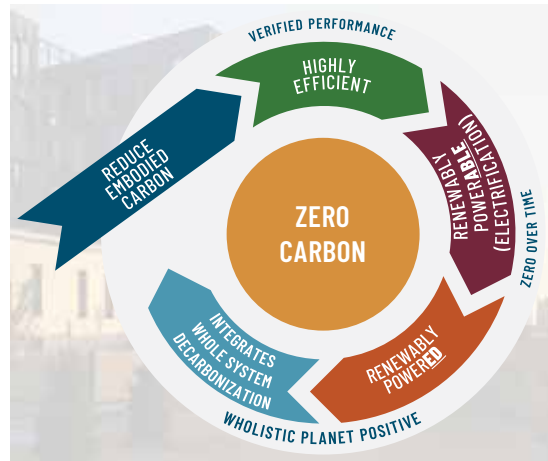
## Goals

Our sole initiative is to achieve Louisville's goals for this project – McKinstry's ultimate benchmark of success is a satisfied customer. This is reflected in the longterm partnerships McKinstry has built with municipal and public sector clients in Colorado.

Since establishing our Colorado presence in 2007, McKinstry has implemented more than \$200M+ in energy efficiency work with municipal and public sector clients – McKinstry's Client Voice Program surveyed Colorado Municipalities, and the respondents gave McKinstry an average **Net Promoter Score (NPS) of 98%**.

As a starting point, based on Louisville's decarbonization goals, we believe we have 100% climate values alignment between the organizations, facilitating goal achievement. McKinstry's Action for Impact plan establishes us as leading a Zero Carbon future as a core tenet – reflected in being an early adopter of The Climate Pledge, which is focused on organizations committed to doing the hard work of true decarbonization, all the way to full Zero Carbon performance.

**McKinstry was the #10 signatory of The Climate Pledge, and we are now actively pursuing our path to Zero Carbon.**



McKinstry's vision of wholistic decarbonization aligns with Louisville's stated rfp goal of "electrification and decarbonization of all City buildings, fleet, equipment and operations by 2030."



Fun fact: McKinstry designed and delivered the Zero Carbon solar program for Climate Pledge Arena.

**From a management standpoint, achieving Louisville's decarbonization goals requires a very deliberate approach throughout the project, including four specific elements:**

### CLIENT-CENTERED LEADERSHIP

Our study program director, Ashley Brasovan, is unparalleled in excellent client responsiveness and team management. She will ensure the study stays on course, adjusting as needed to meet Louisville's expectations.

**Fun Fact:** Even though Ashley is a nationally competitive ultra-runner, she is the first into the office in the morning!



### INITIAL ORIENTATION & PROJECT CHARTERING

The City's project scope for this RFP is quite clear, so expectations are well defined. We also believe a project kickoff and chartering process as part of the contract establishment process will enable wholistic investigation of aligned topics (such as resiliency, ventilation and health), as well as a clear understanding of the work ahead.



### 30/60/90 REVIEWS

These reviews are a standard process for McKinstry. In addition to maintaining open communication and alignment, they also allow us to ensure we are on track with Louisville's expectations and to pivot as needed.



### DELIVERY AGNOSTIC

As we've expressed elsewhere, McKinstry has a bias for action – we like to see our studies delivered, regardless of who is doing the work! However, we are always 100% focused on identifying the best way for a specific client to be delivered a given project – we don't approach a situation assuming a given path. Because we are skilled in an array of delivery mechanisms, our studies are informed by a realistic and pragmatic implementation approach.



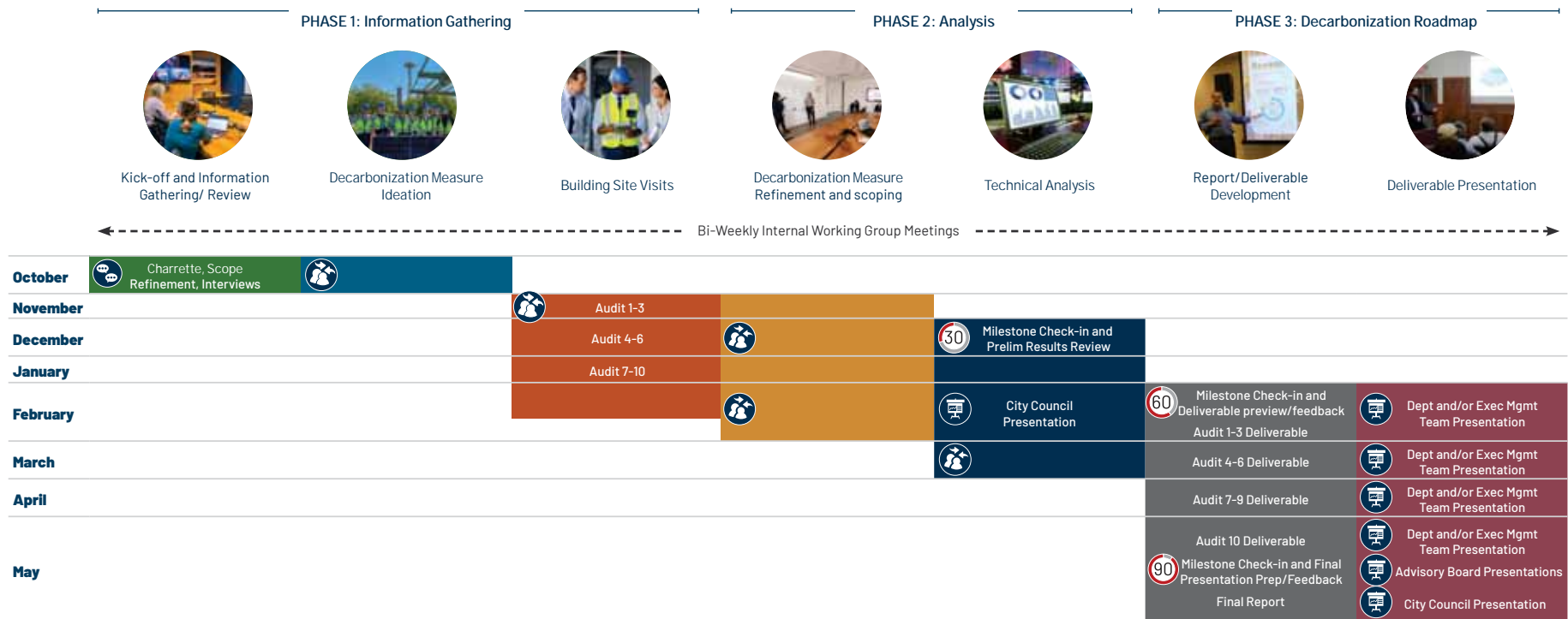
Finally, we know from the RFP that climate action, rather than study, is Louisville's fundamental goal. McKinstry's bottom line is delivering verified decarbonization – our entire approach throughout this study will be to ensure Louisville is successful in achieving its climate goals in the real world, not on paper.

**Over 90% of McKinstry's efficiency and decarbonization plans are implemented.**

# Project Approach

## Schedule

The schedule below outlines the timing of the project and highlights the key involvements with Louisville's project team. The 30/60/90 check-ins are critical to the success of the project, and help us recalibrate expectations or direction if needed. The RFP calls for engagement outside of the direct project team, and we plan on coordinating with the project team prior to these engagements. This schedule will be a working document as the project evolves, allowing us to ensure project needs are being met.



- Charrette: Project process, Brainstorming, and Big Ideas
- Grant review
- Interviews: Facilities and department staffs
- Review building audits, benchmarking, and drawings
- Building GHG Inventory
- Review fleet studies
- Establish KPIs and value parameters for benefit/cost analysis
- Project charter development and buy-in

- Establish preferred and no-go measures with facilities staff
- Mechanical capacity analysis
- Load reduction and efficiency measures
- Electrification of buildings, fleet, etc.
- PV, Microgrid, EV Charging
- Commercial kitchen electrification strategies
- Assess condition of key mechanical elements and roofs

- On-site evaluation
- Review constructability of proposed measures

- Narrow alternatives based on feasibility, effectiveness, and cost
- High-level measure scoping for cost estimating
- Qualitative benefit/drawback and non-energy benefit (health, org performance, etc) analysis
- Grant research refinement

- Energy calculations
- Cost estimating
- Supply chain impacts
- Utility coordination (rate schedules, incentives, renewable programs)
- Financial Analysis:
  - Grant analysis
  - Carbon tax and/or Social Cost of Carbon
  - Quantify non-energy benefits
  - Quantify benefit/drawback analysis
- Implementation plan (finance, procurement pathways/options)

- Establish Zero Over Time phasing plan based on anticipated capital replacement of rooftops and critical HVAC components
- System documentation
- Building reports
- Final report
- Reveal interactive tool (optional)

**Key**

- MILESTONE MEETING
- KEY DELIVERABLE
- LOUISVILLE INPUT / COLLABORATION
- PRESENTATION

# Project Approach

The following are four wholistic decarbonization roadmap projects by McKinstry, all of which are being implemented.



## CITY AND COUNTY OF DENVER Decarbonization Plan and Implementation

- ASHRAE Level 2 & 3 audits
- 8,100 MT CO2 annual savings
- 22 buildings
- 1,900,000 square feet
- \$17 million efficiency/electrification retrofit
- \$25 million community solar garden
- 9.6 megawatt community solar across six sites
- HVAC, envelope, LED, controls upgrades
- Behavior engagement/active efficiency management



## CITY OF BOULDER Decarbonization Plan and Implementation

- ASHRAE Level 2 & 3 audits
- 13,157,000 kWh/8,210 metric tons CO2 annual savings
- Phase One: 20% CO2 reduction
- 66 buildings
- 1.5 million square feet
- \$17 million
- Municipal pool solar thermal
- Envelope air sealing
- Electric vehicle charging
- Wastewater treatment plant process improvements
- \$4.7 million in incentives
- 1.2 megawatt solar across 12 sites
- HVAC, envelope, LED, controls upgrades
- Behavior engagement/active efficiency management



## SALT LAKE CITY SCHOOL DISTRICT Decarbonization Plan and Implementation

- Includes a comprehensive Zero Over Time roadmap for the District to achieve Zero Carbon performance in their facilities by 2040, including facility electrification over 5 phases
- ASHRAE Level 2 & 3 audits
- Decarbonization goal: 100% renewable electricity by 2030; 100% zero carbon by 2040
- First phase (under construction): 30% CO2 reduction
- 40 buildings
- \$29.3 million retrofit
- Electrification of two pilot schools (1 full, 1 hybrid) - 1 ILFI Zero Carbon compliant; integrated maximum CO2 levels = better student performance
- \$2 million in incentives
- 1 megawatt solar across 6 schools
- HVAC, envelope, controls upgrades
- Advanced LED lighting system, including daylight variability and vacancy controls



## SEATTLE CENTRAL COLLEGE Electrification Study and Design

- Extremely complex electrification study with multiple buildings, design temperatures, existing steam, and aging facilities
- Incredible 86% reduction in CO2 footprint!
- 1197 metric tons of annual CO2 savings
- 20 buildings, 1.2 million square feet
- Thermal sharing mapping
- Calculated annual carbon savings of 2,640,000 lbs
- Grant awards total roughly \$2.3M

*"More than just helping the college achieve our greenhouse gas reduction goals and a net zero carbon status, the project is an investment in a living laboratory that will offer faculty and students the opportunity to solve real-world problems in partnership with McKinstry."*

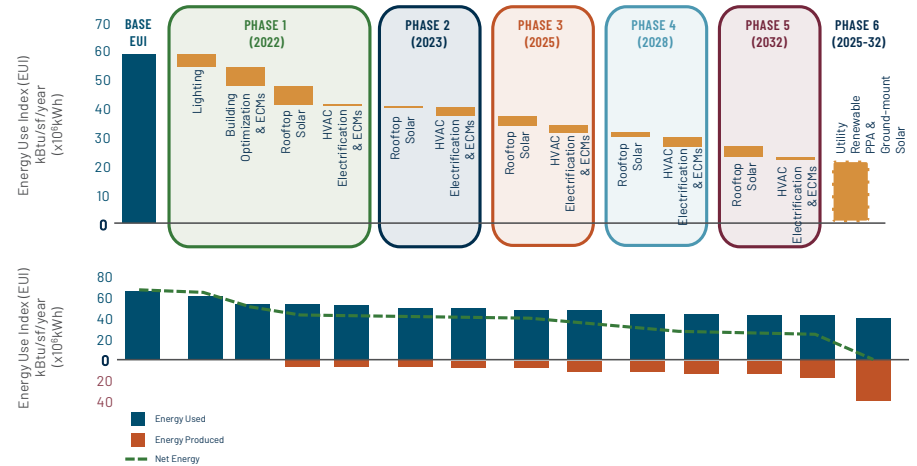
*-Lincoln Ferris, Seattle Central College Interim VP of Administrative Svcs*

### SELECT ADDITIONAL FOCUSED DECARBONIZATION EXPERIENCE INCLUDES:

**South Landing Zero Carbon District** McKinstry planned, designed, developed, built and operates a next-gen all-electric heating and cooling plant, serving a tech/STEM education campus in Spokane - which is four times more efficient than a traditional natural gas based system.

**Seattle University Decarbonization Plan** McKinstry is developing a decarbonization roadmap for the campus' 26 buildings. The bulk of the effort consists of building electrification, as the buildings have a wide-array of heating types. McKinstry is working closely with the facilities group to understand their electrification preferences, to ensure the plan not only decarbonizes, but is also operational.

**Laird Norton Properties Decarbonization Roadmap** McKinstry created a portfolio-wide decarbonization implementation roadmap for this private real estate trust, including eleven sites over the western US, including Denver. The project included an electrification study for US Bank tower, the largest office building in Idaho.



Example of decarbonization summary roadmap created for confidential client. Upper chart reflects appropriate phasing timing based on capital replacement cycle; lower chart shows reduction in energy use and generation of renewable energy use, with the dashed green line showing path to full decarbonization.

**Covington Water District Microhydro** McKinstry designed and installed a microturbine into the District's inline gravity pressurized water main connection (170 feet of head pressure) from the regional water system. Operating at 1100 gallons per minute, the microturbine produces 32,000 kWh a year at a constant rate, powering the District headquarters.

**Wide Scale Solar Delivery** McKinstry's 30+ strong team of solar designers and developers, based in our Golden, CO office, are responsible for 35.2 megawatts of solar in the last two years, including:

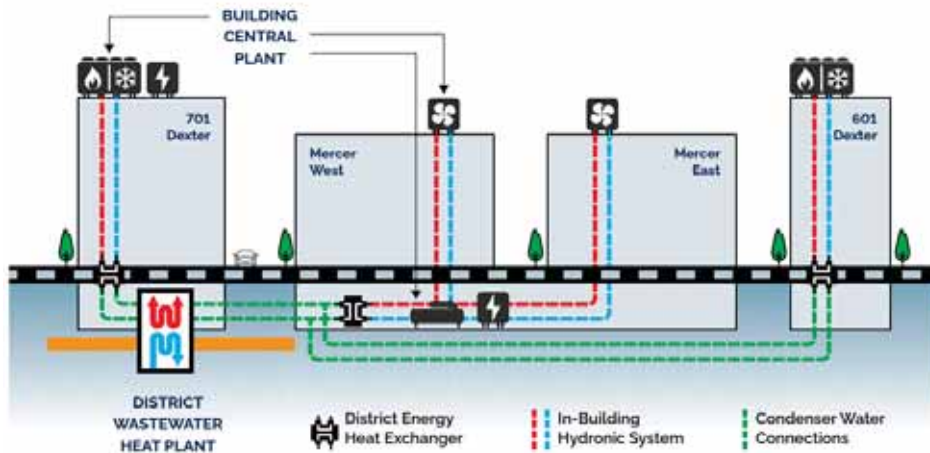
- City and County of Denver's Community Solar Garden (9.6 mw)
- Climate pledge arena (1.2 mw)
- Vestas Pueblo CO wind turbine factory (15 mw)

# Project Approach

**City of Tacoma Sewer Biogas Harvesting/Fleet Biogas Power** McKinstry delivered a sewage biogas recovery system which reduced the City's carbon footprint by 900 MTe CO<sub>2</sub>, while generating nearly \$2 million in revenue, with a system payback of less than ten years.

**King County Bus Electrification Infrastructure** McKinstry delivered a \$7m electric bus charging system, enabling the County to pilot three different battery/drivetrain/charging systems.

**Real Estate Sewage Heat Recovery District** McKinstry designed and is delivering one of the two largest sewage heat recovery systems in the United States. Includes tapping an eight foot diameter regional sewage main built in 1908, and diverting its flow into heat recovery processor/wet well. Enables electrified, heat pump based heating and cooling for 1.2 million sf of medical research/labs.



The groundbreaking McKinstry-delivered Real Estate sewage heat recovery system will save an incredible 12,100 metric tons of CO<sub>2</sub> per year.

**Open Loop Ground Source Systems** McKinstry designed and constructed two major open loop ground source systems (more cost effective than traditional closed loop) this year, one for a state public health lab (including steam conversion) and one for a medical school/tech office.

**Delivery Fleet Electrification (Confidential)** McKinstry conceptualized and designed two major fleet delivery vehicle charging facilities for a major online retailer.

The table to the right is a list of recent Colorado clients McKinstry provided decarbonization study and implementation.

DECARBONIZATION STUDY & IMPLEMENTATION CLIENTS	FACILITY TYPE/ PROJECT TYPE	PROJECT SIZE (\$)	SQUARE FEET
Huerfano County	Government	\$2-\$3M	157,313
City and County of Broomfield	Government	\$2-\$3M	394,056
City of Boulder Phases 1 - 4	Government	\$17M	1,500,000
Denver International Airport	Government	\$83M	8,000,000
City of Gunnison	Government	\$2-\$3M	1,600,000
City of Ogden	Government	In Progress	1,000,000
City of Henderson	Government	\$5.1M	(parks & trails)
City and County of Denver	Government	\$42M	1,800,000
Foothills Park and Recreation District Phase 2	Government	\$8M	358,400
Moffat County	Government	\$490,000	50,000
Routt County - Phase 2	Government	\$1.3M	200,000
City of Steamboat Springs - Phase 2	Government	\$989,000	100,000
Town of Hayden	Government	\$1.1M	150,000
Town of Yampa	Government	\$68,000	8,000
Town of Oak Creek	Government	\$75,000	8,000
Moffat County School District	Government	\$560,000	150,000
City of Craig	Government	\$1.1M	100,000
City of Durango	Government	In Progress	298,200
City of Clearfield	Government	\$2M	153,000
City of St. George	Government	\$2M	477,724
City of Lakewood	Government	\$2.4M	254,631
Jefferson County Phase 2	Government	\$1.6M	533,100
Highlands Ranch Community Association	Government	\$2.6M	330,685
City of Golden Phase 2 Solar	Government	\$3.2M	solar-only
South Suburban Parks & Recreation	Government	\$5.7M	702,062
City of Boulder Recycling Center	Government	\$1.6M	27,717
City of Longmont	Government	\$3.7M	320,949
GSA Region 8	Government	\$10.8M	5,000,000
Adams 12 School District	K-12	\$2,097,692	400,949
Cotopaxi School District	K-12	\$2.3M	50,161
Fremont RE-2 School District Phase 1-2	K-12	\$10.3M	400,000
Aurora Public Schools	K-12	\$12M	289,205

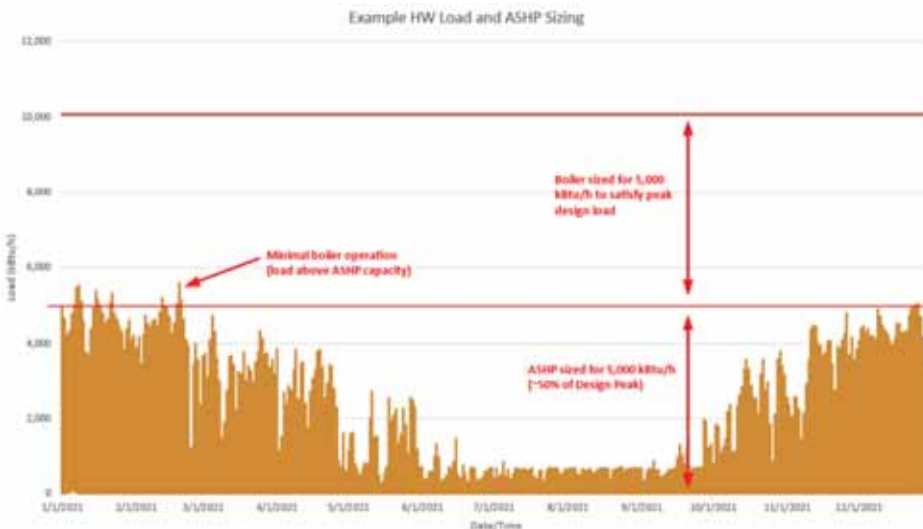
# Project Approach

## Innovative Solutions

McKinstry believes that innovation isn't done for its own sake – it is done to be effective. We seek to combine practical, low-hanging fruit actions with out-of-the-box, creative, yet real solutions to provide for a unified, high value approach. The following are a number of innovations we think could have merit for Louisville.

### RIGHT-SIZED ELECTRIFICATION

In addition to implementing energy efficiency and electrical load reduction measures, it is also important to balance highly efficient (but more expensive) heat pump technology with more cost-effective (but less efficient) electric boiler technology. Using our experience in this climate, we utilize modeling tools to ensure the electrified system strikes the right harmony between first cost and operational cost. Through this analysis, the heat pump can be sized for only 50-60% of the building heating capacity, but still provide heating for 80%+ of the year. This same thought process can be applied to partial electrification if needed, swapping out the electric boiler for a gas boiler.



Balancing Air Source Heat Pump (ASHP) and Electric Boiler Sizing

### COMBINING GROUND MOUNT SOLAR AND SOIL CARBON SEQUESTRATION

McKinstry is already pioneering an agrivoltaic approach to community solar with the City and County of Denver at the Denver Botanical Gardens/Chapfield Farms. Even more active carbon sequestration is possible through application of biochar, etc..

### SEWAGE HEAT RECOVERY BASED HEAT PUMP HEATING/COOLING

Akin to a ground source heat pump system, but often with lower cost and higher efficiency, this approach uses municipal sewage (often averaging 50-60 degree F even during winter) as a thermal base for efficient water-based heat pumps to operate. Often the greatest barrier to this technology is physical and jurisdictional access to the sewage – which municipalities typically have. These systems may also qualify for a 30% Direct Payment through the Inflation Reduction Act.

### PROCESS INNOVATION - MAKING THE RIGHT CHOICE AT THE RIGHT TIME FOR MAXIMUM VALUE.

Decarbonization, especially when it goes as far as electrification and fully renewable power, means a level of organizational engagement and investment that runs deeper than a one-off project. It has to be done right and wholistically – folding in all related organizational goals, such as high performance operations, employee health, retention, satisfaction, and productivity, and resident satisfaction. The right cost-effective balance between energy efficiency, electrification, and renewables must also be found. Then, a multi-year phasing based on the end-of-life for rooftops (to avoid de/reinstall of solar) and key HVAC components should be established. Our Zero+ approach means that we are looking at decarbonization through a broader lens - maximizing the value to all organizational objectives, delivered at the most cost effective time.

### WASTEWATER TREATMENT SEWER INFLUENT SMOOTHING AND WATER RESERVOIR LOADING

The sewer treatment process can borrow from the concept of thermal storage by holding sewage for optimized treatment. Similar to thermal storage, this saves money and reduces carbon by allowing treatment to occur during off-peak hours and times of renewable self-generation.

### MICROGRID/DISTRIBUTED ENERGY RESOURCE

We will utilize a formal stage-gate process during the DER feasibility assessment. This organizes tasks and deliverables in a chronological way that minimizes project risk and allows for discrete decision points, tracks information, documents and deliverables, engages stakeholders and provides a systematic approach to assessing overall project feasibility. The result is an efficient and thorough assessment of DER opportunities well-integrated into the overall recommended decarbonization plan.

### KITCHEN ELECTRIFICATION

One of the often-overlooked aspects of electrification is process and cooking loads. The golf course has a full-service restaurant, so we know a good portion of the site's energy use will be from gas cooking. Our engineering group has evaluated kitchen electrification in existing buildings and knows how this process impacts building electrical infrastructure. McKinstry frequently partners with the Food Service Technology Center to deliver commercial kitchen electrification.



# Project Approach

## VEHICLE TO GRID (V2G)

Vehicle-to-Grid (V2G) technology is still in its infancy, with limited solutions on the market now. The industry has generally agreed the architecture of these systems will mimic stationary battery installations, and the technology will be more readily available during the implementation period of this decarbonization plan. In this study we will incorporate known information as well as how to integrate future technologies.



McKinstry recently delivered this electric bus charging pilot for King County, WA

## NEXT GEN GRID INTEGRATED ELECTRIFICATION

Full decarbonization of existing facilities is highly complex from an electrical capacity and grid interactivity standpoint. Reducing existing electric load through efficiency, increasing load through heating electrification, producing onsite electricity, and then interfacing with a grid which has time variable carbon intensity. While challenging, this presents an opportunity for net decarbonization, taking advantage of offpeak electrical pricing. McKinstry started a new venture called EDO in 2020, which specializes in Grid-Integrated Efficient Buildings. They will coordinate with the utility to determine the long-term plan and viability of this technology. [www.edoenergy.com](http://www.edoenergy.com)

## RADICAL PLUG LOAD REDUCTION

We note that the RFP doesn't speak in detail to the many efficiency measures needed to cost effectively achieve Louisville's decarbonization goals. One critical element is a 360 assessment of things that plug into outlets. McKinstry's Four R approach – Review, Remove, Replace, and Reduce- is a proven method for radically reducing what is often the largest single building energy load post-electrification. A core element of this is using IT network enabled computer/monitor auto shutdown functions – typically not done.

## COST-EFFECTIVE ENVELOPE IMPROVEMENTS

Based on our substantial previous experience, total envelope overhauls of existing buildings can be quite challenging from a cost-effectiveness standpoint when coupled with heat pumps. However, air sealing, potentially combined with heat recovery ventilation, can be a very effective strategy, as it also improves air quality and thermal comfort. Attention to areas like the roof/parapet junction in particular can yield substantial benefits. Window inserts, such as those provided by the local company Alpen, is another potentially cost-effective solution with additional benefits.

## On-time and budget

**SINGLE SOURCE OF ACCOUNTABILITY** McKinstry believes in the value of streamlining ownership of project outcomes through one single source. We build our teams as a unified system of interoperable components with experience working together. Instead of multiple, self-interested parties, McKinstry offers a single team that shares equal accountability in delivering our project promises. To expedite the flow of information, Brian Goldcrump will lead creation of the study, engaging the right expert at the right time, while Ashley Brasovan will ensure the City is fully informed and happy, every step of the way. We understand Louisville has numerous stakeholders interested in a successful outcome for this project. Ashley will collaborate with you to ensure that we engage all of your constituents in the City, including facilities management, the community, and staff, to deliver a unified decarbonization plan.

**SCHEDULE** Our team has extensive and successful experience, saving valuable time and budget. As a result, McKinstry is confident in our ability to give Louisville the best chance of completing the project in the most efficient way possible. McKinstry has provided a proposed schedule for the City's decarbonization plan, and we are confident that our team can achieve all project milestones. However, should we need to pivot during the development process, McKinstry's team values strong communication and seeks to resolve potential schedule derailment by providing 30, 60, and 90 review meetings.



**MAXIMIZING YOUR BUDGET** With numerous municipality's decarbonization projects under our belt, McKinstry understands the pain points. Therefore, we make it our mission to save costs without sacrificing the owner's vision. Our delivery approach will maximize the opportunity to achieve your decarbonization goals within budget.

**FIRM AVAILABILITY MCKINSTRY** is 100% committed to successfully executing the City's decarbonization efforts. Upon commencement of the contract, McKinstry will prioritize coordination with the City to review each project's life cycle and map a timeline of scope requirements for each building. We've vetted every team member on our organization chart to ensure availability. Additionally, we are backed by over 2000+ energy professionals and will pull resources to support as necessary.

McKinstry's Client Voice Program surveyed Colorado municipalities, and the respondents gave McKinstry a **Net Promoter Score of 98%**.

# Project Team

“McKinstry does a good job of hiring good, strong people to deliver a great service.”  
 – Stu Reeves, City of Fort Collins



## Project Team Leads



**BRIAN GOLDCRUMP, PE**  
 Whole Systems Technical Study  
 Director, Analysis Lead



**ASHLEY BRASOVAN**  
 Team Lead, Louisville Liason,  
 Financial /Grant Specialist



**BRAD LILJEQUIST**  
 Director of Zero Carbon Roadmap  
 Innovation & Leadership

### RENEWABLES / DERs



**DONALD CHUNG**  
 Distributed Energy  
 Resource Expert



**MARTIN BEGGS**  
 Renewable Energy Expert

### BUILDING ELECTRIFICATION ENGINEERING + DISTRICT OPPORTUNITIES



**SARAH MOORE, PE**  
 Engineering Director, Building  
 Electrification



**DAVID ZILLIS, PE**  
 Electrification Engineer



**XIA FANG, PE, CEM, BEMP**  
 Efficiency Strategies And  
 Estimating



**PAUL HIGHLEY, LEED, PE**  
 Electrical / Electric Vehicle  
 Engineering



**JOHN KEARNS BEMP, EIT,  
 CEM**  
 Energy Analysis



**MARLA C COREY-LOIOLA**  
 Cost Estimating

### ELECTRICAL INTEGRATION AND EV FLEET/INFRASTRUCTURE



**PAUL HIGHLEY, LEED, PE**  
 Electrical / Electric Vehicle  
 Engineering



**NICK EDNEY, CPENG**  
 Electrical Vehicle  
 Infrastructure

### WATER/WASTEWATER DECARBONIZATION



**PETER SHARP**  
 Strategic Energy  
 Management Coach



**GIULIA POLLASTRI**  
 Project Engineer



**JOHN ROSENBLUM, PHD**  
 Industrial Energy and Water  
 Efficiency Engineer

#### McKINSTRY'S WATER/WASTEWATER DECARBONIZATION PARTNER

Cascade Energy offers unique expertise in municipal water and wastewater facilities. We have an in-house team of six experienced engineers focused exclusively on reducing energy consumption improving the sustainability of this customer segment. Our key personnel are industry professionals with hands-on experience in water and wastewater design, construction, and operations coupled with deep energy efficiency, greenhouse gas, and sustainability knowledge. Our team has proven credibility in this conservative industry by demonstrating understanding of operator tasks and priorities, along with the regulatory environment these facilities must navigate. Since 2013, Cascade staff have helped more than 85 wastewater plants and 60 water systems lower their costs, reduce emissions, and become more resilient through operational improvements and system optimization. Along the way, we have identified and analyzed hundreds of capital improvements to further move the needle.

# Project Team



## ASHLEY BRASOVAN | Project Executive/Grant & Finance Specialist

### WHY ASHLEY?

- ✓ Ashley has successfully secured \$100M+ financial packages for public sector efficiency projects within Colorado – giving her a hands on understanding of how the Louisville decarbonization roadmap can be implemented.
- ✓ Ashley is laser focused on client satisfaction – she will ensure our team overdelivers for Louisville.

### ASHLEY'S ROLE

As Project Executive, Ashley will ensure Louisville's objectives and goals are met, any issues are addressed, and schedule/deliverables are achieved in a coordinated and timely manner. She will also support financial strategies, grant funding, and delivery of the benefit/drawback analysis.

### SELECT PROJECT EXPERIENCE

**Huerfano County, CO** – Project Executive for 33 building decarbonization and energy efficiency project. \$2-\$3 million construction contract pending.

**Denver International Airport, CO** – Project Executive for 8.5 million sq. ft. decarbonization and energy efficiency project. \$82 million project.

**City of Lakewood, CO** – Project Executive for energy efficiency program and Solar Feasibility Study

**Northwest CO Regional Solar Resiliency Project, CO** – 15 sites in Hayden, Yampa, Craig, Steamboat Springs, and Oak Creek; Ground-mount, roof-mount and battery storage

**City of Golden, CO** – Project Executive for utility dashboarding project

**City and County of Denver, CO** – 6.6MW rooftop, carport, and ground mount portfolio in development

**City and County of Broomfield, CO** – 2MW carport and ground mount portfolio in development

**Fremont RE-2 School District, CO** – 500kw ground mount solar and energy efficiency program Foothills Park and Recreation District Phase II, CO – Project Executive for Phase II audit and energy efficiency program

**City of Durango, CO** – Project Executive for decarbonization and energy efficiency project.

**University of Northern Colorado, Greeley CO** – Sustainability Strategist and Program Manager for \$8.7 million energy efficiency program

**Denver Public Schools, CO** – Project Strategist and proposal development resource for \$8.5 million decarbonization and energy efficiency project.

### EDUCATION

Duke University - M.A., Energy Management  
Duke University - B.A., Earth and Ocean Science

### ACCREDITATIONS

Energy Services Coalition Colorado Chapter, Secretary (current)

### AFFILIATIONS

ASHRAE member  
Associated Builders and Contractors – Seattle Chapter

### TENURE

In the industry for 9 years and with McKinstry for 7 years.



## BRIAN GOLDCRUMP, PE | Whole Systems Technical Study Director, Energy Analysis Lead

### WHY BRIAN?

- ✓ Brian is an experienced mechanical engineer with expertise in decarbonizing buildings, portfolios, and campus systems. Brian's technical mindset enhances the planning process by creating innovative solutions.
- ✓ Brian has a long track record of team empowerment, unifying a wide range of experts and interested parties by proactively communicating and streamlining the project process.

### BRIAN'S ROLE

As Technical Study Director and Modeling Lead, Brian oversees the core team of experts developing the City of Louisville Decarbonization Plan. In addition, Brian will identify and integrate the scientific, engineering, and technical resources necessary to conduct a feasible and effective decarbonization plan.

### SELECT PROJECT EXPERIENCE

**Seattle University Decarbonization Study, Seattle, WA** – Project manager and technical lead for decarbonization "Zero Over Time" roadmap for Seattle University's buildings. The campus includes 26 buildings with various heating configurations and electrification opportunities/challenges. Approach consists of electrical load reduction measures as a first step to cost-effectively implement electrification while minimizing electrical upgrades. The study includes cost estimating and coordination with Seattle U decision-makers.

**California State University Decarbonization Study; CA\*** – Developed framework for decarbonizing all 23 campuses in the CSU system. Focused on campus-wide heating systems, including assessing infrastructure and developing phased carbon reduction strategies. The process will be used by each CSU campus as they determine how to decarbonize their specific campus.

**Washington State University Carbon Reduction Planning; WA\*** – Project manager and technical lead for study to determine how to reduce campus carbon emissions and comply with Clean Buildings legislation most cost-effectively. Study involved detailed Level 2 energy audits of five campus buildings, totaling 550,000 sf. The decision-making metric for the study was EUI reduction per dollar. The study also included coordination with the WA Dept of Commerce, cost estimating, and constructability review. The results were extrapolated across WSU's 10M+ sf of buildings to determine the overall costs of compliance.

\*Denotes completed at previous firm.

### EDUCATION

Cal Poly San Luis Obispo, BS, Mechanical Engineering

### ACCREDITATIONS

PE Mechanical, OR, CO (pending)  
Building Energy Modeling Professional (BEMP),  
ASHRAE  
LEED AP, United States Green Building Council

### TENURE

In the industry for 12 years and with McKinstry for 1 years.

# Project Team



## BRAD LILJEQUIST, LFA | Director of Zero Carbon Roadmap Innovation & Leadership

### WHY BRAD?

- ✓ Brad's 30+ years of creating Earth-positive buildings and communities give Brad a pragmatic, yet creative approach to delivering deeply sustainable and functional buildings as he contributes key insights and improvements to projects.
- ✓ Brad excels at providing zero energy design leadership and process management, nature-based systems and services design, user load reduction, and zero energy specific integrated design.

### BRAD'S ROLE

Brad is a nationally respected leader in decarbonization, well known for both thought leadership and achieving actual results. A serial climate solutions innovator, he is now dedicated to accelerating decarbonization via EPC.

### SELECT PROJECT EXPERIENCE

**Salt Lake City School District 2027** - Comprehensive Zero Over Time roadmap for the District to achieve full Zero Carbon performance in their facilities by 2040, including facility electrification over five phases., \$29.5M, 2025

**Seattle Central College Campus District Energy Feasibility Study, Seattle, WA** - EcoDistrict to serve over 500,000 sq. ft. of mixed-use developments and existing campus infrastructure. The initial study and assessment included a full-energy analysis, as well as thermal and energy performance modeling of a baseline system and a district energy plant with heat recovery systems. The study and future EcoDistrict will determine strategies to lower electricity cost and potential carbon emissions.

**South Landing Catalyst, Spokane, WA** - Led Zero Carbon strategy for world's largest dual certified Zero Energy and Zero Carbon building, heated and cooled by an advanced all electric district energy system, \$8.3M, 2020

**South Lake Union Energy District, Seattle, WA** - 1.4M sq. ft. sewage/thermal heat recovery study adding biotech and affordable housing in the heart of Seattle, 2020

### zHome 10-unit Townhome Community\*

Developer of the first multi-family zero energy project in the United States certified by the International Living Future Institute.

### Living Community Challenge, Worldwide, Seattle, WA\*

While at the Int'l Living Future Institute, Brad was launch director for the Living Community Challenge, considered to be the most stringent green community standard in the world.

\*Denotes completed at previous firm.

### EDUCATION

University of Washington, Evans School of Public Policy and Governance, Master's, Master of Public Administration, Environmental Policy, 1993

Georgetown University, Bachelor's, History, 1988

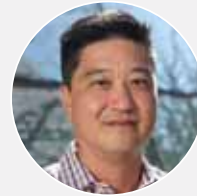
### ACCREDITATIONS

USGBC LEED Accredited Professional (LEED AP)

Living Future Accredited

### TENURE

In the industry for 34 years and with McKinstry for 4 years.



## DONALD CHUNG | Distributed Energy Resource Expert

### WHY DONALD?

- ✓ McKinstry's Colorado renewables team leader, Donald is highly successful at achieving his clients' financial and renewable energy goals through negotiating, developing, and managing the execution of solar projects.
- ✓ Donald is a seasoned solar professional, with extensive tenure at NREL as well as utility solar and solar manufacturing - regularly leaning in with key insights.

### DONALD'S ROLE

Donald will lead holistic energy strategies for maximizing Louisville's renewables approach, focusing on onsite solar, utility provided renewables, and energy storage.

### SELECT PROJECT EXPERIENCE

#### Array Of DER Projects Including:

**Town of Basalt, Basalt CO** -Renewables Director for solar and battery energy storage feasibility study identifying and characterizing 530kW of solar projects.

**City of Lakewood, Lakewood, CO** - Renewables Director for solar feasibility study identifying and characterizing 2MW of solar projects.

**Colorado School of Mines, Golden, CO** - Renewables Director for solar feasibility study and subsequent 1.4MW solar portfolio.

**City and County of Denver, Denver, CO** - Renewables Director for 5.8MW distributed community solar garden and EVSE program.

**Denver Public Schools, Denver, CO** - Renewables Director for 5MW solar portfolio deployed across 17 sites.

**Northwest Colorado Regional Solar and Resiliency Project, Craig, Steamboat, Yampa, Hayden, & Oak Creek, CO** -Renewables Director for solar and storage feasibility study and subsequent 2MW solar portfolio.

**City of Phoenix Water Services Department, Phoenix, AZ\*** - Development manager for 6.25MW utility-owned, customer-sited microgrid.

**US Marine Corps Expeditionary Energy Office, Washington, DC\*** - Project leader for innovative off-grid DER and demand management technology study.

\*Denotes completed at previous firm.

### EDUCATION

University of Michigan, MBA

University of California - Berkeley, M.S. Environmental Engineering

Duke University, B.S. Civil and Environmental Engineering

### TENURE

In the industry for 16 years and with McKinstry for 2 years.

# Project Team



## MARTIN BEGGS, PVIP | Renewable Energy Engineer

### WHY MARTIN?

- ✓ Martin has over a decade of work experience in the solar industry, installing, managing, designing and developing solar PV and energy storage projects, primarily ranging from 5kW to 5MW.
- ✓ Martin brings a patient, can-do presence to solar design and development that is contagious and calming.

### MARTIN'S ROLE

As Senior Energy Engineer with a focus in Renewable Energy, Martin will take the lead on technical development, design and modeling of Solar PV & Energy Storage solutions. He will coordinate and collaborate with project teams, utilities, jurisdictions, technical consultants and product vendors to identify renewable energy applications that are best suited to each project site.

### SELECT PROJECT EXPERIENCE

**Denver Public Schools, CO** - 5MW rooftop solar portfolio at 17 sites

**Fremont RE-2 School District, CO** - 500kw ground mount solar

**Northwest CO Regional Solar Resiliency Project, CO** - 15 sites in Hayden, Yampa, Craig, Steamboat Springs, and Oak Creek; Ground-mount, roof-mount and battery storage Town of Basalt, CO - Solar and Storage Project.

**Huerfano County, CO** - 33 building energy performance contract. \$2-\$3 million construction contract pending.

**Regis Jesuit High School; Aurora, CO** - 3 sites, 500 kW-DC solar roof mounted

**City of Fort Collins; Fort Collins, CO** - 2 sites, 1,100 kW-DC solar ground mounted

**City of Durango, CO** - Senior Energy Engineer / Renewable Specialist for Phase I EPC

**City of Boulder; Boulder, CO** - 13 sites, 2.7 MW-DC, roof, ground & canopy mounted

**City of Fort Collins; Fort Collins, CO** - 1 site, 1.0 MW-DC, single-axis tracker

**City of Golden; Golden, CO** - 2 sites, 81 kW-DC, roof mounted

**Denver Housing Authority Community Solar; Aurora, CO** - 1 site, 2.0 MW-DC, single-axis tracker

**Hyde Park Electric Department; Hyde Park, VT** - 1 site, 1.4 MW-DC, ground mounted

**Stowe Electric Department; Stowe, VT** - 1 site, 1.3 MW-DC, ground mounted

### EDUCATION

University of California, Davis, B.S., Environmental Biology and Management

### ACCREDITATIONS

NABCEP Certified PV Installation Professional (#091209-10)  
Residential Wireman, State of Colorado (#600076)

### TENURE

In the industry for 14 years and with McKinstry for 3 years.



## SARAH MOORE, PE | Engineering Director, Building Electrification

### WHY SARAH?

- ✓ Sarah is a superb engineer, specializing in existing buildings, including electrification. She leads McKinstry's electrification engineering team, and will bring her deep knowledge and expertise to bear on Louisville's diverse buildings.
- ✓ Sarah is particularly skilled at thoughtful process management, and will help the team ask and answer the right questions in the right sequence.

### SARAH'S ROLE

Sarah will provide engineering direction for the building electrification assessments

### SELECT PROJECT EXPERIENCE

**Salt Lake City School District Electrification Pilot Schools, UT** - Sarah managed the initial concept as well as detailed design for converting two 50,000 square foot schools from natural gas based heating and cooking to electric. In an innovative approach, one school will be fully electrified, while the other will retain its gas boiler for limited peaking needs, reducing construction cost. Construction commenced this summer.

**Laird Norton Properties Decarbonization Study/Electrification Plan, WA** - Sarah managed the development of a portfolio-wide decarbonization roadmap for this private real estate trust. The study included properties in Denver and elsewhere in the Rockies. The study also included an electrification assessment of the US Bank Tower in Boise - the largest office building in Idaho.

**Seattle Central College Electrification Study, Seattle, WA** - Sarah was the mechanical engineering manager for an electrification study of over 500K sq. ft. of existing campus buildings and infrastructure. The initial study and assessment included a full-energy analysis, as well as thermal and energy performance modeling of a baseline system and a district energy plant with heat recovery systems. This study identified a cost-effective pathway for reducing the College's building carbon footprint by an astounding 92%.

**Washington State Public Health Lab Electrification** - Sarah directed engineering of this groundbreaking electrification project, which converted this major facility from gas-fired steam based heat to fully electric, open loop ground source heat pump based heating. This project, which starts construction this fall, reduces the Lab's CO2 generation by 87% - saving 550 MT CO2e annually.

**McKinstry Electrification Predesign Tool** - Sarah is the creator of McKinstry's proprietary electrification predesign tool, which facilitates the assessment of various electrical, mechanical, design temperature, delivery, structural, and financial elements of building electrification.

### EDUCATION

Trinity College - Hartford, BS, Mechanical Engineering, 2003

### ACCREDITATIONS

Mechanical PE, Colorado and Washington  
ASHRAE Building Energy Modeling Professional (BEMP)

LEED Accredited Professional  
RESET® Air Accredited Professional

### TENURE

In the industry for 18 years and with McKinstry for 5 years.

# Project Team



## DAVID ZILIS, PE | Electrification Engineer

### WHY DAVID?

- ✓ Experienced mechanical design engineer with expertise in building energy use and problem solving with highly complex projects.
- ✓ Ability to develop and implement compound solutions, along with an ability to lead cross-functional teams.

### DAVID'S ROLE

As a Mechanical Engineer, David is responsible for the development of detailed mechanical drawings and specifications and designs systems based on existing field conditions, overlaying code requirements as they apply.

### SELECT PROJECT EXPERIENCE

**Salt Lake City School District 2027** -Comprehensive Zero Over Time roadmap for the District to achieve full Zero Carbon performance in their facilities by 2040, including facility electrification over five phases., \$29.5M, 2025

**Denver International Airport, CO** -Project engineer for 8.5 million sq. ft. decarbonization and energy efficiency project. \$82 M project.

**Denver City and County, Denver, CO** - Project engineer for an Investment Grade Audit (IGA) of 22 facilities across 1.9M square feet within the City.

**Colorado School of Mines, Golden, CO** - Project engineer for a campus-wide energy audit and to develop a phased approach to decarbonization and energy efficiency. McKinstry performed a complete lighting and water audit and identified many facility improvement measures in three main categories: lighting retrofits, water conservation retrofits, and mechanical retrofits. \$8.5 M

**John Madden Company - Construction, Greenwood Village, CO** - Design Engineer for decarbonization and energy efficiency project consisting of two six-story office buildings totaling 414,000 sq. ft. and is the largest project to be financed through Colorado's PACE program.

**University of Utah - Health Science Campus Transformation Design-Build Project, Salt Lake City, UT** - Design Engineer for decarbonization and energy efficiency project consisting of the construction of three new buildings (totaling almost 800,000 sq. ft. ) to replace three existing buildings. McKinstry completed development and design in over 25 buildings and a central chilled water plant to improve energy efficiency, reduce peak capacity and allow the new buildings to come online using existing infrastructure for less than half the cost of adding new capacity.

### EDUCATION

University of Colorado, Bachelor's, Mechanical Engineering/Applied Mathematics, 2015

University of Colorado, Master's, Mechanical Engineering

### ACCREDITATIONS

Professional Engineer CO

### TENURE

In the industry for 10 years and with McKinstry for 4 years.



## XIA FANG, PE, CEM, BEMP | Efficiency Strategies And Estimating

### WHY XIA?

- ✓ Xia's expertise has supported many municipalities, schools, universities, and commercial customers by using her experience and knowledge of auditing, energy modeling and HVAC systems to develop high performance projects.
- ✓ Xia has a hands on understanding based on years of experience delivering decarbonization - she regularly provides HVAC estimating for the Golden office.

### XIA'S ROLE

Xia will provide two main roles on the project - assessing deep efficiency measures (aside from electrification and renewables) and local estimating expertise.

### SELECT PROJECT EXPERIENCE

**John Madden Company - Construction, Greenwood Village, CO** - Principle Engineer for decarbonization and energy efficiency project consisting of two six-story office buildings totaling 414,000 sq. ft. and is the largest project to be financed through Colorado's PACE program.

**City of Broomfield, CO** - Principle Engineer for the Development of Investment Grade Audit (IGA) for the City of Broomfield.

**Broomfield High School - Broomfield, CO** - Principle Engineer for a 240,988 SF existing facility, underwent a major renovation. New HVAC equipment was installed and pneumatic controls were upgraded to direct digital controls. Lighting was also upgraded to LED throughout the facility.

**BVSD - Technical Energy Audits, Boulder, CO** - Technical Energy Audits (TEA) for Boulder High School, Broomfield Heights Middle School, and Centaurus High School.

**Colorado School of Mines, Golden, CO** - Xia led this Colorado School of Mines campus-wide energy audit. McKinstry performed a complete lighting and water audit and identified many facility improvement measures in three main categories: lighting retrofits, water conservation retrofits, and mechanical retrofits. \$8.5 M

### EDUCATION

Colorado State University, Master's, Mechanical Engineering, 2000

University of Shanghai for S&T, Bachelor's, Thermal Energy Engineering, 1997

### ACCREDITATIONS

12438, Certified Energy Manager

Building Energy Modeling Professional

0039750, Professional Engineer, Colorado

### TENURE

In the industry for 22 years and with McKinstry for 7 years.

# Project Team



## PAUL HIGHLEY, P.E., LEED AP | Electrical / Electric Vehicle Engineering

### WHY PAUL?

- ✓ Paul is a deeply experienced electrical engineering director, bringing over 25 years of electrical engineering experience in delivering complex electrical solutions.
- ✓ Paul is one of McKinstry's core technical leaders in decarbonization, including complex electrical vehicle infrastructure, distributed energy resources, and electrical capacity of existing building electrification.

### PAUL'S ROLE

As electrical engineering manager, Paul will oversee all facets of the electrical scope, with direct involvement on EV and electrical capacity assessments.

### SELECT PROJECT EXPERIENCE

**Salt Lake City School District Decarbonization Roadmap** Paul directly provided a ROM level assessment of the electrical capacity (transformers, panels, utility connections, etc) of 40 facilities to eliminate natural gas (HVAC and cooking), while adding solar and reducing electrical loads through efficiency. This was a very complex scenario, where electrical loads were both increasing and decreasing through various decarbonization activities.

**King County, WA Fleet/Employee EV Charging** Paul managed the concept and detailed design for fleet electrification – included 64 Level 2 charger at five buildings at three sites. Included directional boring to install underground wiring, evaluation of transformer and service capacity.

**King County Bus Electrification Test Pilot** Paul managed the concept and detailed design for this groundbreaking EV bus test facility. This project tests three different charger/bus combinations to inform ultimate fleet selection for 1000s of EV buses. Included major electrical feed and transformer, underground duct banks, structural and civil work. McKinstry also installed this system.

**Global Online Retailer EV Delivery Fleet Prototype Charging Facility** Paul directly led the concept and detailed design for this facility, the first for this major confidential client, which will charge its new electric delivery van fleet. Includes 36 level 2 and two level 3 480v DC fast chargers (Siemens) Evaluated three different approaches: in slab underground conduit and wire, overhead busway, overhead pipe and wires. Landed on overhead busway, suspended chargers. McKinstry then constructed this system. Paul is now working on a second facility for this client.

**360 Electric Vehicle Components Assessment** Paul has personally created a McKinstry-proprietary analysis tool of all EV infrastructure available, ideal applications, pricing etc. – this will enable us to thoroughly and quickly assess Louisville's ideal systems.

### EDUCATION

University of Idaho, Bachelor's, Science, Electrical Engineering, 1996

### ACCREDITATIONS

Electrical PE in 49 states including CO

LEED Accredited Professional (LEED AP)

### TENURE

In the industry for 26 years and with McKinstry for 9 years.



## JOHN KEARNS, BEMP, EIT, CEM | Energy Analysis

### WHY JOHN?

- ✓ John leverages keen abilities in modeling and knowledge of building systems to evaluate the performance of design solutions.
- ✓ John began his career delivering energy efficiency for existing public sector buildings – he now brings this expertise to his analysis work.

### JOHN'S ROLE

John will be responsible for reviewing utility usage, communicating key performance indicators, and supporting energy and financial analysis of ECMs.

### SELECT PROJECT EXPERIENCE

**Seattle University Campus Decarbonization Roadmap, Seattle, WA** - John is providing modeling for a roadmap to zero carbon over time for campus facilities at Seattle University that will consider the decarbonization opportunities and challenges for the campus. Supported campus energy and emissions utility data analysis and benchmarking and decarbonization measure development. High level energy savings and life cycle cost analysis will be performed, and information from the study will be used to generate a long-term Zero-Over-Time strategy.

**King County Administration Building, Courthouse, & Correctional Facility, Seattle, WA** - Level II ASHRAE Energy Audits for three large (>250,000 sf) King County buildings in downtown Seattle. Supported energy benchmarking and analysis of the existing sites, energy audit of existing building systems (mechanical, plumbing, envelope, lighting, etc.), and identified all cost-effective ECMs available. Provided compliance documentation for the Seattle Building Tune-Up program across all three buildings.

**Unico Financial Center & Puget Sound Plaza, Seattle, WA** - John provided modeling for WA and SEA Clean Buildings Performance Standards compliance strategies for two high-rise office towers in downtown Seattle. Both buildings provided unique opportunities for energy savings and required different solutions towards meeting their energy and carbon goals. Supported whole building energy modeling to baseline existing performance and estimate impact of proposed energy efficiency measures. Supported the development of phased implementation strategies and assisted in life cycle cost analysis of recommendations.

### EDUCATION

Seattle University, B.S, Mechanical Engineering, 2016

University of Washington, M.S, Mechanical Engineering, 2018

### ACCREDITATIONS

Building Energy Modeling Professional (BEMP)

Engineer in Training (EIT)

Certified Energy Manager (CEM)

### TENURE

In the industry for 6 years and with McKinstry for 5 years.

# Project Team



## NICK EDNEY, CPENG | ELECTRICAL VEHICLE INFRASTRUCTURE

### WHY NICK?

- ✓ Whether upgrading the efficiency of a massive mine on the Australian Outback, or reengineering the value chain for utility renewables, Nick brings a yin/yang of deep engineering and financial knowledge to creating deep decarbonization solutions.
- ✓ Nick helps lead McKinstry's vehicle electrification infrastructure efforts and supports the DER assessments.

### NICK'S ROLE

Nick will provide the vehicle electrification infrastructure, vehicle selection, and miscellaneous gas equipment electrification parts of the scope, as well as supporting the electrical capacity assessment of the electrification study and DER scope. She will work closely with Xia and David on ground-truthing local labor pricing via Denver area contractors.

### PROJECT EXPERIENCE

**City and County of Denver Vehicle Electrification Program** Included assessment and design of infrastructure, transformers, and charging units in existing settings. Included Chargepoint Level 2 and 3 480v fast chargers.

**Miscellaneous EV charging infrastructure** Array of chargers in complex existing environments (parking garages, bus stations, etc.) including Sema Connect and Zefnet.

**Denver Public Schools Phase 2 Decarbonization program** Implementation of facility recommendations, including lighting and misc efficiency upgrades.

**Seattle Central College Electrification Study** Nick served as the senior electrical engineer, assessing needed electrical upgrades.

**Pecan Branch Wastewater Treatment Plant; Georgetown, TX** Nick was the electrical engineer overseeing the design of the expansion of the existing treatment plant for the City of Georgetown, Texas.

**Avista Smart Cities Micro-Transactive Grid, Spokane, WA** Nick served as electrical engineer for an Avista Utilities/McKinstry project to test out a grid on the Washington State University Spokane campus that deploys both solar and battery storage assets in a way that will test reactive components of a Smart Grid within a close proximity of about five buildings on the campus. The grid will leverage SCADA, distribution management systems, spiral optimizer, microgrid controller, and Meter Riva system to optimize the utilization of distribution generation and load assets to achieve the program's goal of a "shared energy economy".

### EDUCATION

University of Melbourne, Bachelor's, Bachelor of Science, Electrical Engineering, 2009

University of Melbourne, Bachelor's, Bachelor of Commerce, Finance, 2009

### ACCREDITATIONS

Chartered Professional Engineer, Australia

### TENURE

In the industry for 12 years and with McKinstry for 5 years.



## MARLA COREY-LOIOLA | Senior Estimator

### WHY MARLA?

- ✓ Marla is a professional estimator with over 35 years of experience. Her only focus at McKinstry is to estimate the cost of materials and labor on the repair and replacement of MEP equipment on existing buildings for McKinstry clients. In one month, she typically provides estimates on 25+ projects—giving our clients the ability to know the true fluctuation in material and equipment cost and product lead time. Given the current volatile supply chain, her expertise will be of great importance in providing accurate cost estimates.

### MARLA'S ROLE

Marla is responsible for the management of McKinstry's estimating department and leads the preparation of estimates, budgets and proposals. She will work closely with Xia and David on ground-truthing local labor pricing via Denver area contractors.

### PROJECT EXPERIENCE

**Salt Lake City School District Electrification Pilot Schools; Salt Lake City, UT** - Provided construction estimates for the electrification of two elementary schools, including heat pump, structural, electrical service, and distribution system upgrades.

**Seattle Central College Electrification Study; Seattle, WA** - Provided ROM estimates for electrical capacity and HVAC electrification.

**University of Washington Medical Center; Seattle, WA**—Estimator for multiple decarbonization and energy efficiency project; Ongoing

**Naval Base Kitsap-Bangor, Puget Sound Energy; Silverdale, WA**—Lead estimator for project that included HVAC, lighting, and plumbing upgrades, AMI meter upgrades, pool heat recovery, and HVAC controls optimization across multiple buildings on base; 2022

**Green River College OEB Building; Auburn, WA**—Estimator for upgrades included a new main service panel, lighting, automatic lighting controls, convenience power, and mechanical equipment connections; 2019

**Employment Security Department Solar PV, WA State Department of Enterprise Services; Olympia, WA**—Estimator for Solar PV installation at Maple Park Building; 2019

**Snohomish County, Phase 5; Everett, WA**—Estimator for decarbonization and energy efficiency project including correcting the electrical distribution of the Wall & Oakes Jail, replacing its jail security system and replacing the rooftop HVAC unit on the Medical Examiner building; 2018

### EDUCATION

Associated Builders and Contractors, Estimating Coursework

### ACCREDITATIONS

Estimating Classes - Associated Builders and Contractors

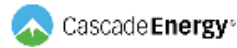
### AFFILIATIONS

American Society of Professional Estimators, Member

### TENURE

In the industry since 1982 and with McKinstry since 2015.





## Peter Sharp CEM



### Strategic Energy Management (SEM) Coach

Peter Sharp is an experienced SEM coach who works with industrial customers in Xcel Energy's service territories in Colorado and Minnesota. He has worked with both commercial and industrial customers on energy-saving projects for the past 12 years, including in the refrigerated warehousing, bottle and can manufacturing, and wastewater markets. Peter has a keen understanding of the challenges operations personnel face and understands how to incorporate energy-saving changes that will contribute to a company's success.

#### Highlights

- Extensive experience leading sector-specific SEM cohorts, including for customers in the indoor agriculture and water/wastewater industries.
- 12 years of experience implementing Xcel Energy's demand-side management (DSM) programs, including both technology-specific programs (lighting, commercial refrigeration), study-based programs (ASHRAE-level audits), and holistic programs (Strategic Energy Management).

- Led energy scans to identify no- and low-cost energy-saving opportunities, analyzing a variety of systems, including compressed air, centrifugal loads, HVAC & process cooling equipment, and lighting systems.
- Helped tailor and deliver SEM training workshops for more than 20 customers. Experience applying and innovating participatory learning techniques to get participants engaged, contributing, and working with each other.
- Helped utilities recruit dozens of ideal participants into SEM cohorts by identifying indicators of SEM success.
- Performed 1,000+ technology-specific assessments and 100+ ASHRAE Level 1 Audits with savings in excess of 5 GWh achieved in some program years.
- Experience promoting energy-efficiency programs via trade partners/contractors, vendors, and direct to end users.
- Led presentations to customers, trade partners, and industry professionals discussing DSM program design and product offerings.

#### Projects

- Xcel Energy, program management support and SEM coaching for 30 sites
- Kroger, retrofit of cooler case lighting, 30 sites, c90,000 lamps
- Ball Metal Beverage Packaging, installation of 1,250hp air compressor
- Molson Coors, installation of 60+ VFDs on new production line
- Columbia Care, retrofit of c4,500 HID grow lights with LED fixtures
- Amcor, installation of Air Recovery System in blow molding process

#### WORK HISTORY

- 2018 – Present  
**SEM Coach**  
Cascade Energy
- 2010 – 2018  
**Energy Advisor**  
Franklin Energy Services
- 2005 – 2010  
**Owner/Operator**  
Elite Blasting

#### EDUCATION

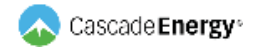
**Bachelor of Manufacturing Systems Engineering,** University of the West of England (UK), 1997

#### CERTIFICATIONS

- Certified Energy Manager (CEM), 2010

#### AFFILIATIONS

- Association of Energy Engineers (AEE)



## Giulia Pollastri



### Project Engineer

Giulia Pollastri is an experienced chemical and process engineer with a deep understanding of heavy industry and operations. In her current role, Giulia works directly with industrial-sector customers to assess their facilities and operations to identify and quantify opportunities for improving energy efficiency. She provides high quality technical engineering services for multiple utility demand-side management programs, including those of Xcel Energy.

#### Highlights

- Extensive experience in refinery and wastewater operations through several years of technical support roles at the Livorno Refinery in Italy.
- Led multiple customers through Xcel Energy's Strategic Energy Management (SEM) program, providing treasure hunts, system assessments, data collection, and energy savings calculations.
- Experience working with a variety of industrial-sector customers, including upstream, midstream, and downstream oil and gas; wastewater and drinking water treatment plants; and food manufacturing.

- Experience in providing customers continuous support during project implementation and, once in operation, obtaining available incentives from the utility provider.
- Experience optimizing energy savings for a variety of industrial equipment types, including pumps, compressors, coolers, and heat exchangers.
- Skilled technical communicator, able to communicate effectively across all levels of an organization to resolve complex technical issues.

#### Skills

- MS Word, Excel, PowerPoint
- FMEA & HAZOP Analysis
- Advanced Process Controls
- Project Management
- Lean Six Sigma Yellow Belt
- Italian (fluent)

#### Projects

- **Xcel Energy**, Strategic Energy Management (SEM) program delivery
- **Xcel Energy**, project assessments for 10 customers.
- **Xcel Energy**, Wastewater SEM, bottom-up calculations for blower upgrade
- **Xcel Energy**, Upstream VRUS VFD energy study
- **Xcel Energy**, compressed air energy study
- **Rocky Mountain Power**, oil refinery wastewater plant design review for energy efficiency.
- **Energy Smart Industrial**, refrigeration energy study and modeling

#### WORK HISTORY

- 2021 – Present  
**Project Engineer**  
Cascade Energy
- 2017 – 2021  
**Production Engineer and Junior Process Engineer**  
Eni S.p.A – Livorno Refinery
- 2017  
**QC Senior Lab Analyst**  
Philip Morris International (Bologna)

#### EDUCATION

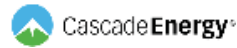
**Master Thesis**, Mixed Culture Syngas Fermentation  
Technical University of Denmark

**MS**, Chemical and Process Engineering  
Bologna University, 2016

**BS**, Chemical and Biochemical Engineering  
Bologna University, 2014

#### PUBLICATIONS

*Exploitation of Mixed Cultures in the Fermentation of Syngas for the Production of Biomethane*, master thesis, 2016



## John Rosenblum PhD



### Industrial Energy and Water Efficiency Engineer

John Rosenblum brings 30 years of experience and expertise in industrial water and energy efficiency as an independent consultant. His focus is combining analyses of operational data, utility billings, and site-specific conditions to identify the cost-effective benefits of deep water and energy efficiency improvements.

#### Highlights

- Skilled at working with client engineering teams to identify design improvements that cost-effectively integrate production process requirements with plant utilities infrastructure.
- Experience with a broad range of industries and production processes, including both large and small municipal wastewater treatment plants, semiconductor manufacturing, metal-finishing, laundries, wineries, dairies, canneries, frozen foods, carbonated and natural beverages, meat packing, food bio-gums, petrochemicals, and cruise ships.

- Effectively identifies process-control and equipment improvements to reduce energy costs while improving effluent quality and regulatory compliance for municipal and industrial wastewater treatment plants.
- Experience leading the water/wastewater element of many corporate sustainability evaluations for new facilities and production expansions.
- PhD studies focused on the thermodynamics of energy production and use of solar cogeneration and its cost-effective integration with water and energy efficiency.

#### Projects

- Identified **savings of 47% in electricity costs** (\$960,000/yr from efficiency and \$600,000/yr from increasing cogeneration), plus **51% in natural gas costs** (\$400,000/yr) for four Southern California wastewater treatment plants (57 MGD).
- Worked with one of the largest municipal water systems in the nation to identify process and contractual issues causing financial losses in biogas production and conversion to renewable natural gas (RNG) and how to overcome them.
- Evaluated cost savings and greenhouse gas reductions in steam and gas operations for a major North American meat manufacturer (estimated **35% reduction in gas use**).
- Completed process water efficiency evaluations and pilot projects at hi-tech facilities in Silicon Valley, CA. Confirmed the technical and economic feasibility of water efficiency in meeting new wastewater-discharge mass limits.

#### WORK HISTORY

- 2021 – Present  
**Industrial Energy/Water Efficiency Engineer**  
Cascade Energy
- 1990 – 2021  
**Industrial Water and Energy Efficiency Consultant**  
Self-employed
- 1987 – 1990  
**Senior Facilities Engineer**  
National Semiconductor

#### EDUCATION

- PhD**, Civil Engineering  
Stanford University, 1986
- MS**, Environmental Engineering  
Technion – Israel Institute of Technology, 1978
- BS**, Civil Engineering  
Technion – Israel Institute of Technology, 1976

# References



## CITY AND COUNTY OF DENVER

**Contact:** Johnathan Rogers | Renewable Energy Specialist

**Phone Number:** 203.912.4664

**Email:** johnathan.rogers@denvergov.org



### RELEVANCE TO LOUISVILLE

McKinstry has a long-term partnership with the City and County of Denver that has included an Energy Master Plan, 100% Renewable Energy Roadmap, full decarbonization audit of 2M square ft and a current on-call Distributed Energy Resources contract. Our team will leverage this local experience and lessons learned to directly apply to this City of Louisville project.

“Willingness to be flexible to help create a complex, but highly impactful project for the Denver community.”

—Jonathan Rogers, Renewable Energy Specialist, City and County of Denver



## DENVER PUBLIC SCHOOLS

**Contact:** Trena Marsal | Executive Director

**Address:** 900 Grant St., Denver, CO 80203

**Phone Number:** 720.423.4011

**Email:** trena\_marsal@dpsk12.net



### RELEVANCE TO LOUISVILLE

McKinstry has a long-term partnership with Denver Public Schools that has a comprehensive decarbonization audit and implementation across several million square feet of downtown buildings. In addition, the McKinstry team has assisted in installing over 8MW of solar PV to offset load across the District. Our team will leverage this local experience and lessons learned to directly apply to this City of Louisville project.

“I am so thankful for our partnership with McKinstry!”

—Trena Marsal, Executive Director of Facility Management, Denver Public Schools



## SALT LAKE CITY SCHOOL DISTRICT

**Contact:** Paul Schulte | Executive Director of Auxiliary Services

**Phone Number:** 801.874.8367

**Email:** paul.schulte@slcschools.org



### RELEVANCE TO LOUISVILLE

Salt Lake City School District has similar aggressive decarbonization targets as City of Louisville. McKinstry provided the district with an initial decarbonization phase resulting in a 30% CO2 reduction.

“McKinstry has been a great holistic partner in achieving the District's decarbonization goals.”

—Paul Schulte Executive Director of Auxiliary Services Management, Salt Lake City School District

# Cost Proposal

## Cost Proposal

The proposed fee for this project is **\$ 265,840**. The fee covers the Project and Deliverables Scope as described in the RFP. The summary breakdown of fees is provided below, broken up by Phase as defined in our Project Approach section. The level of detail represented by this fee assumes this project is the step prior to project implementation. Our scope includes energy/utility cost impacts, as we believe financial analysis used for decision-making should include this component.

We are very happy to decrease or increase scope and effort of work desired based on Louisville's evolving perspectives on the project. McKinstry and the City of Louisville could collaborate during the interview, contracting, and/or stakeholder engagement process to refine the scope and cost of work deliverables as needed, to ensure we ultimately provide the most pertinent level of detail that results in an actionable and realistic roadmap to project implementation.

As a local design-build firm with extensive experience in decarbonization delivery, McKinstry is also happy to investigate the option of crediting the cost of this decarbonization study within a future construction project, should the City choose to contract with McKinstry for the implementation of the recommended measures.

Task	Description	Task Total Price
Phase 1	Information Gathering	\$35,100
Phase 2	Analysis	\$139,140
Phase 3	Decarbonization Roadmap (Includes all meetings and presentations)	\$76,600
Add-On 2	Electrical load reduction and efficiency measures 2	\$15,000
<b>TOTAL PROJECT COST</b>		<b>\$265,840</b>
Add-On 1	Detailed water and wastewater treatment analysis 1	\$55,000

### ADD-ON SERVICE NOTES

- Our base scope includes electrification of the space heating and domestic water heating systems in the three water/wastewater plants. This additional scope includes our partners Cascade Energy, who have recently completed the SEM audit for these buildings. It includes Cascade's expertise related to the process loads of the water/wastewater plants, and analysis for electrification and load reduction of those loads. The level of detail in Cascade's scope is negotiable.

### REIMBURSABLES

All reimbursables for the outlined scope are included. Any additional scope items added via change order may require additional reimbursable expenses.

### ASSUMPTIONS AND EXCLUSIONS

- Design is not included. Neither concept narratives nor detailed design drawings are included.
- Diagrammatic markups and equipment specification details for recommended equipment will be included.
- Detailed energy modeling is not included. Energy calculations will be done via spreadsheet calculations.
- Cost estimating is being done at a Rough Order of Magnitude (ROM) level.
- One (1) person performing building walk throughs for six (6) days total.
- Operations and Maintenance (O&M) scope is not included.
- All meetings and presentations will be conducted virtually, unless indicated otherwise in the Scope of Work.
- Costs assume all bi-weekly meetings, staff interviews, department and/or executive management team presentations, and final Board presentations will be conducted virtually.
- Costs assume there will be an in-person kick-off with key City stakeholders and (2) in-person City Council presentations.

### PIGGYBACKING

McKinstry would be delighted to extend these contract terms to other local government entities, with the understanding that scope and cost refinements would be required based on the specific buildings and needs of the jurisdiction.

### MCKINSTRY & CASCADE HOURLY RATES

The Rate table represents the work set forth in the City of Louisville Decarbonization RFP, the proposal received in response, and the Contract Documents.

The hourly service rate shall be inclusive of all costs, including mileage and/or per diem.

Employee Title McKinstry	Hourly Rate*
Director of Engineering	\$223
Engineering Manager	\$162
Sr Design Engineer	\$162
Lead Design Engineer	\$128
Building Performance/Design Project Engineer	\$104
Sr Acct Exec - Energy	\$127
Sr Energy Engineer	\$130
Employee Title Cascade Energy	Hourly Rate
Senior Engineer III	\$216
Engineer III	\$210
SEM Coach II	\$190
Engineer II	\$175
Program Specialist	\$130

\*Valid until 12/31/2022

# Cost Proposal

## Hours for Project

Decarbonization Task or Milestone	Total Proposed Hours
<b>Phase 1: Audit</b>	<b>308</b>
<b>Data Gathering</b>	0
Utility Data Review	6
Compile all data	4
Carbon savings potential	10
Drawing Review & Existing System Documentation	52
Previous Study Review	25
Electrical capacity matrix	10
Understand and document recent upgrades	6
<b>City/McKinstry team value workshop and prep</b>	<b>32</b>
<b>Measure Ideation</b>	0
Mechanical measures	39
DER/Microgrid/district	24
PV	32
Misc Equipment	12
Fleet	18
<b>Site Visits</b>	0
Onsite assessments	26
Debrief/Info Organization	12

Decarbonization Task or Milestone	Total Proposed Hours
<b>Phase 2: Analysis</b>	<b>873</b>
<b>Measure Refinement/Scoping</b>	0
Mechanical/electrification measures	254
DER/Microgrid/district	72
PV	49
V2G	28
Demand Response/Load shedding	20
Misc Equipment	24
Fleet	72
<b>Technical Analysis - Energy Calcs</b>	0
Load reduction measures	0
Mechanical measures	32
DER/Microgrid/district	12
PV	6
Demand Response/Load shedding	12
Misc Equipment	12
Fleet	8
<b>Utility Coordination</b>	0
Rate Schedules	5
Peak demand reduction savings	5
Renewable programs	4
<b>Financial Assessment</b>	0
Cost Estimating	122
Supply chain impacts	8
Measure operating expense benefit	24
GHG cost effectiveness (GHG reduc/\$)	8
Non-energy cost savings	48
Social cost of carbon/Carbon tax implications	8
Grant analysis	40

Decarbonization Task or Milestone	Total Proposed Hours
<b>Phase 3: Roadmap and Documentation</b>	<b>256</b>
<b>System Documentation</b>	0
Mechanical measures	54
DER/Microgrid	16
PV	18
Demand Response/Load shedding	14
Misc Equipment	12
Fleet	12
Building reports	62
Final report	22
Develop timeline for implementation	28
Final presentation prep	18
<b>Major Meetings</b>	<b>107</b>
Dept/Exec Mgmt Presentations	12
City Council Presentations	12
Board Presentations	12
Bi-weekly City team meetings	44
Staff Interviews	12
Facilities Interviews	15
<b>Add Scope: Load Reduction Measures</b>	<b>105</b>
Phase 1	31
Phase 2	56
Phase 3	18
Total	105
<b>Total</b>	<b>1,649</b>

**SUBJECT:**           **ORDINANCE NO. 1855, SERIES 2023 – AN ORDINANCE  
AMENDING CHAPTER 5.08 OF THE LOUISVILLE MUNICIPAL  
CODE CONCERNING ART GALLERY PERMITS – 2<sup>nd</sup> READING  
PUBLIC HEARING (advertised *Daily Camera* 8/6/23)**

**DATE:**               **AUGUST 15, 2023**

**PRESENTED BY:**   **GENNY KLINE, DEPUTY CITY CLERK / SECRETARY, LOCAL  
LICENSING AUTHORITY**

**SUMMARY:**

On June 2, Governor Polis signed HB23-1061 Permitting a Retail Establishment to Serve Complimentary Alcohol Beverages at a Place of Business allowing for consumption only on the premises, for up to 24 special events per year. This bill amended state statute which previously limited this type of permit to Art Galleries. The Louisville Municipal Code needs to be amended to include this new license type.

Retail establishments now allowed to apply for this new permit include:

- Art Galleries
- Any other Retail Establishment that:
  - has no more than 25 employees
  - has retail sales of no more than \$5M
  - is in the primary business of selling goods or services to the public
  - has a physical location in Colorado
  - derives less than 50% of gross sales from the sale of food
  - does not sell firearms, motor vehicles, marijuana, gas or diesel fuel
  - does not educate students from K-12 or provides childcare
  - is not a convenience store

While not detailed in the ordinance, the rules outlined in state statute will be detailed on the permit application, including:

Permit holders shall not:

- Directly or indirectly sell alcohol or hold any other type of liquor license
- Permit anyone under 18 to serve the alcohol or permit anyone between 18 and 21 to serve without the presence of a supervisor
- Serve alcohol for more than 4 hours in a 24 hour period or serve between 2am and 7am
- Serve alcohol more than 24 days per year
- Charge an entrance fee or cover charge in exchange for offering complimentary alcohol beverages
- Allow more than 250 people (or the fire code maximum) to be on the premises at one time when alcohol is being served

**SUBJECT: ORDINANCE NO. 1855, SERIES 2023**

**DATE: AUGUST 15, 2023**

**PAGE 2 OF 2**

- Serve malt liquor in a serving size larger than 12 ounces
- Serve wine in a serving size larger than 5 ounces, but it may be mixed with non-alcoholic beverages to make a larger serving size
- Serve spirits in a serving size larger than 1.5 ounces, but it may be mixed with non-alcoholic beverages to make a larger serving size
- Serve premixed alcohol beverage drink in a serving size larger than 12 ounces
- Violate section 44.3.901 including serving a visibly intoxicated person and taking any alcohol beverage off premises

This request was presented to the Local Licensing Authority at their July 24, 2023 meeting and they expressed no concerns regarding this new license. The State has set the fee for this application at \$25.00

**FISCAL IMPACT:**

None.

**PROGRAM/SUB-PROGRAM IMPACT:**

This ordinance supports the Clerk’s Office goals by helping to ensure effective and efficient governance as it relates to liquor licensing.







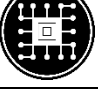

**RECOMMENDATION:**

Approve Ordinance No. 1855 and set the application fee at \$25.00.

**ATTACHMENT(S):**

1. Ordinance
2. Draft Retail Establishment Permit Application

**STRATEGIC PLAN IMPACT:**

<input type="checkbox"/>	 <b>Financial Stewardship &amp; Asset Management</b>	<input checked="" type="checkbox"/>	 <b>Reliable Core Services</b>
<input type="checkbox"/>	 <b>Vibrant Economic Climate</b>	<input type="checkbox"/>	 <b>Quality Programs &amp; Amenities</b>
<input type="checkbox"/>	 <b>Engaged Community</b>	<input type="checkbox"/>	 <b>Healthy Workforce</b>
<input type="checkbox"/>	 <b>Supportive Technology</b>	<input type="checkbox"/>	 <b>Collaborative Regional Partner</b>

**ORDINANCE NO. 1855  
SERIES 2023**

**AN ORDINANCE AMENDING CHAPTER 5.08 OF THE LOUISVILLE MUNICIPAL  
CODE CONCERNING ART GALLERY PERMITS**

**WHEREAS**, City Council previously adopted Section 5.08.076 of the Louisville Municipal Code authorizing the Louisville Local Licensing Authority to issue art gallery permits to art galleries serving complimentary alcohol beverages; and

**WHEREAS**, the Colorado Legislature recently enacted House Bill 23-1061, which broadened the art gallery permit to allow most retail establishments to obtain the permit if the establishment conducts business at a physical building in Colorado, sells goods or services to the public at the location, and derives less than fifty percent of the establishment's gross sales of goods and services from the sale of food; and

**WHEREAS**, the retail establishment permit is not available to retail establishments that sell firearms, motor vehicles, marijuana, gasoline or diesel fuel; educate students from kindergarten to twelfth grade or provide child care; or are convenience stores; and

**WHEREAS**, City Council desires to amend Section 5.08.076 to reflect the changes set forth in House Bill 23-1061.

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LOUISVILLE, COLORADO:**

**Section 1.** Section 5.08.076 of the Louisville Municipal Code is hereby amended to read as follows (words to be added are underlined; words to be deleted are ~~stricken through~~):

**Sec. 5.08.076. Art gallery Retail establishment permits.**

A. The local licensing authority is authorized to issue a retail establishment ~~an art gallery~~ permit to a person operating a retail establishment ~~an art gallery~~ that offers and serves complimentary alcohol beverages for consumption only on the premises in accordance with the requirements and limitations set forth in section 44-3-424, C.R.S. A retail establishment ~~An art gallery~~ that wishes to offer complimentary alcohol beverages shall submit an application for a retail establishment ~~an art gallery~~ permit to the local licensing authority annually. The local licensing authority may reject the permit application if the applicant fails to establish that it is able to offer complimentary alcohol beverages without violating the provisions of section 44-3-424, C.R.S. or creating a public safety risk to the neighborhood.

B. A retail establishment ~~An art gallery~~ permit may be suspended or revoked if the permittee violates any of the provisions of section 44-3-424, C.R.S.



or any rule adopted thereunder. The local licensing authority shall conduct a hearing with regard to any such alleged violations in accordance with the requirements of this Code, the authority's bylaws and rules of procedure, and section 44-3-601, C.R.S.

**Section 2.** If any portion of this ordinance is held to be invalid for any reason, such decision shall not affect the validity of the remaining portions of this ordinance. The City Council hereby declares it would have passed and approved this ordinance and each part hereof irrespective of the fact that any one part be declared invalid.

**Section 3.** The repeal or modification of any provision of the Municipal Code of the City of Louisville by this ordinance shall not release, extinguish, alter, modify, or change in whole or in part any penalty, forfeiture, or liability, either civil or criminal, which shall have been incurred under such provision, and each provision shall be treated and held as still remaining in force for the purpose of sustaining any and all proper actions, suits, proceedings, and prosecutions for the enforcement of the penalty, forfeiture, or liability, as well as for the purpose of sustaining any judgment, decree, or order which can or may be rendered, entered, or made in such actions, suits, proceedings, or prosecutions.

**Section 4.** All other ordinances or portions thereof inconsistent or conflicting with this ordinance or any portion hereof are hereby repealed to the extent of such inconsistency or conflict.

**INTRODUCED, READ, PASSED ON FIRST READING, AND ORDERED PUBLISHED** this 1<sup>st</sup> day of August, 2023.

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Dennis Maloney, Mayor

ATTEST:

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Meredyth Muth, City Clerk

APPROVED AS TO FORM:

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Kelly PC  
City Attorney

**PASSED AND ADOPTED ON SECOND AND FINAL READING**, this 15<sup>th</sup> day of August, 2023.

\_\_\_\_\_  
Dennis Maloney, Mayor

ATTEST:

\_\_\_\_\_  
Meredyth Muth, City Clerk



# Retail Establishment Alcohol Permit Application

This application must be submitted to the City of Louisville **60 days in advance of the first serving date.**

This permit is only available for the following retail business types:

- Art Gallery
- Retail Establishment that:
  - Is not a convenience store
  - Has a physical location and is in the primary business of selling goods or services to the public
  - Has no more than 25 employees
  - Has retail sales of no more than \$5,000,000 annually
  - Derives less than 50% of gross sales from food
  - Does not sell firearms, motor vehicles, marijuana, or gas/diesel fuel
  - Does not educate students in grades K-12 or provide childcare

<input type="checkbox"/> State Application Fee - \$72.00 Annual Fee		<input type="checkbox"/> City of Louisville Application Fee – \$25.00	
<input type="checkbox"/> Attach a copy of premises proof of ownership or lease documents <input type="checkbox"/> Attach a diagram of the proposed premises <input type="checkbox"/> Attach a copy of Premises Control Plan outlining how the premises will be controlled to ensure compliance with liquor code provisions including restricting sales to minors and intoxicated persons as well as ensuring that the participants cannot leave the premises with open containers or alcohol beverages. <input type="checkbox"/> Proof of server training for the owner or manager is required by the Louisville Local Licensing Authority			
<b>Applicant Information</b>			
Legal Business Name			
Trade Name or D/B/A Name			
Business Type (i.e. real estate office, clothing store)			
City of Louisville Sales Tax License Number			
Business Phone Number	Email Address		
Premises Address			
City	State	Zip Code	
Mailing Address			
City	State	Zip Code	

**Service Dates (Limit 24 days) - 4 hours per day - No service between 2am and 7am**

<b>Date</b>	<b>Date</b>	<b>Date</b>
Hours From:                      To:	Hours From:                      To:	Hours From:                      To:
<b>Date</b>	<b>Date</b>	<b>Date</b>
Hours From:                      To:	Hours From:                      To:	Hours From:                      To:
<b>Date</b>	<b>Date</b>	<b>Date</b>
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<b>Date</b>	<b>Date</b>	<b>Date</b>
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<b>Date</b>	<b>Date</b>	<b>Date</b>
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<b>Date</b>	<b>Date</b>	<b>Date</b>
Hours From:                      To:	Hours From:                      To:	Hours From:                      To:
<b>Date</b>	<b>Date</b>	<b>Date</b>
Hours From:                      To:	Hours From:                      To:	Hours From:                      To:

**Oath of Applicant**

I declare under penalty of perjury in the second degree that this application and all attachments are true, correct, and complete to the best of my knowledge. I also know that it is my responsibility and the responsibility of my agents and employees to comply with the provisions of the Colorado Liquor or Beer Code and Colorado Liquor Rules which affect my permit.

Authorized Signature

Title

Date

**Report & Approval of City Licensing Authority**

The foregoing application has been examined and the premises, business conducted and character of the applicant are satisfactory, and we do hereby report that such license, if granted, will comply with the provisions of Title 44 C.R.S and Liquor Rules. **Therefore this application is approved.**

Local Licensing Authority For

**City of Louisville**

Date

Signature

Title

Date

## Retail Establishment Alcohol Permit Limitations

The following limitations for the Retail Establishment Permit can be found in Colorado Revised Statute.

Permit holders shall not:

- Directly or indirectly sell alcohol or hold any type of liquor license
- Permit anyone under the age of 18 to serve the alcohol or permit anyone between the ages of 18 and 21 to serve alcohol without the presence of a supervisor
- Serve alcohol for more than 4 hours in a 24 hour period or serve between 2am and 7am
- Serve alcohol more than 24 days per year
- Charge an entrance fee or cover charge in exchange for offering complimentary alcohol beverages
- Allow more than 250 people (or the fire code maximum) to be on the premises at one time when alcohol is being served
- Serve malt liquor in a serving size larger than 12 ounces
- Serve wine in a serving size larger than 5 ounces, but it may be mixed with non-alcoholic beverages to make a larger serving size
- Serve spirits in a serving size larger than 1.5 ounces, but it may be mixed with non-alcoholic beverages to make a larger serving size
- Serve a premixed alcohol beverage drink in a serving size larger than 12 ounces
- Violate section 44.3.901 including serving a visibly intoxicated person and taking any alcohol beverage off premises

I have read and acknowledge the above Retail Establishment Permit Limitations.

I acknowledge that a violation of a limitation specified above by the licensee, or the licensee's employees or agents, shall be the responsibility of the licensee.

I acknowledge that holding a Retail Establishment Permit subjects the licensee to the same enforcement provisions, including possible suspension and revocation, as otherwise apply to other license type holders and are imposed by the local licensing authority.

I acknowledge that the local licensing authority may conduct a hearing with regard to any violations of Louisville Municipal Code, the authority's bylaws and rules of procedure and section 44-3-601 C.R.S.

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Applicant Signature

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Date

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Applicant Printed Name

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Name of Establishment