



**CITY OF DULUTH**  
**REQUEST FOR PROPOSALS FOR**  
**PREDESIGN SERVICES FOR**  
**CONSOLIDATED MAINTENANCE FACILITY**

**RFP NUMBER 24-99697**

**ISSUED 9/11/2024**

**PROPOSALS DUE 10/30/2024**

**SUBMIT TO**

**CITY OF DULUTH**  
**ATTN: PURCHASING DIVISION**  
**CITY HALL, ROOM 120**  
**411 WEST 1ST STREET**  
**DULUTH, MN 55802**

## PART I - GENERAL INFORMATION

**I-1. Introduction.** The City of Duluth seeks proposals from architecture/engineering firms for professional design services to develop and complete a predesign report that will identify requirements and opportunities for the construction of a consolidated maintenance facility.

The predesign phase will evaluate and determine the facility needs of multiple distinct City construction/maintenance divisions currently operating out of separate areas and buildings; determine site and location requirements for the facility and operations; and produce conceptual facility options.

**I-2. Project Overview** This project aims to improve the operational and financial efficiency of multiple City of Duluth divisions through the construction of a consolidated maintenance facility. The City divisions that will be integrated into the facility include Property & Facilities Management, Park Maintenance, Fleet Services, Street Maintenance, Radio Shop and Signal Operations.

The focus of this RFP is the predesign phase and will consist of reviewing the current plant operations, determining requirements for new space, equipment, and site location, and will culminate in conceptual facility options with market-based construction cost estimates that are produced in collaboration with the City's construction manager-as-agent.

While the award for these services will be limited to the predesign phase, proposals shall define the scope and extent of professional design services necessary for all phases of the project, to include design development, construction documents and bidding, and project administration. The City of Duluth reserves the right to select a different design firm upon completion of this predesign phase, though the intent is to select one A/E firm for the entire project.

Additional detail is provided in **Part IV** of this RFP.

**I-3. Calendar of Events.** The City will make every effort to adhere to the following schedule (all times are central time):

Activity	Date
Pre-proposal Conference (optional)	9/26/2024
Deadline to submit Questions via email to <a href="mailto:purchasing@duluthmn.gov">purchasing@duluthmn.gov</a>	10/4/2024
Answers to questions will be posted to the City website no later than this date.	10/17/2024
Proposals must be received in the Purchasing Office by 4:00 PM on this date.	10/30/2024
Interviews are tentatively scheduled for the week of:	11/11/24-11/15/24

**I-4. Rejection of Proposals.** The City reserves the right, in its sole and complete discretion, to reject any and all proposals or cancel the request for proposals, at any time prior to the time a contract is fully executed, when it is in its best interests. The City is not liable for any costs the Bidder incurs in preparation and submission of its proposal, in participating in the RFP process or in anticipation of award of the contract.

**I-5. Pre-proposal Conference.** The City will hold an optional pre-proposal conference at 11:00 am on Thursday, September 26, 2024. Interested Bidders can attend via MS TEAMS through the link available at <https://www.duluthmn.gov/purchasing/bids-request-for-proposals/> or in-person at City Hall, 411 West 1<sup>st</sup> Street, Duluth, MN in the Lakeside Conference Room 430. A site tour will follow the conference; attendance at the site tour is not mandatory.

**I-6. Questions & Answers.** Any questions regarding this RFP must be submitted by e-mail to the Purchasing Office at [purchasing@duluthmn.gov](mailto:purchasing@duluthmn.gov) **no later than** the date indicated on the Calendar of Events. Answers to the questions will be posted as an Addendum to the RFP.

**I-7. Addenda to the RFP.** If the City deems it necessary to revise any part of this RFP before the proposal response date, the City will post an addendum to its website <http://www.duluthmn.gov/purchasing/bids-request-for-proposals/> . Although an e-mail notification will be sent, it is the Bidder's responsibility to periodically check the website for any new information

**I-8. Proposals.** To be considered, hard copies of proposals must arrive at the City on or before the time and date specified in the RFP Calendar of Events. The City will not accept proposals via email or facsimile transmission. The City reserves the right to reject or to deduct evaluation points for late proposals.

Proposals must be signed by an authorized official. If the official signs the Proposal Cover Sheet attached as Appendix B, this requirement will be met. Proposals must remain valid for 60 days or until a contract is fully executed.

Please submit one (1) paper copy of the Technical Submittal and one (1) paper copy of the Cost Submittal. **The Cost Submittal should be in a separate sealed envelope.** In addition, Bidders shall submit one copy of the entire proposal (Technical and Cost submittals, along with all requested documents) on flash drive in Microsoft Office-compatible or pdf format.

All materials submitted in response to this RFP will become property of the City and will become public record after the evaluation process is completed and an award decision made.

**I-9. Small Diverse Business Information.** The City encourages participation by minority, women, and veteran-owned businesses as prime contractors, and encourages all prime contractors to make a significant commitment to use minority, women, veteran-owned

and other disadvantaged business entities as subcontractors and suppliers. A list of certified Disadvantaged Business Enterprises is maintained by the Minnesota Unified Certification Program at <http://mnuccp.metc.state.mn.us/>. If you wish to search by NAICS code, but aren't sure which code you need, you can do a keyword search for NAICS codes at <https://www.census.gov/naics/>.

**I-10. Type and Term of Contract.** The awarded Bidder will execute an architect agreement for predesign services only, in the form of that attached as Appendix C. The term of the contract will begin once the contract is fully executed and predesign is anticipated to end by July 2025. If a site is selected during pre-design, the project could potentially be under construction during 2026-27. The selected Bidder shall not start the performance of any work nor shall the City be liable to pay the selected Bidder for any service or work performed or expenses incurred before the contract is executed. Should the City continue with the awarded Bidder beyond predesign, an amendment to the architect agreement will be executed to add any remaining phases of work to the agreement. Bidders should review the agreement and submit any questions on the agreement by the deadline for question submission.

**I-11. Mandatory Disclosures.** By submitting a proposal, each Bidder understands, represents, and acknowledges that:

- A. Their proposal has been developed by the Bidder independently and has been submitted without collusion with and without agreement, understanding, or planned common course of action with any other vendor or suppliers of materials, supplies, equipment, or services described in the Request for Proposals, designed to limit independent bidding or competition, and that the contents of the proposal have not been communicated by the Bidder or its employees or agents to any person not an employee or agent of the Bidder.
- B. There is no conflict of interest. A conflict of interest exists if a Bidder has any interest that would actually conflict, or has the appearance of conflicting, in any manner or degree with the performance of work on the project. If there are potential conflicts, identify the municipalities, developers, and other public or private entities with whom your company is currently, or have been, employed and which may be affected.
- C. It is not currently under suspension or debarment by the State of Minnesota, any other state or the federal government.
- D. The company is either organized under Minnesota law or has a Certificate of Authority from the Minnesota Secretary of State to do business in Minnesota, in accordance with the requirements in M.S. 303.03.

**I-12. Notification of Selection.** Bidders whose proposals are not selected will be notified in writing.

## **PART II - PROPOSAL REQUIREMENTS**

### Technical Proposal (do not include any costs in the technical proposal)

1. Proposal cover sheet attached as Appendix A
2. Proposal shall be limited to no more than 20 pages.
3. Cover letter that includes a description of specifically why Bidder is a good fit for this proposal and a restatement of the goals and objectives to demonstrate the Bidder's understanding of the project.
4. Scope of work envisioned, including but not limited to:
  - a. Specific objectives
  - b. Detailed deliverables
  - c. Timeline of services
5. Background of firm that demonstrates successful completion of comparable projects
6. Resumes of key personnel responsible for deliverables
7. Examples of similar project experience of team
8. Narrative description of approach and strategies to affordably design to City energy efficiency standards (*City's Owner Program Requirements* attached as Appendix D)
9. A work plan and detail on the scope of services and deliverables for the initial phase of pre-design (this can be the same as what is in the cost proposal with costs removed in the technical proposal).
10. References

### Cost Proposal (submitted in a separate sealed envelope)

11. For the pre-design phase, provide a lump sum, not-to-exceed cost including any sub-consultant fees, along with the following information:
  - a. A breakdown of the hours by task for each employee
  - b. Identification of anticipated direct expenses
  - c. Miscellaneous charges such as mileage and copies
  - d. Identification of any assumptions made while developing the cost proposal
  - e. Any cost information related to additional services or tasks, to be included as additional costs and not part of the total project cost
  - f. A work plan and detail on the scope of services and deliverables for the initial phase of pre-design, including costs.
12. For phases beyond pre-design, Bidders are to provide the same items as 11a-f above under the assumption that a site is found that will house all requirements in one location.
  - a. In addition, Bidders should provide an estimate of total design cost.

## **PART III - CRITERIA FOR SELECTION**

All accepted Technical Proposals will be reviewed by City staff and scored according to the criteria below. After technical review, Cost Proposals will be reviewed for the top three technical scored proposals. The intent of the selection process is to review proposals and make an award based upon qualifications as described therein. A 100-

point scale will be used to create the final evaluation recommendations. The factors and weighting on which proposals will be judged are:

Prior experience with similar work	35%
Qualifications of the Bidder and Personnel	20%
Work Plan/Schedule	15%
References	10%
Cost	20%

#### **PART IV – PROJECT DETAIL**

The City of Duluth seeks to consolidate four aging and undersized maintenance facilities that house multiple City divisions and a variety of vehicles and tools into one centrally located maintenance facility. These divisions include Property & Facilities Management, Park Maintenance, Fleet Services, Street Maintenance, Radio Shop and Signal Operations.

This predesign phase will analyze the current and anticipated space and equipment needs of these City of Duluth maintenance/construction divisions; identify and determine systems or opportunities for collective use of indoor office space, equipment, storage, yard/resource/materials stockpiles, and auxiliary features such as vehicle wash stations, gas stations, etc.

In addition to determining space and equipment objectives, this predesign phase will identify the overall site requirements for constructing and operating a consolidated maintenance facility that will serve the entire geography of Duluth. These site requirements are to include total acreage needed for operations, available infrastructure or potential for connecting utilities, access and proximity to transportation routes, and viable locations for adequate service response times.

These site requirements will consider the availability of real estate in Duluth, and determine whether one single facility can be developed, or if alternative ways of consolidating or reconfiguring the City of Duluth division facilities should be pursued.

After analysis of space and equipment needs, the availability of real estate, and potential proceeds from the sale of existing facilities, the predesign report will develop a comprehensive facility concept plan and project budget not-to-exceed \$75 million. This not-to-exceed budget must include the purchase of real estate, design services, construction management services, site development, facility construction, FF&E, and everything else necessary for a fully functional facility.

The architecture/engineering program provided in the predesign report shall include:

- A detailed space program using a table of space names and sizes.
- Space Needs Inventory data sheets for individual rooms
- Adjacency Diagrams showing the activity and functional relationships among the spaces.

- A listing of Furniture/Fixtures/Equipment/signage (FF&E) needs.
- Narrative descriptions of the major Architectural, Civil, Structural, Mechanical, Electrical, and
- Specialty systems that are part of the proposed project.

The City of Duluth commissioned a facility study in 2016 to evaluate the inventory and condition of these current facilities, the organizational structure, and division operations (see Appendix B). The report is a detailed analysis of both physical requirements and financial feasibility and is to be used as a reference for evaluating the current program needs. The proposed facility location utilized in this 2016 study should not be assumed as a preferred or viable option for development. A significant aspect of this new predesign study will be the evaluation of alternative sites for facility construction.

To the extent possible, this predesign study will produce several iterations of building concepts that vary in size, location, and capacity, in order for the City to identify and compare all potential scenarios for consolidating division facilities.

The selected A/E firm for this project will have close and thorough collaboration with the City's construction manager-as-agent for input of constructability and producing market-based construction cost estimates.

## **APPENDICES**

Appendix A – Proposal Cover Sheet

Appendix B – *Comprehensive Public Works Facilities Consolidation Study*

Appendix C – Architect Agreement Template

Appendix D – *City of Duluth: Owner Performance Requirements*

**APPENDIX A - PROPOSAL COVER SHEET  
CITY OF DULUTH  
RFP# 24-99697**

<b>Bidder Information:</b>	
Bidder Name	
Mailing Address	
Contact Person	
Contact Person's Phone Number	
Contact Person's E-Mail Address	
Federal ID Number	
Authorized Signature	
Authorized Signer's Name	
Title	



**APPENDIX B – 2016 COMPREHENSIVE PUBLIC WORKS FACILITIES  
CONSOLIDATION STUDY  
CITY OF DULUTH  
RFP# 24-99697**



**COMPREHENSIVE PUBLIC WORKS  
FACILITIES CONSOLIDATION STUDY**

**CONTACT US**

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## INTRODUCTION

The consolidation of various public works departments and the construction of a new facility for all the staff and equipment is a considerable undertaking for any city or public agency. Given that Duluth has several scattered sites with undersized buildings in various states of condition, a rather aged fleet and somewhat independent departments, consolidation could be both rewarding and challenging.

This study was undertaken in order to determine if it would behoove the city to take on this major effort or if it were better to remain status quo. The report has been prepared by the team of Springsted and Oertel Architects to provide the Duluth city council with the baseline information in order to assess whether or not it is prudent to pursue this city-wide reorganization and unification and, in particular, consider the cost ramifications involved.

The consulting team interviewed key staff and performed an inspection of all related city buildings and sites. This data was used to analyze the conditions and operations and then prepare this report.

As a starting point, considering all the factors involved, why would the city of Duluth venture into this consolidation of departments and the design / construction of a new central facility? Based on our viewpoint, the following would be the rational to do so:

- *This would result in improved service levels across the city.*
- *Staff would be more efficient and effective with their daily operations.*
- *There would be improved communication and cooperation between departments.*
- *There would be more sharing of equipment and less purchasing of specialized equipment.*
- *Health and safety would be improved, in sometime cases considerably.*
- *There would be a higher level of worker satisfaction.*
- *There would be a more efficient use of energy and natural resources.*
- *The fleet would retain a higher value over a longer period of time.*
- *Long term building maintenance, repairs and replacements would be greatly diminished.*
- *Environmentally, a new facility would noticeably improve site conditions and storm water quality.*
- *Over the long term, the city would be able to recover the up-front expenditures.*

The next point to make is concerning public works in general. Although it is no real surprise, public works departments do not garner the same respect and considerations from the public as do the more visible fire and police departments. Unlike the higher profile departments, public works staff, by nature, gets dirty. Uniforms are not pressed and dry cleaned but have oil and grease stains on them. Children want to be a fireman or police officer when they grow up, usually not a snow plow driver. Public works vehicles are not neatly washed after every use and they can sometimes be a nuisance.

If millions of dollars are spent in improving public works conditions and operations, educating the public would be of great value. Based on our experience, especially in a tight economy, taxpayers may balk at an undertaking such as a brand new facility. It may not need to be said, but there is an expectation that roads be cleared of snow in due time, parks clean and utility breaks attended to posthaste. Still, no medals are given for working double shifts to clear snow. Public works staff performs the day's work and park their trucks in the *garage* or, worse, on the lot.

Regardless of the level of recommendations considered, the public works departments could use the positive coverage and public awareness. Relative to a new facility to improve their work and working conditions, if nothing else, the various city departments deserve the consideration.

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## EXECUTIVE SUMMARY

The following is simply a set of lists relative to our findings and recommendations. Note that these lists simply note the highpoints and the key items involved in the assessment. Other minor considerations and comments are provided elsewhere within this report.

## FINDINGS

The following are the key items, listed in no particular order:

1. Coverage of the facility locations across the city is good, a central location with adjoining sites for streets and parks maintenance, with satellite sites on the far western and eastern portions of the city.
2. The mechanic's shop / vehicle maintenance (Fleet Services) is disjointed from all other operations, resulting in a daily back and forth of vehicles being serviced.
3. The Fleet Services building, while adequate in overall size, is configured so that proper utilization and layout is very compromised.
4. There is not enough exterior parking with the Fleet Services building.
5. The condition of the buildings varies from poor to good.
6. The organizational structure is not as streamlined as it could be.
7. Maintenance on the many of the buildings is commendable, despite age, materials and usage.
8. There is a good deal of sharing by the departments, to the extent possible. This includes site storage, equipment, and tools.
9. The age and condition of the vehicles is less than what would be recommended and less than what would be found at many other city operations.
10. Fuel is not stored on site. Operators use the local gas stations.
11. In general, there seems to be a positive, *make do with what one has* attitude within the staff.
12. Some working conditions, relative to health and air quality, are not good.
13. Brine operations are basic and could use much improvement.

To the group of us outsiders, quite familiar with a host of public works operations, the main issues we see are some very inefficient facilities and a great deal of needless double handling of equipment. The most major concerns, which hinder efficiency and optimal operational performance, are as follows:

1. There is considerable double and triple handling. One vehicle has to be moved in order to access another. Conditions are often too constrained for both people and equipment.
2. Not all the regularly used and/or diesel vehicles are stored indoors.
3. There are health and life safety concerns in some of the buildings (although make-up air units were being installed in the Streets department building when the analysis was being performed).

4. It is difficult if not impossible to thoroughly clean all the vehicles. When performed, it is extremely time consuming.
5. Many of the buildings are poor relative to energy usage, with an inability, in some cases, to make realistic changes.
6. Vehicle maintenance is detached from all other operations. While the mechanics work on the fleet, they essentially have to retrieve and deliver the vehicles back where they belong. Each trip requires the time of two people, coming and going.

## RECOMMENDATIONS

The following are the key items, listed in no particular order:

1. Store all diesel trucks and readily used smaller trucks indoors, heated or unheated, as applicable.
2. Provide an easy to use, effective, and available truck wash system for the fleet.
3. Provide adequate parking bays of a size to allow for all attached equipment and access.
4. Eliminate or reduce the amount of double and triple handling.
5. Add more daylighting for staff well-being and enjoyment and to reduce artificial lighting.
6. Provide or upgrade HVAC systems to improve air quality and health conditions at all buildings.
7. Provide controls and building systems to reduce energy consumption.
8. Consider a city-owned central fueling system.
9. Provide a more sophisticated brine making system and storage system.
10. Retain the two remote shops and use these for just the limited east/west routes and lands.
11. Provide adequately covered salt storage with ample area for mixed loads
12. Provide dedicated heavy duty storage bins, protected from snow and rain.
13. Provide for state-of-the-art technology.
14. Eliminate distance between departments by combining all departments into one new state-of-the-art facility, including the following:
  - Combining Facilities, Parks, Streets and Maintenance into one new facility.
  - Retaining the Lund site and the tree farm site, using these only for the outmost plow routes, mainly winter operations.
  - Upgrading and repairing the Lund site building, providing an adequate salt storage and making other minor improvements.
  - Selling off the properties at the existing three sites to help cover costs of a new facility.

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## OPERATIONS AND DEPARTMENTAL ANALYSIS

### ORGANIZATION

The organizational structures of Property & Facilities Management and Maintenance Operations were reviewed as part of the scope of service for this project. Specifically, we wanted to determine the following as it related to the organizational structures:

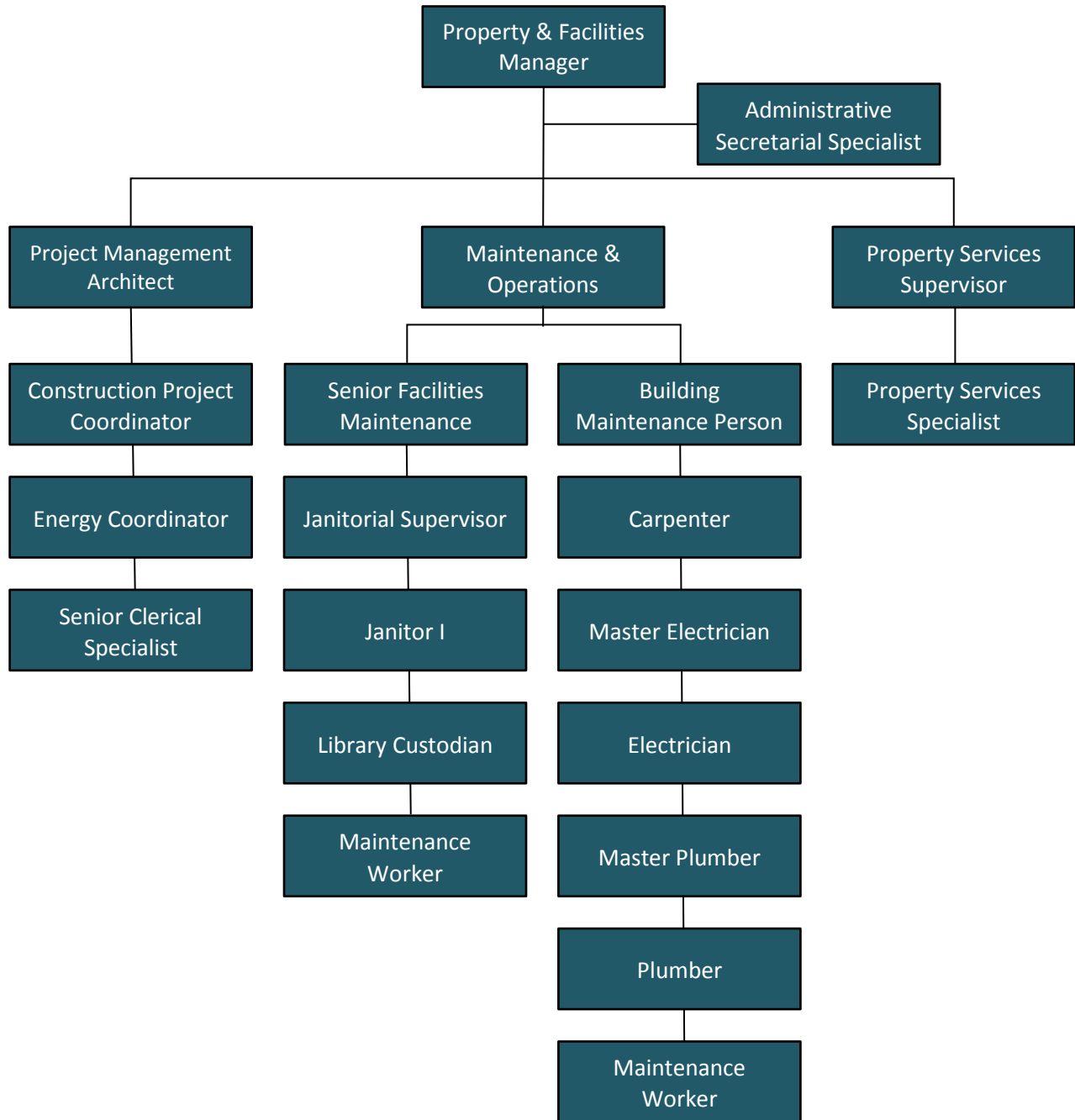
- Is the current organizational structure sound in terms of management principles and practices?
- Is the organizational management structure organized logically and does it comply with accepted standards and best practices?
- Are the roles of each department clearly established and accepted?
- Are the functions of each department organized logically and do they comply with accepted standards and best practices?

### PROPERTY AND FACILITIES MANAGEMENT

The organizational structure for Property & Facilities Management is consistent with all of the above bullet points. The reporting relationships provide for a reasonable level of control and management with no one supervisor having more direct reports and/or functions than can reasonably be managed. The functions are logically organized and associated to one another focusing on the management and maintenance of City-owned or leased facilities. The Project Management division manages the construction and energy functions, the Maintenance and Operations division is responsible for cleaning and overall maintenance, and the Property Services division manages leases and easements. This organizational chart is shown on the following page.

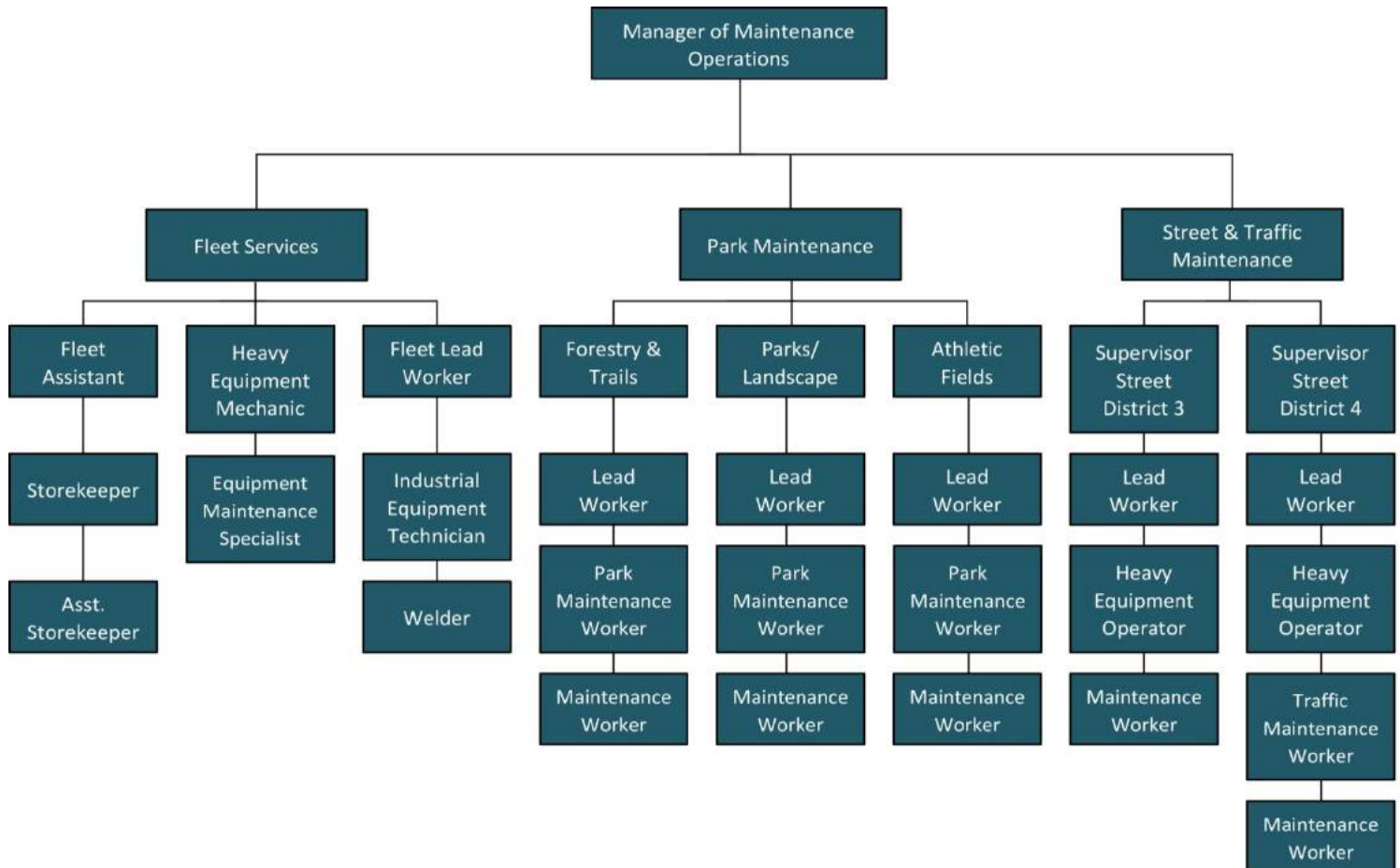


**PROPERTY AND FACILITIES MANAGEMENT**



## MAINTENANCE OPERATIONS

The organizational structure for Maintenance Operations reporting relationships provide for a reasonable level of control and management with no one supervisor having more direct reports and/or functions than can reasonably be managed. The current organizational chart for Maintenance Operations is shown below.

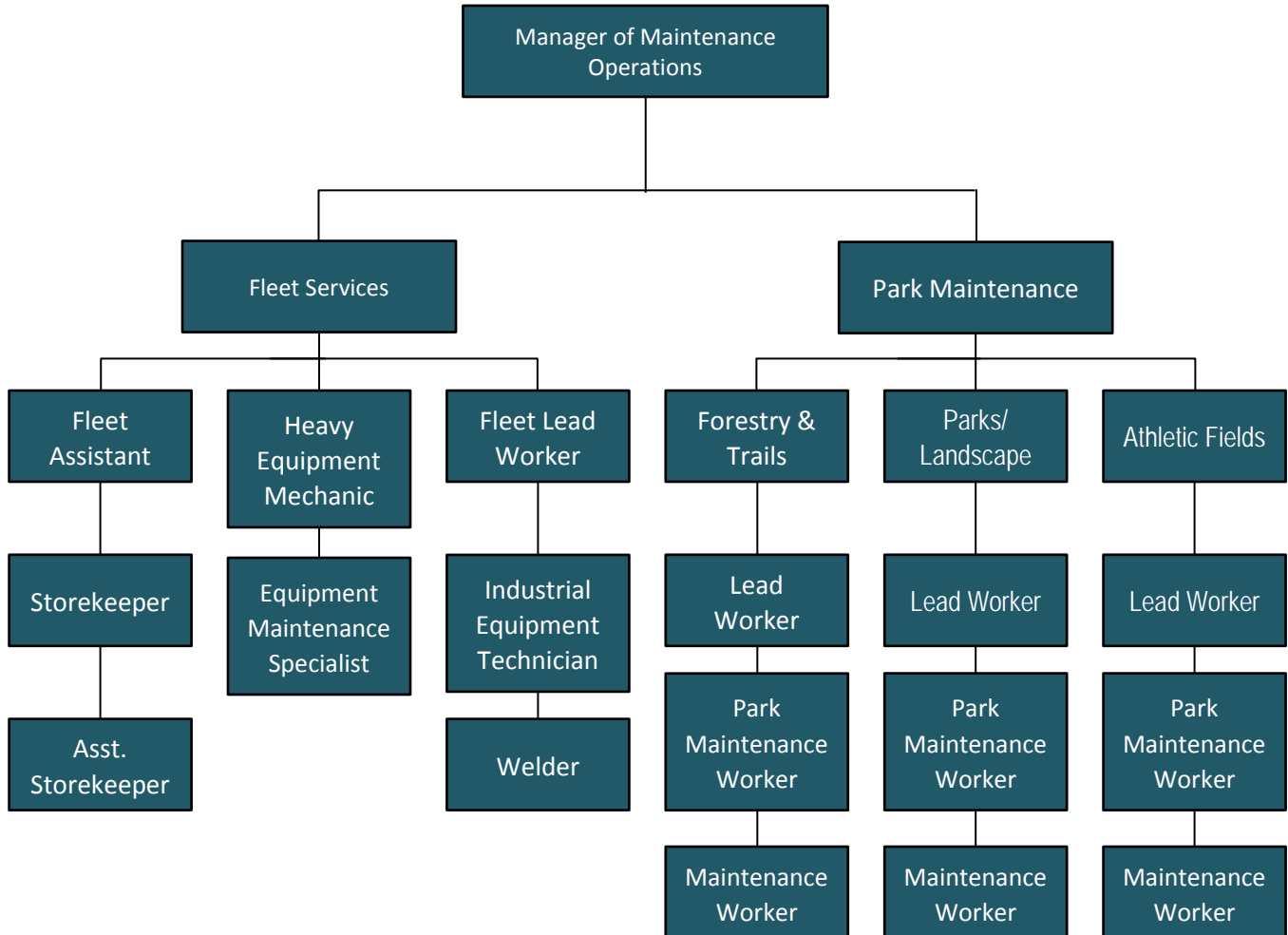


However, the organizational structure for Maintenance Operations does not provide for functions that are logically associated to one another, but rather span a range of unrelated functions. Fleet Services is responsible for the maintenance and repair of all City vehicles and equipment. Park Maintenance is responsible for the maintenance of the City's urban forest, recreation trails, parks, and athletic fields. Street and Traffic Maintenance is responsible for maintaining the City's streets, traffic signage and controls, parking meters, snow plowing, paving, and other operations primarily in the public right-of-way. It is our opinion that Street and Traffic Maintenance should be moved to the Public Works and Utilities Department where there is a more logical synergy. Much of the work done by Street and Traffic Maintenance is either related to a result of work done by Public Works such as pavement repair as a result of utility intrusions.

Fleet Services and Park Maintenance are not logically related to each other either, but they are not logically related to any City other departments either so leaving them as stand-alone departments under Maintenance Operations is acceptable.

**Recommendation: Street and Traffic Maintenance should be moved to the Public Works & Utilities Department**

**RECOMMENDED MAINTENANCE OPERATIONS ORGANIZATIONAL CHART**



## DEPARTMENTAL ANALYSES

In addition to reviewing each department's organizational structure, we reviewed and analyzed the staffing, operations, and services of the departments within Property and Facilities Management and within Maintenance Operations. This section of the report provides our findings for each of these.

### **PROPERTY AND FACILITIES MANAGEMENT**

The Property and Facilities Management Division of the Department of Public Administration is responsible for the management of all City of Duluth properties and facilities. These include City Hall, the main Library and two branch libraries, two skyways, and other City properties. In total, they manage 148 buildings comprising approximately 1,200,000 square feet, provide maintenance services to over a hundred park properties, and a diverse array of other real estate holdings within and just outside of City limits. The Division is made up of three distinct offices:

- Project Management - Responsible for the management of all capital improvement projects related to the renovation of existing facilities, construction of new facilities, and the overall management of energy consumption and energy projects within all City facilities, on building/parks pole lighting units and systems. Staff includes the City Architect, a Construction Project Coordinator, and an Energy Coordinator.
- Maintenance and Operations - Responsible for the day-to-day and long-term maintenance, repair, and physical operation of City facilities. These include over 600 pole lighting units surrounding City buildings and located in City parks. Personnel in this department are comprised of custodial staff, building maintenance staff, and construction tradesmen (plumbers, electricians, and carpenters). Additionally, they coordinate access, hours of operation, and safety for all City facilities.
- Property Services - Provides a broad array of real estate services across the City organization and to the public in general. They manage transactional elements related to City property, including: access permitting, leasing, development (of property and facilities), user group agreements, sales, and purchases. They also coordinate and support property projects and initiatives across various departments and divisions throughout the City, as well as working in partnership with contractors, community user groups and non-profits. Staff includes the Property Services Supervisor and a Property Services Specialist.

This department provides a significant array of services with a relatively lean staff. Staffing levels in Project Management and Property Services are driven by the number, type, and activity level of those departments and there are no national benchmarks to provide equitable comparisons. Given the services they provide, it is our opinion they are not overstaffed.

Staffing levels in Maintenance Operations lend themselves to comparison and there are a number of benchmarks available to use for this purpose. We reviewed and compared them to existing national benchmarks to determine if any opportunities existed to consolidate and/or reduce staffing levels as a result of consolidation into one common facility. The benchmarks used for this department was the International Facilities Management Association (IFMA) for Property and Facilities Management which is a widely used standard for building maintenance operations. Staffing levels were compared for the following positions:

- Janitors
- Electricians
- Plumbers
- Carpenters
- Generalists

The staffing level comparisons showed that each position was staffed at a level less than the benchmark would predict. The janitorial staff currently maintains approximately 349,555 square feet of City buildings with a total staff of 8.0 full time equivalents (F.T.E.s). The IFMA benchmark staffing level is 38,000 square feet/ F.T.E. which results in a predicted staffing level of 9.20 F.T.E.s or 1.20 F.T.E.s more than the current staffing level. The other positions provide services to the City's 148 building which comprise approximately 1.2 million square feet. The benchmark staffing for these projected 4.30 F.T.E. electricians or 2.30 F.T.E.s more than the current 2.0 F.T.E.s; 2.71 F.T.E. plumbers compared to 2.0 F.T.E. plumbers currently on staff; 2.34 F.T.E. carpenters compared to 1.0 F.T.E. carpenters currently on staff; and 4.88 F.T.E. generalists compared to 4.0 F.T.E. generalists currently on staff. The Total staffing level predicted by the IFMA benchmarks was 23.44 F.T.E.s which is 6.44 F.T.E.s more than the current staffing level of 17.0 F.T.E.s in this department. These staffing levels are shown in the table below.

<b>Building Janitorial</b>	<b>Area (Sq. Ft.)</b>
City Hall	127,964
Main Library	69,228
Comfort Systems	82,363
Skywalk, Branch Libraries, Washington Center	70,000
<b>Total Area sq. ft.</b>	<b>349,555</b>
<b>IFMA Benchmark Area/ F.T.E.</b>	
F.T.E. Needed at IFMA Benchmark	9.20
Current Janitorial F.T.E.	8.00
<b>Janitorial F.T.E. Under (Over) Benchmark</b>	<b>1.20</b>
<b>Building Maintenance</b>	
148 Buildings	1,200,000
<b>Electricians</b>	
<b>IFMA Benchmark area/ F.T.E.</b>	<b>279,000</b>
F.T.E. Needed at IFMA Benchmark	4.30
Current Electrician F.T.E.	2.00
<b>Electrician F.T.E. (Over) Under Benchmark</b>	<b>2.30</b>
<b>Plumbers</b>	
<b>IFMA Benchmark area/ F.T.E.</b>	<b>442,000</b>
F.T.E. Needed at IFMA Benchmark	2.71
Current Plumber F.T.E.	2.00
<b>Plumber F.T.E. (Over) Under Benchmark</b>	<b>0.71</b>
<b>Carpenters</b>	
<b>IFMA Benchmark area/ F.T.E.</b>	<b>512,000</b>
F.T.E. Needed at IFMA Benchmark	2.34
Current Carpenter F.T.E.	1.00
<b>Carpenter F.T.E. (Over) Under Benchmark</b>	<b>1.34</b>
<b>Generalists</b>	
<b>IFMA Benchmark area/ F.T.E.</b>	<b>246,000</b>
F.T.E. Needed at IFMA Benchmark	4.88
Current Carpenter F.T.E.	4.00
<b>Generalists F.T.E. (Over) Under Benchmark</b>	<b>0.88</b>
<b>Total Staffing at IFMA Benchmarks</b>	<b>23.44</b>
<b>Total Current Staffing</b>	<b>17.00</b>
<b>Total Staffing F.T.E. (Over) Under</b>	<b>6.44</b>

The staffing level difference in both individual positions and in total does not, in and of itself, indicate the department is understaffed because you need to remember the benchmark is an average based on a certain level of service. The department advised us they contract out for some services including painting, some electrical, elevator maintenance, fire systems, and other work on a case-by-case basis. The contracting of some services would explain some of the labor shortfall, however, our observations are that this department is staffed lean and produces its work at a very high level of efficiency. The lean staffing has resulted in other departments taking on projects themselves because they get tired of waiting for Property Facilities and Management to start.

Other observations include:

- Job descriptions are up to date but the description for Maintenance Worker should be amended to provide for more clarity for facilities
- A job description for a Facility Maintenance Worker should be added
- The collective bargaining agreement provides for certain seniority rights related to equipment operators referred to tool house seniority. This results in operational inefficiencies at times.
- Broader skills in maintenance workers would be beneficial and would increase productivity
- A bucket truck is needed to complete some of their work
- Building automation systems would improve building and facility operations

The consolidation into a common facility would provide benefits to this department and its operations. Currently, there is no redundancy of staff so vacations, sick leaves, and other staff vacancies place the department in a shortfall situation. A consolidated facility would enable the coordination and sharing of staff between departments enabling the allocation of staff resources to the most urgent needs.

### ***MAINTENANCE OPERATIONS***

The Maintenance Operations Division of the Department of Public Administration includes Fleet Services, Park Maintenance, and Street and Traffic Maintenance. It is responsible for the maintenance and management of all City of Duluth fleet, parks and open spaces, and maintenance of all streets within the City. The Division is made up of three distinct offices:

- Fleet Services - Responsible for the maintenance and repair of all of the City's approximate 900 vehicles and equipment
- Park Maintenance - Responsible for the maintenance of City parks including facility maintenance, ball fields, gardens, recreation trails, and urban forest
- Street and Traffic Maintenance – Responsible for street sweeping, road maintenance, curb and gutter repairs, snow and ice control, pavement markings, signage, parking meters, and alley maintenance

### ***FLEET SERVICES***

The staffing levels in Fleet Services were recently evaluated as part of an evaluation of fleet operations undertaken in 2014. The report made staffing level recommendations that are still valid today. However, our review of Fleet Services did find some areas of concern. These included:

- Job descriptions are in need of updating
- Some staff in specialty areas like transmissions could use additional skills

- Training, tools, and ventilation requirements prevent servicing hybrid vehicles, compressed natural gas (CNG) vehicles, and electric vehicles at the current facility which could limit the City's options for alternative fuel vehicles
- There is no back-up generator at the current facility so when power goes out work ceases. This can be a significant problem during weather related events.
- When other departments deliver vehicles to Fleet, they sometimes wait two hours for the vehicle to show up which is lost productive time. This is a result of Fleet being a remote facility.
- Fleet lacks a well-equipped service truck
- Lack of indoor storage space requires the parking of vehicles outside and subsequently shuffling the vehicles in and out of the building for servicing. The lost time for this shuffling is estimated to be 30 minutes at the beginning and end of each day.

Staff turnover in Fleet has included four employees in the past several years that left for positions offering better compensation.

### ***PARK MAINTENANCE***

Staffing levels in Park Maintenance include 24 full-time and 15 seasonal employees. Comparing staffing levels for park operations is one of the more difficult departments for which to make these comparisons. This comparison is further complicated here because parks typically include both operations and maintenance; however, this department is solely maintenance. Other reasons which make comparisons difficult include, but are not limited to the following:

- The number and type of part-time employees
- The number of volunteers
- The number, type, and diversity of facilities
  - Golf courses
  - Trails
  - Athletic fields (soccer, disk golf, etc.)
  - Ski hills and trails
  - Curling
  - Community centers
  - Other
- Maintenance of the urban forest
- In-house engineering staff
- Amount of work contracted out

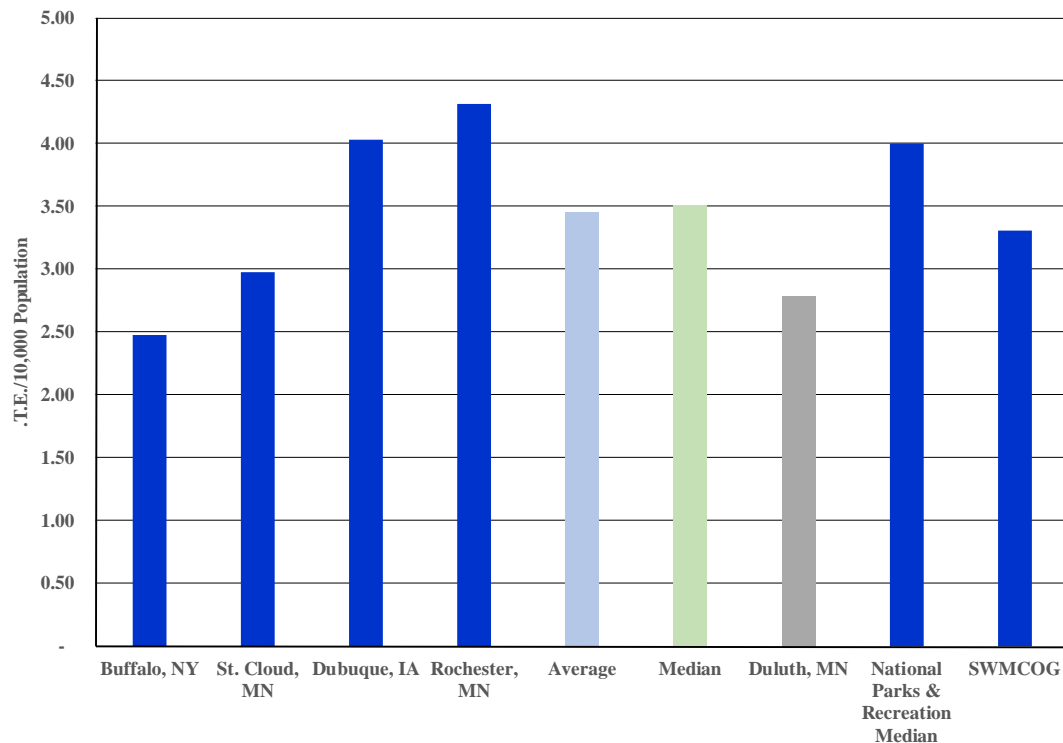
A comparison was made with several similar cities and with available regional and national standards. These included:

- Buffalo, NY
- St. Cloud, MN
- Dubuque, IA
- Rochester, MN
- National Parks & Recreation Association
- Southwest Michigan Council of Governments

This comparison reflected the wide range of staffing levels driven by the differences in department facilities, operations, and programs. Yet it does provide some insight. Park Maintenance with 24 F.T.E.s which equates to 2.79 F.T.E.s/10,000 population compares relatively favorable to Buffalo, NY which was staffed at 2.47 F.T.E.s/10,000 population and to St. Cloud, MN which was staffed at 2.97 F.T.E.s/10,000 population. However, Parks Maintenance staffing was somewhat under the average of the comparison cities which was 3.45 F.T.E.s/10,000 population, the National Parks and Recreation Association median staffing level of 4.00 F.T.E.s/10,000 population, and the average of the Southwest Michigan Council of Governments (SWMCOG) average of 3.31 F.T.E.s/10,000 population. These comparisons are shown in the table and chart below. The staffing level comparison indicates that Parks Maintenance is staffed within the range of other comparable organizations, although it is at the lower end of that staffing.

CITY	POPULATION	PARK F.T.E.	F.T.E. / 10,000
Buffalo, NY	258,703	64.00	2.47
St. Cloud, MN	66,389	19.75	2.97
Dubuque, IA	58,253	23.50	4.03
Rochester, MN	111,187	48.00	4.32
<b>AVERAGE</b>	<b>123,633</b>	<b>39</b>	<b>3.45</b>
<b>MEDIAN</b>	<b>88,788</b>	<b>36</b>	<b>3.50</b>
<b>Duluth, MN</b>	<b>86,128</b>	<b>24</b>	<b>2.79</b>
<b>National Parks &amp; Recreation Median</b>			<b>4.00</b>
<b>SWMCOG</b>			<b>3.31</b>

Comparison of Park Maintenance Staffing Levels





Other concerns we heard during our meetings and review of Park Maintenance included concerns about aged equipment especially the log truck and the chipper, each of which are 30 years old.

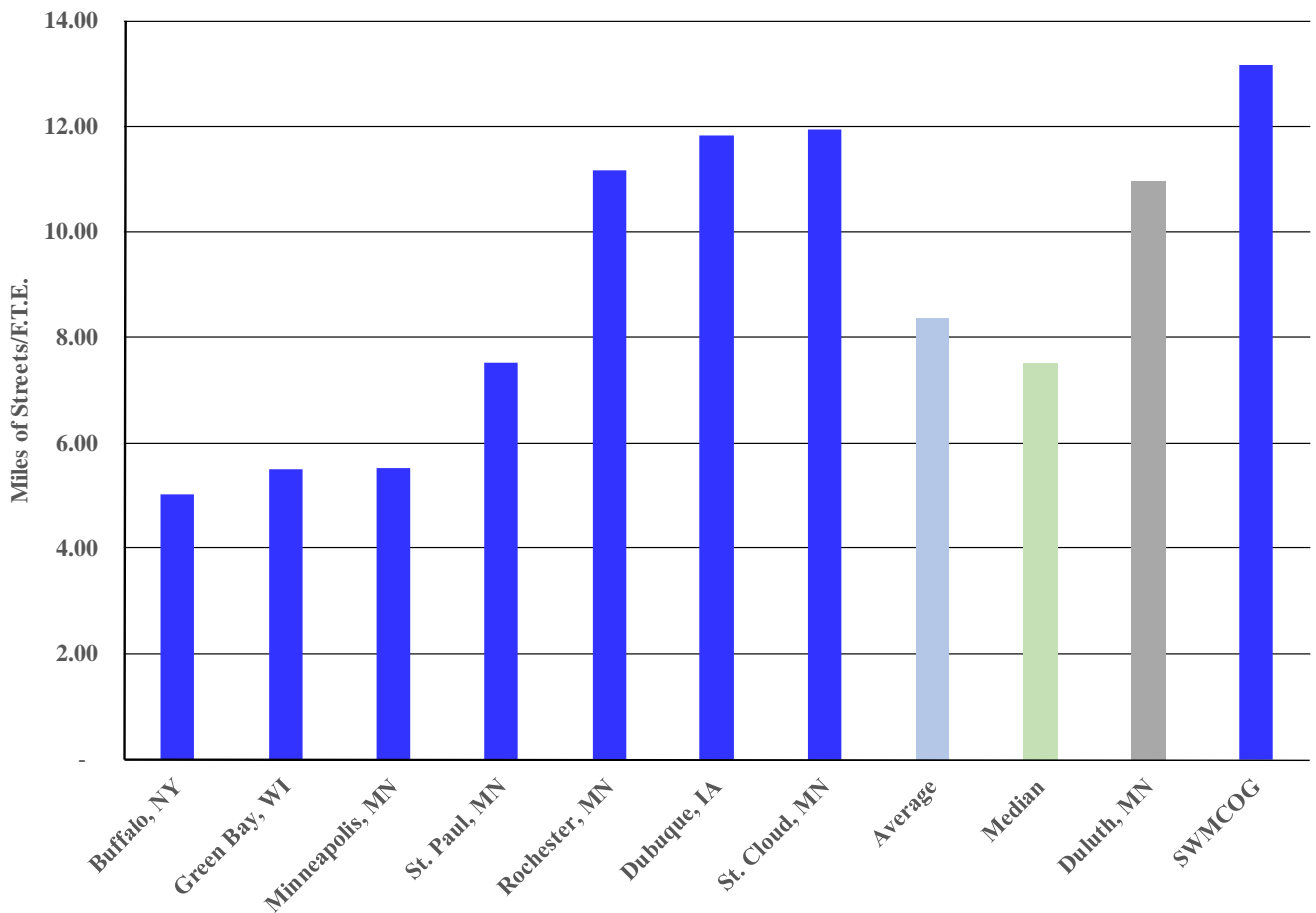
We also found that Parks Maintenance has inadequate indoor storage for equipment which results in some equipment sitting outside year round. The equipment sitting outside is rotated depending on the season with current season equipment inside. This outside storage reduces the life of the equipment and its trade-in value.

**STREET AND TRAFFIC MAINTENANCE**

Staffing in Street and Traffic Maintenance includes 47.49 F.T.E.s according to information provided to us. Staffing in this department is easier to compare with other cities because these operations tend to be more similar in their operations and responsibilities provided their climates are similar. Staffing levels in Street and Traffic Maintenance were compared to seven similar cities and to average staffing levels in the cities included in the Southwest Michigan Council of Governments (SWMCOG). Staffing levels ranged from 5.02 miles of street/F.T.E. in Buffalo, NY to 11.94 miles/F.T.E. in St. Cloud, MN. Street and Traffic Maintenance’s staffing level of 10.96 miles/F.T.E. places them above the average of 8.35 miles/F.T.E., but within the range of the comparison cities. These are shown in the table and chart below.

CITY	POPULATION	MILES OF STREETS	F.T.E.	MILES OF STREETS/F.T.E.
Buffalo, NY	258,703	632.00	126.00	5.02
Green Bay, WI	104,891	426.22	77.67	5.49
Minneapolis, MN	407,207	896.00	162.75	5.51
St. Paul, MN	297,640	851.00	113.20	7.52
Rochester, MN	111,187	533.00	47.75	11.16
Dubuque, IA	58,253	331.00	28.00	11.82
St. Cloud, MN	66,389	346.18	29.00	11.94
<b>AVERAGE</b>	<b>186,324</b>	<b>574</b>	<b>83.48</b>	<b>8.35</b>
<b>MEDIAN</b>	<b>111,187</b>	<b>533</b>	<b>77.67</b>	<b>7.52</b>
<b>Duluth, MN</b>	<b>86,128</b>	<b>520.47</b>	<b>47.49</b>	<b>10.96</b>
<b>SWMCOG</b>		<b>50.00</b>	<b>3.80</b>	

### Comparison of Street Maintenance Staffing



The employees in Street and Traffic Maintenance all have commercial driver's licenses (CDLs). In addition, staff members possess various other certifications and licenses including:

- State of Minnesota blacktop application
- 3M traffic tape
- 3M sign marking
- Loader and skid steer certification
- Pesticide licenses

These additional licenses and certifications provide a value to the City and make the employees who have attained them more valuable.

Street and Traffic Maintenance has been resourceful in its operations to accomplish its work. They exchange tandem trucks and loaders with other departments and they plow snow for the Transit Authority in exchange for storing equipment on their site. In addition, they rent equipment whose use is not sufficient to own including asphalt pavers, reclaimers and excavators when needed, saving the City the cost of full-time ownership.

This department is currently spread out between two main facilities, the 40<sup>th</sup> Avenue West Toolhouse and leased space in the MnDOT facility on Mesaba Avenue. They also utilize two satellite facilities, the Lund Toolhouse on Commonwealth Avenue in West Duluth and the Tree Farm on Riley Road in East Duluth. The geographical diversity provides some operational advantages especially the Lund Toolhouse and the Tree Farm where equipment and supplies can be stored to provide services with a faster response to the outermost areas of the City. However, the split between the MnDOT site and the 40<sup>th</sup> Avenue Toolhouse provides more of a barrier to efficiency than would be present if these two facilities were combined.

Some areas of concern identified included on-going training of employees which is limited due to lack of downtime given their staffing level and workload. Employee turnover was also a concern with employees leaving for better compensation. In addition, we age and condition of some of their equipment results in frequent breakdowns.

## FUELING

The City currently purchases motor fuels under a contract with Holiday Station stores at a cost of \$0.05 above the rack price. City vehicles fuel up at any Holiday Station store in the City. This fuel contract has the advantage of relieving the City from the need for operating its own fuel facility and having fuel available at various sites across the city where Holiday Station stores are located.

This contrasts with St. Louis County who purchases fuels for its fleet on a bulk basis operating its own fueling facilities throughout the County.

The cost of fuel purchases for the period January 1, 2015 through August 31, 2015 for each entity were compared to determine if the City could save money by including a fueling station in a proposed new consolidated maintenance facility. During this period, the City of Duluth purchased approximately 124,100 gallons of unleaded gasoline. The cost ranged from a low of \$1.66/gallon to a high \$2.33/gallon with an average cost of \$2.11/gallon as shown in the table below.

### City of Duluth, Minnesota Unleaded Fuel Purchases

MONTH	City of Duluth Gallons	City of Duluth Cost	City of Duluth Price/Gallon
January	15,918.01	\$ 26,363.45	\$ 1.66
February	14,279.64	\$ 27,891.02	\$ 1.95
March	14,673.76	\$ 32,842.36	\$ 2.24
April	14,771.05	\$ 29,894.60	\$ 2.02
May	14,673.76	\$ 32,842.36	\$ 2.24
June	16,406.91	\$ 38,155.04	\$ 2.33
July	16,691.96	\$ 38,402.75	\$ 2.30
August	16,684.39	\$ 35,761.38	\$ 2.14
<b>Total</b>	<b>124,099.48</b>	<b>\$ 262,152.96</b>	
<b>Average Price/Gallon</b>			<b>\$ 2.11</b>

St. Louis County purchased bulk fuels for its Duluth Motor Pool in February, May, and July. The total amount of fuel purchased at this fueling station was 22,750 gallons at a cost of \$47,312.60. The cost ranged from \$1.94/gallon in February to \$2.25/gallon in July with an average of \$2.08/gallon. They purchased a total of 7,000 gallons of fuel for the Jean Duluth fueling stations in May and August at a cost of \$14,970.30. The cost was \$2.16/gallon in May and \$2.09/gallon in August with an average cost of \$2.14/gallon. The overall average for both of these fueling stations was \$2.11/gallon. These are shown in the table below.

### St. Louis County Unleaded Fuel Purchases

Duluth Motor Pool	Gallons	Cost	Price/Gallon
February	8,400	\$ 16,318.38	\$ 1.94
May	6,400	\$ 13,132.16	\$ 2.05
July	7,950	\$ 17,862.06	\$ 2.25
<b>Total</b>	<b>22,750</b>	<b>\$ 47,312.60</b>	
<b>Average Price/Gallon</b>			<b>\$ 2.08</b>
<b>Jean Duluth- Unleaded Gas</b>			
	Gallons	Cost	Price/Gallon
May	5,000	\$ 10,787.50	\$ 2.16
August	2,000	\$ 4,182.80	\$ 2.09
<b>Total</b>	<b>7,000</b>	<b>\$ 14,970.30</b>	
<b>Average Price/Gallon</b>			<b>\$ 2.14</b>
<b>Total Purchases</b>	<b>29,750</b>	<b>\$ 62,282.90</b>	
<b>Average Price/Gallon</b>			<b>\$ 2.11</b>

These purchases show the City of Duluth could potentially save \$0.02/gallon (\$2.11/gallon - \$2.09/gallon = \$0.02/gallon) with its own fueling station. Based on unleaded gas purchase through August, the City could have potentially saved \$2,345 with its own fueling station. Annualizing this savings for all of 2015 would result in an estimated potential savings of \$3,518.

The City purchased approximately 112,655 gallons of diesel fuel during the period from January through August of 2015 at a total cost of \$254,620. The cost ranged from \$2.12/gallon in January and August to \$2.30/gallon in March and May with an average cost of \$2.26/gallon as shown in the table below.

### City of Duluth Diesel Fuel Purchases

MONTH	City of Duluth Gallons	City of Duluth Cost	City of Duluth Price/Gallon
January	15,062.26	\$ 31,952.48	\$ 2.12
February	16,008.79	\$ 37,549.87	\$ 2.35
March	11,106.53	\$ 26,544.85	\$ 2.39
April	12,765.76	\$ 28,200.03	\$ 2.21
May	11,106.53	\$ 26,544.85	\$ 2.39
June	14,855.61	\$ 34,015.37	\$ 2.29
July	14,627.77	\$ 32,450.52	\$ 2.22
August	17,121.54	\$ 36,362.57	\$ 2.12
<b>Total</b>	<b>112,654.79</b>	<b>\$ 253,620.54</b>	
<b>Average Price/Gallon</b>			<b>\$ 2.26</b>

St. Louis County purchased 29,001 gallons of diesel fuel for its Jean Duluth fueling station during this same period. Their costs varied from \$2.04/gallon in January to \$2.27/gallon in June with an average cost of \$2.18/gallon as shown in table below.

**St. Louis County Diesel Fuel Purchases**

Jean Duluth- Diesel	Gallons	Cost	Price/Gallon
January	6,400.00	\$ 13,055.14	\$ 2.04
March	7,000.00	\$ 15,625.48	\$ 2.23
June	7,800.00	\$ 17,683.38	\$ 2.27
August	7,801.00	\$ 16,872.01	\$ 2.16
<b>Total</b>	<b>29,001.00</b>	<b>\$ 63,236.01</b>	
<b>Average Price/Gallon</b>			<b>\$ 2.18</b>

The City of Duluth paid \$0.07/gallon more for diesel fuel than St. Louis County over this period. The potential savings for the City was approximately \$7,979 for this period and approximately \$11,969 on an annualized basis.

The potential savings for both unleaded gasoline and diesel fuel would be the sum of the potential savings on unleaded gasoline of \$3,315 and the potential savings of \$11,969 on diesel fuel for a total potential savings of \$15,487 annually ( $\$3,315 + \$11,969 = \$15,487$ ).

These savings must be weighed against the capital cost and operating costs of a fueling station in a new combined facility. The estimated capital cost of a fueling station is \$150,000 to \$200,000. The time necessary to recover just the capital costs, excluding any interest costs related to financing the assets, is approximately 9.7 years at a cost of \$150,000 and 12.9 years at a cost of \$200,000. While this is a relatively long recovery time, there would be fuel savings to the City over the remaining life of the fueling station estimated to be 20 years. In addition, there are operational benefits from a new fueling station incorporating the latest technology. These benefits include:

- Accurate reading of vehicle mileage or hours to indicate maintenance needs improving vehicle life
- Control of additives
- Dispensing fuels only to City owned vehicles by using a sensor in the vehicle
- Ability to incorporate alternative fuels

## FLEET

### TIME SAVED IN MAINTENANCE AND REPAIR OF VEHICLES AND EQUIPMENT

The maintenance and repair of equipment is performed by Fleet Maintenance. However, because Fleet Maintenance is located remote from all other City departments, vehicles and equipment must be delivered to the Fleet Maintenance facility. This requires two employees to deliver the vehicle or equipment to Fleet and two employees to pick up the vehicle or equipment when the service is completed. The lost time required for this delivery and pickup was estimated for vehicles assigned to Public Works and Utilities, Street and Traffic Maintenance, Property and Facilities Maintenance, and Parks Maintenance. The lost time was estimated using the following assumption:

- The new consolidated facility would be located on the Garfield Avenue site near the Public Works facility
- Actual distance from each current facility to Fleet
- Motorized vehicles and equipment would be serviced one time per year and would require two employees to deliver and pick up
- Non-motorized equipment would be serviced one time per year and would require one employee to deliver and pick up
- Fifteen minutes would be lost on each end of the transfer

This resulted in approximately 764 total hours lost as shown in the table below. In a combined facility, these hours would be saved and are equivalent to having an additional ½ time F.T.E on staff at no additional cost. While these hours do not result in a direct cost reduction they will result in an increase in service levels as the time can be used to perform the various tasks of each department.

DEPARTMENT	HOURS SAVED
Public Works & Utilities	263.2
Facilities Management	27.5
Parks	157.7
Street Maintenance	315.7
<b>Total Hours Saved</b>	<b>764.1</b>

In addition, because Fleet cannot store all of the vehicles it is servicing inside, it must shuttle these vehicles into and out of its facility. This results in annual lost time of approximately 0.2 F.T.E. The total lost time related to equipment servicing is equivalent to approximately 0.7 F.T.E.

### IMPROVED COORDINATION OF RESOURCES

The current dispersed locations make the coordination of resources to respond to daily and special operational needs more difficult than they would be in a combined facility. The various department managers do not have the

ability to efficiently and easily undertake joint daily planning because of their geographical separation. A joint facility would enable them to meet each day before the staff arrives to develop a plan to best undertake the needed activities through resource sharing. This would be particularly beneficial for activities including:

- Snow removal
- Responding to emergencies, natural disasters, and/or special events
- Maximizing the use of personnel during seasonal variations in work load
- Coordination and sharing of equipment resulting in less total equipment needed overall
- Covering for personnel shortfalls due to vacations, sick leave, turn over, and/or workman's compensation lost time

A joint facility would also allow for more efficient inventory control. Currently, needed inventory is stocked in each facility resulting in redundancy (the same inventory in multiple locations) of inventory and difficulty in managing the inventory. A joint facility would enable a single inventory system that could be centrally managed and maintained. This would eliminate redundancy and would also facilitate bulk purchasing which would reduce inventory costs. It would also eliminate lost inventory through the use of a central inventory management system.

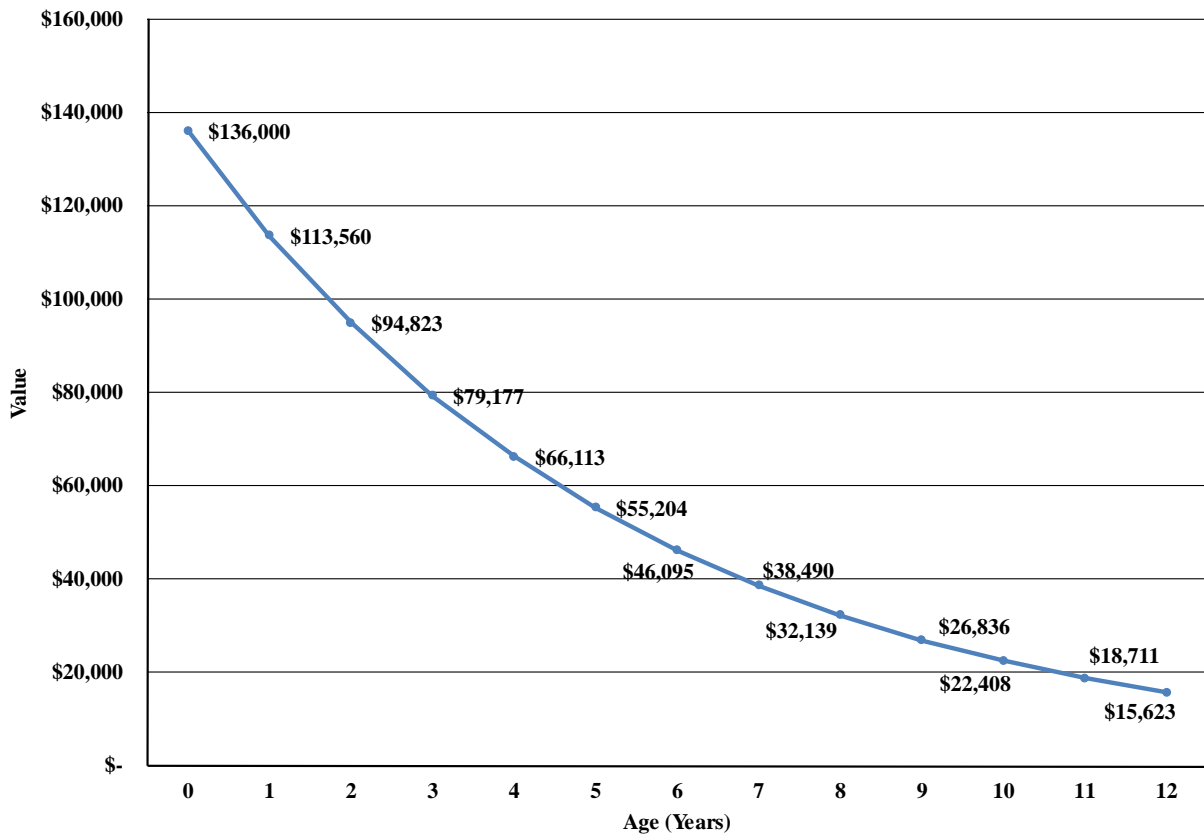
A joint facility would also control and minimize the number of tools needed through a central tool room. The current dispersed facilities require the City to purchase and maintain needed tools for each location. Many of these tools are used only occasionally and/or only for special purposes. A central facility would reduce the number of tools needed to a minimum thereby reducing their costs while insuring the needed tools are available. It would also provide improved control over the tool inventory.

### **EXTENSION OF EQUIPMENT LIFE/INCREASED TRADE-IN VALUE**

The outside storage of vehicles and equipment by these departments results in operational disadvantages, reduction of vehicle and equipment lives, and lost trade-in value. Operational disadvantages result from difficulty starting vehicles stored outdoors which delays response times and results in lost productivity. They also include increased safety risks for employees while cleaning off and preparing the equipment or vehicle for use by slipping off a wet or snow covered surface and connecting attachments in foul weather. Idling the engine to warm it up can result in increased carbon monoxide emissions and wasted fuel in addition to wasted time.

The storing of vehicles and equipment outside typically results in a 10% to 15% loss of value at trade-in time. The U.S. Bureau of Economic Analysis (BEA) estimates that local vehicles and equipment have a depreciation rate of 16.50%. To illustrate the effects of that depreciation and the potential increased trade-in value we first determined the depreciated value at the end of each type of vehicle and equipment life. For example, a one-ton dump truck is estimated to cost the City \$136,000 according to the most recent C.I.P. The recently completed Fleet Study recommended a replacement cycle of 12 years for this vehicle. The chart below shows the depreciation curve with a depreciated value of \$15,623 at year 12.

Vehicle Depreciation Curve



If this vehicle is stored inside, its value at trade-in would be 10% to 15% greater or approximately \$1,953 assuming an average increase in trade-in value of 12.5%. We estimated the total potential increase in trade-in values if all the equipment in these departments was stored inside using the BEA depreciation rates, the City's current C.I.P., and the recommended replacement cycles from the Fleet Operations Evaluation. The process for this was as follows:

1. The BEA depreciation rate was applied over the life of each piece of equipment in the City's C.I.P. to arrive at the estimated value at trade-in
2. The value at trade-in was multiplied by 12.5% to estimate the increased value as result of indoor storage
3. The increased value at trade-in for the equipment in the C.I.P. for each department was averaged
4. The number of new pieces of equipment and vehicles in the C.I.P. for each department was average to estimate average number of equipment and vehicles to be purchased each year
5. The average increase trade-in value was multiplied by the estimated number of new equipment and vehicles purchased each year to estimate the annual increase in value.

The process for Street and Traffic Maintenance resulted in an average estimated annual increase in trade-in value of \$17,596/year and a total estimated saving over a 30-year building life of \$527,871 as shown in the tables below.



**Street and Traffic Maintenance C.I.P.**

EQUIPMENT TYPE	2015	2016	2017	2018
Sweeper	\$ 265,000.00	\$ 200,000.00	\$ 200,000.00	\$ 200,000.00
1 Ton Dump Truck	\$ 136,000.00			
4 x 4 Pickup w/Plow		\$ 40,000.00	\$ 40,000.00	\$ 45,000.00
Sander with RDS	\$ 170,000.00			
3/4 Ton Pickup w/Plow			\$ 60,000.00	
Loader Snowblower	\$ 100,000.00			
Tandem Dump Truck			\$ 300,000.00	
Plow Truck w/Wing		\$ 230,000.00	\$ 230,000.00	\$ -
1 Ton Cab/Chassis w/Dump & Plow			\$ 125,000.00	\$ -
3 Yard Loader	\$ 210,000.00		\$ 195,000.00	\$ 225,000.00
Retro Sander Truck- perm. Mount		\$ 168,000.00	\$ 340,000.00	\$ 340,000.00
Retro - RDS Body Truct w/Plow		\$ 168,000.00		
<b>Total Street Maintenance</b>	<b>\$ 881,000.00</b>	<b>\$ 806,000.00</b>	<b>\$ 1,490,000.00</b>	<b>\$ 810,000.00</b>

**Estimated Savings from Indoor Storage**

EQUIPMENT TYPE	VALUE AT END OF LIFE	VALUE AT END OF LIFE	VALUE AT END OF LIFE	VALUE AT END OF LIFE
Sweeper	\$ 62,624.00	\$ 47,263.00	\$ 47,263.00	\$ 47,263.00
1 Ton Dump Truck	\$ 15,623.00	\$ -	\$ -	\$ -
4 x 4 Pickup w/Plow	\$ -	\$ 4,595.00	\$ 4,595.00	\$ 5,170.00
Sander with RDS	\$ 19,529.00	\$ -		
3/4 Ton Pickup w/Plow	\$ -	\$ -	\$ 6,893.00	\$ -
Loader Snowblower	\$ 11,488.00	\$ -		
Tandem Dump Truck	\$ -	\$ -	\$ 34,463.00	\$ -
Plow Truck w/Wing	\$ -	\$ 26,422.00	\$ 26,422.00	\$ -
1 Ton Cab/Chassis w/Dump & Plow	\$ -	\$ -	\$ 14,360.00	\$ -
3 Yard Loader	\$ 24,124.00	\$ -	\$ 22,401.00	\$ 25,848.00
Retro Sander Truck- perm. Mount	\$ -	\$ 19,300.00	\$ 39,059.00	\$ 39,059.00
Retro - RDS Body Truct w/Plow	\$ -	\$ 19,300.00	\$ -	\$ -
<b>Total Street Maintenance</b>	<b>\$ 133,388.00</b>	<b>\$ 116,880.00</b>	<b>\$ 195,456.00</b>	<b>\$ 117,340.00</b>
<b>Increase due to Indoor Storage</b>	<b>\$ 16,674.00</b>	<b>\$ 14,610.00</b>	<b>\$ 24,432.00</b>	<b>\$ 14,667.00</b>
<b>Average Savings/Vehicle or Equipment</b>	<b>\$ 3,199.00</b>			
<b>Average Number Replaced/Year</b>	<b>5.50</b>			
<b>Average Savings/Year</b>	<b>\$17,596</b>			
<b>Building life (years)</b>	<b>30</b>			
<b>Total Savings</b>	<b>\$ 527,871.00</b>			

Using the same process for Property and Facilities Maintenance resulted in an estimated annual savings of \$1,245 and a total estimated savings over a 30-year building life of \$37,342. The estimated savings for Parks Maintenance was \$2,253 annually and \$67,576 over a 30-year building life. In total the annual savings were estimated to be \$21,093 and over a 30-year building life they were estimated to be \$632,789. These saving would increase if the City increased its vehicle and equipment replacement spending to match the replacement cycle in the Fleet Operation Evaluation report.

## OPERATIONAL BENEFITS

The benefits of a consolidated facility previously discussed were all able to be quantified through either direct measurement or rationale estimation. However, there are other benefits that would be realized which are difficult to quantify, but which would improve coordination, customer service, and efficiencies. These include:

- Improved coordination in communications between departments
  - Setting up major projects
  - Responding to emergencies
- Central supply and purchasing
  - Reduce duplicative purchases
  - Enable bulk purchasing potentially reducing cost
  - Improve inventory control
- Improve work planning
  - Allocate resources to most urgent functions daily
    - Building Maintenance staff more available for plowing snow when needed
    - Street and Traffic Maintenance staff available to assist Building Maintenance when not needed for snow plowing operations
- Minimize the numbers of each type of vehicle and equipment needed through convenient sharing
- Central tool room would minimize the number of tools, especially special tools, needed as tools could more easily be shared by all departments

The consolidation of these departments into one facility will result in other efficiencies that will not result in direct cost savings, but will increase the quantity of services these departments provide without increasing their operating costs. These efficiencies will also increase the level of services provided to residents and businesses.

## SALT/ BRINE

The use of salt in controlling snow and ice has been a staple of public works departments for years. Over the past thirty years, there have been trends in the use of products to treat the roads, increasing driver safety and efficiency while decreasing the need for follow-up operations. These include:

- The use of sand in the mix has gradually decreased with many departments preferring to use straight salt.
- However, the need to store various mixed loads, to deal with varying conditions, has become the norm.
- Providing fully covered and secured salt piles has become a requirement of the PCA.
- The use of brine for treating roadways has become a necessary part of the treatment solution.
- The use of other chemicals varies considerably by individual departments due to cost, environmental implications, and climatic conditions.

An optimal salt storage structure would include a cover or roof that would more than protect the salt pile from rain, snow, and run-off. Due to the extreme corrosive conditions, the structure would not have a door (or any other operable or steel components) but a large opening facing away from prevailing winds in the winter. The height of the structure would be over 40' to allow for delivery and dumping of salt within a self-contained enclosure.

The existing building at the Streets main facility meets most of these objectives, although it appears to be on the small side in terms of area and lacks some height for end dumps. Even though the existing structure is slightly smaller than ideally desired, it could still be relocated in a cost effective manner.

There is no salt storage structure at the Lund site, but a tarp. This tarp does not cover the entire load and the city is not in compliance with state and federal requirements.

There is no salt storage structure at the Tree Farm site.

**Recommendation: Regardless of a potential consolidation, a proper salt storage structure should be provided at the two satellite locations.**

Relative to brine, the current system is not adequate in capacity, control, storage and efficiency. A system for this department might include an actual dedicated structure which would include a mixing unit, hopper, controls and several outdoor tanks. The department would be able to easily modify the mixing ratios, add chemicals and hook the system to the units on the trucks. This would allow the department to improve road conditions, worker efficiency, and manage the weather conditions sooner.

**Recommendation: Provide a dedicated area near salt storage with adequate space for loading, along with all the equipment and tanks for a complete and effective operation.**

## SPACE NEEDS ANALYSIS

DULUTH		PUBLIC WORKS SPACE PROGRAM - 10 Year (accounts for employee increase, not vehicle & equipment increase)				OERTEL ARCHITECTS, LTD.	
ROOM	SQ.FT.	SIZE (rough dim)	#	TOTAL	ADJACENCIES	NOTES	
<b>OFFICE AREA (SHARED)</b>							
Parks & Streets offices	252	14' x 18'	4	1,008			
Support Specialist/Reception/Entry	200	20' x 10'	1	200	Gen. Work area and offices	open reception desk, public entry	
Plan/Map room	300	15' x 20'	1	300	General Office, Departmental offices	Map and plan racks, flat files, table	
Small Conference room	320	16' x 20'	2	640		Conference Table and Chairs for 6 people	
Large Conference room	500	20' x 25'	1	500			
Employee Computer/Open Office area	1,571		1	1,571	General Office areas	SQ.FT. is based on area per person for # of emp. (current)	
IT room	120	12'x10'	1	120	General Office areas		
Multi-purpose/Training/Breakroom	3,356	As Req'd	1	3,356	Vending, Office area (includes space for kitchenette)	Area based on total # of full-time & part-time emp's (future proj.) Divisible with operable partitions.	
Janitor Closet	48	8'x6'	2	96	Restrooms		
Men's Restroom and Locker area	3,711		1	3,711	Office area, Vehicle areas	2'x2' open face lockers	
Women's Restroom and Locker area	1,414		1	1,414	Office area, Vehicle areas	2'x2' open face lockers	
Record Storage/ General Storage areas	200	10'x20'	1	200	Offices, Gen. Work area		
Mechanical and Electrical room	1,199	Varies	1	1,199	10% of total office area, not including these rooms.		
OFFICE AREA SUBTOTAL	14,315	DOES NOT INCLUDE CIRCULATION					
	19,325	DOES INCLUDE CIRCULATION					

DULUTH 10/19/2015 PROPOSED PROGRAM

A space needs analysis was performed and is included as an attachment to this report. This analysis was important for many reasons. First, this was used as a basis to determine the size, layout, and configuration of site and the buildings. In turn, the site and building plans were used to arrive at a project cost. Second, the program identified the minimum and optimum amount of acreage needed for a consolidation project, with all departments along with the animal shelter. And third, it helped the consulting team identify certain questionable or unusual results.

Please note that the program used is not just a common space needs list or spreadsheet. It is a proprietary program developed by Oertel Architects, focused especially on public works operations. Sizes of vehicles, the relative amount of drive lane area, optimum shop size and even the number of mechanics (and mechanic's bays) to fleet size are all factored into this program. The program is based on well over fifty public works operations in this state and others.

A few assumptions had to be made for this analysis. One is that the vehicles would be parked in stalls which are in a double loaded corridor or drive lane configuration, as opposed to have scores of overhead doors with direct in-out and no drive lanes. The former was chosen as being far more energy efficient, flexible and results in less double handling – current drawbacks.

Another assumption which was made is the idea of *separate but integrated*. While there would be a combined use and sharing of some areas, such as the break rooms, restrooms, lockers and vehicle storage, some spaces would be dedicated to the specific department. For example, the fleet maintenance area would be for mechanics only. Others would have spaces elsewhere to perform equipment maintenance.

It may or may not come as a surprise, but there is a considerable difference, in some cases, between the actual space currently available and the projected space needed (by both staff and equipment). Perhaps the area in greatest need is vehicle storage, which is lacking in sufficient space to store vehicles. There is also a need for more dedicated shops, brine related items, and general storage.

Ironically, on paper, there is not a need for additional space for the mechanics. The problem is that when one assesses the Fleet Services building and the confines, the space cannot be fully configured for an optimal layout. Lifts are staggered and set askew, there are dead corners, necessary driving lanes take up space that should otherwise be used for work bays, and several other deficiencies. In all, the amount of area currently available is reasonable but the effective use is about 20% less than if a building were designed especially for this department.

There are many other incongruities which require one to go beyond a basic program or analysis. A short list follows:

1. One cannot obtain realistic energy savings projections since, in some cases, buildings do not have proper air handling equipment.
2. The buildings are typically older and have been modified many times in an attempt to suit current needs. Sometimes there is too much area for a given task and other times too little. Blended together, it may appear that a given overall area is sufficient but, due to odd layouts and wall placement, it may not be that way.
3. An area may be reasonable in size but something such as a too-narrow doorway disallows certain equipment to be stored therein.

## CONSOLIDATION MASTER PLAN

### OVERVIEW

Attached to this report is a master plan of the new site. Several comments are made regarding this, as follows:

1. The size of the site identified by city staff for this study is more than adequate for the new facility, including all the elements which were considered as a part of this study (streets, park, facilities, fleet, sheriff, animal shelter). The buildings and site features can be tightened and set closer to one another so that a portion of the site can be sold or used for other purposes.
2. The main facility is 175,684 sq. ft. in size. While there are many possible layouts for this, and this masterplan can be developed in the future, the plan includes all the functions for staff and vehicles to operate effectively and efficiently well into the distant future.
3. The intent of this study is not to have a firm and final master plan as this will likely change, should the city determine the consolidation is in its best interest. Regardless, the sizes of the buildings and the general proximities of spaces are relatively correct.
4. The facility can be phased, if need be. Depending on the desires of council, certain items are quite easy to be reduced in size and added at a later date. The easiest of these is the vehicle storage area and the shops. Due to complexities and difficulties in adding future space to otherwise smaller areas, the office area would not be cost effective to expand later. Likewise, the mechanic's area, due to considerable infrastructure and equipment, would not be an effective and financially sound area for expansion at a later date.
5. The breakdown of the facility components and usage is as follows:
  - a. Office area: Offices, break room, training, conference rooms, lockers, restrooms and support areas. This entire area would be shared by all departments with adjacencies as required.
  - b. Vehicle storage: This is the area where all the big equipment and vehicles are stored, including plows, wings, sanders and brine equipment. The parking configuration is essentially like a double loaded corridor, entry on one side, exit on the other, with a central drive lane to alleviate any double handling of equipment.
  - c. Vehicle wash: Included in this master plan is both an automated and manual system. The automated system includes an automated under-carriage wash and corresponding equipment to wash the sides and upper areas of vehicles. While the manual equipment will allow for washing of virtually anything, the automated unit would focus more on the heavy duty vehicles. Although not a perfect clean and shiny wash, the duration of the complete wash would be about 3 minutes.
  - d. Mechanic's area / vehicle maintenance: Similar to the Fleet building, this is where all the equipment and vehicles are maintained.

- e. Shops: These are dedicated shops fitted out to include tools and equipment for staff. A wood shop, for example, would include power saws, drills, benches, sanders and storage in order to work with wood.
- f. Cold storage, or tempered storage, is provided to store equipment for longer durations. This equipment can be packed more tightly. Not attached to the main building, and not fitted out with much in the way of infrastructure, the cost of a cold storage building is much less than the main facility, making it a key component in this plan.
- g. Salt storage, a separate structure, is simply to cover and protect the salt piles. The existing structure at the existing Streets site can be used all or in part for this.
- h. Other outbuildings and yard areas, such as the animal shelter and sheriff's department storage are separated from public works activities in the interest of safety, efficiency and differing uses.
- i. A fueling island is shown although not a part of current city operations.
- j. Storage areas, especially dedicated and heavy duty bins are included to meet the needs of daily operations.



## ESTIMATED PROJECT COST

Attached to this report is a cost estimate which is based on the program and the initial site master plan, also provided herein. This estimate is based on several factors:

1. The basis assumes prevailing wages and larger more capable subcontractors.
2. It was assumed that the project would be constructed by a construction manager (CM), selected by the city, with numerous bid packages and contracts, all coordinated by the CM.
3. Estimated costs were developed in the winter of 2015/2016. Note that the costs of certain equipment and construction materials have been going up and the key leaders in the industry do not see an end in this trend.
4. Even though a modest contingency of 3% is included, this will not compensate for continuing increases in construction costs, especially if the project is delayed for any significant period of time.
5. Several public works projects in the recent two years were used as a counterpoint to cross check the estimate.
6. The estimate includes construction costs but also includes most related items such as fees, expenses, permits, furnishings and equipment.
7. The estimate does not include such items as fiber optics, work outside of the site for extended utilities, land costs, hazardous clean-up costs and the cost to physically move operations.

The total projected project cost is a little over \$30,000,000.00 and was used as a basis for other tasks and items included within this report, such as payback and potential financing. To reiterate, this total should be thought of in terms of today's dollars, and used in comparisons for what we understand today, should the project go ahead in the near future. Given the uncertainty and unknowns relative to rising or falling construction costs, energy, interest rates, unemployment and other key economic conditions in our country today, it is hard to speculate what might happen, even in one year. The experts do not even seem to be able to get a handle on this.



## FINANCING THE FACILITY

The cost of a new facility is estimated to be \$30,652,000 for the building planning, design and construction and \$2,000,000 for site acquisition resulting in a total estimated cost of \$32,652,000. The City has indicated that with a new facility, some of the existing facilities could be sold to offset \$3.62 million of this cost. This results in a net cost for the new facility of \$29,032,000. ( $\$30,652,000 + \$2,000,000 - \$3,620,000 = \$29,032,000$ ). The properties to be sold and their potential sales value as provided by the City include:

BUILDING APPRAISALS (FROM CITY)	
Animal Shelter	\$ 250,000
40 <sup>th</sup> / 42 <sup>nd</sup> Toolhouses	\$ 1,800,000
Facilities Building	\$ 470,000
Fleet	\$ 1,100,000
<b>Total Appraised Value</b>	<b>\$ 3,620,000</b>

In addition, the City would avoid \$5.8 million in costs for needed improvements to these facilities.

We have prepared an analysis of the City's ability to fund a new facility, the annual debt service costs, and the net annual costs so you can gain an understanding of the financial commitments this would require.

The City of Duluth could finance the combined facilities for public works and facility maintenance using the following financing mechanisms:

- 1) GO Referendum Bonds - Voters could be asked to approve general obligations bonds. GO bonds provide the lowest interest rates due to the strong credit — full faith and credit of the City issuing the bonds;
- 2) GO Capital Improvement Plan (CIP) Bonds - The City has authority to issue GO CIP Bonds for essential buildings such as police, fire, public works, general administration, or a library. Such bonds are authorized by including the improvements in a 5-year plan and approving it after a public hearing. The hearing must be noticed 14-28 business days prior to the hearing, must be approved by the City Council and is subject to a 30-day reverse referendum. Since they are GO bonds, they will have the lowest interest rate;
- 3) Certificate of Participation/Lease Revenue - The City could create a lease arrangement by having its EDA or HRA issue the debt and the City would pledge to annually appropriate each year to cover the lease payment which, in total, is equal to debt service. The HRA or EDA would have the authority to issue lease revenue bonds once such a lease arrangement is in place. A Certificate of Participation (COP) is similar to a lease revenue bond, but the lease is with a private non-government third party such as a bank who finances the loan. The Lease Revenue Bond is outside of levy limits while the COP is not. Without a GO pledge of the full faith and credit of the City, both the Lease Revenue and the COP will require higher debt service coverage. Coverage is the number of times net revenues will cover debt service. It is 1.05 times for all GO bonds, but will be at least 1.25 times for revenue bonds. It will also require one-year of debt service to be added to the issuance amount and held as payment in the event of a revenue shortfall. Interest rates are generally 0.25% to 0.50% higher than GO bonds. It is a more expensive option, but feasible as long as there is sufficient coverage.

The selection of one alternative over the others would depend on which one would best fit the City's current environment and/or preferences.

The projected annual cost of the new facility would include annual debt service cost related to the financing together with projected operational and maintenance costs. These would be offset by the cost savings of projected avoided capital improvements to existing facilities, projected new property taxes from the sale of existing facilities that would no longer be needed, the loss of operational and maintenance costs for these facilities, and the increased trade-in value of equipment previously discussed.

The estimated operational and maintenance costs of the new facility were projected to be approximately the same as the existing facilities that would be sold. This is because while the new facility would be more energy efficient, it is considerably larger and its make-up air and ventilation requirements are greater to meet modern codes. These result in no estimated savings over these current facilities.

The cost of financing the new facility was estimated based on two separate financings. This was done because it was assumed the existing City-owned facilities would be needed until the construction of the new facility was completed at which time the existing City-owned facilities would be sold. The first financing was assumed to be a bond issue in the amount of \$29,032,000 which is the total estimated cost of the new facility minus the market value of the existing City-owned facilities to be sold ( $\$32,652,000 - \$3,620,000 = \$29,032,000$ ). These bonds were projected to have a twenty-year term and an interest rate of 2.75%. The second financing was assumed to be short-term notes in the amount of \$3,620,000 to cover cost of the City-owned facilities to be sold. These notes were assumed to be in place for three years at an interest rate of 1.25% and would be repaid from the proceeds of the sales of the existing facilities.

The costs savings resulting from the avoided improvements to the existing City-owned facilities were projected assuming the \$5.8 million costs would be undertaken in even increments of \$1,160,000 each year over a five-year period. These costs are assumed to include the necessary expenditures to bring various property maintenance and tool house buildings in compliance with the Americans with Disabilities Act. It was assumed these annual improvements would each be financed over a term of twenty years at an interest rate of 2.75% similar to the financing of the new facility.

The annual costs of financing the new facility was reduced by the projected property tax revenue assuming the existing City-owned facilities were sold to tax-paying entities and that no improvements were made that would increase their taxable value. The property tax amounts were provided to us by the City. In addition, these property taxes were projected to increase three percent annually. The costs were also reduced by the projected savings resulting from the increased trade-in value of equipment that would now be stored indoors as previously discussed.

We have not included any savings from the MnDOT leased facility until the lease expires at the end of its 25-year term in 2027 because it can only be terminated by mutual consent of the City and MnDOT Savings beginning in 2028 are projected based on 2014 energy costs paid for by the City under the terms of the lease inflated at an annual rate of three percent.

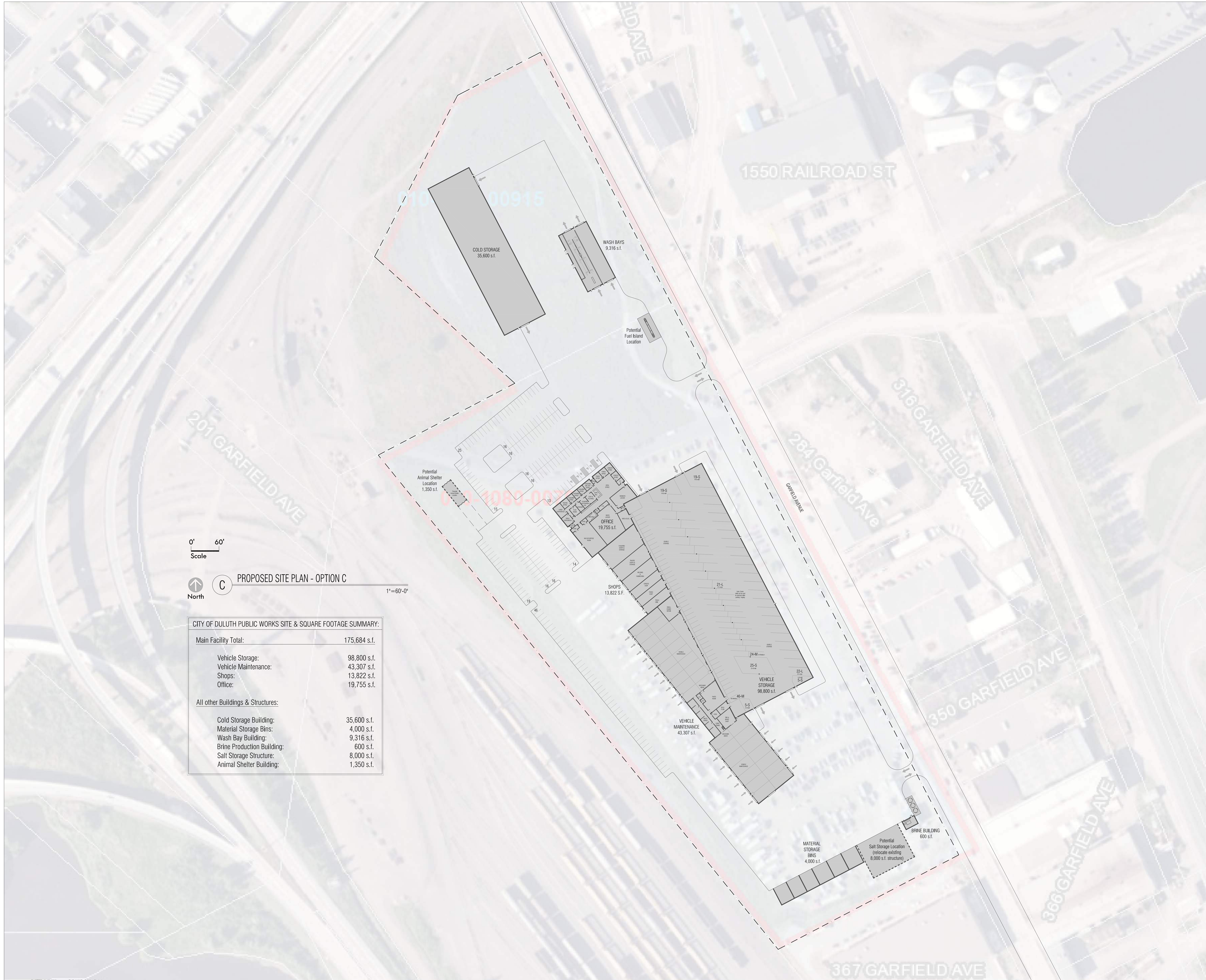
The annual costs of the new facility are projected to range from \$45,250 in 2016 to a maximum of \$1,875,652 in 2017 and an average annual cost of \$1,285,735. The projections show a savings to the City beginning in 2037 when the bonds used to finance the new facility are retired. The total net cost through 2040 is projected to be \$24,832,892. These are shown below.

**Projected Annual Costs of New Facility**

Year	Bond Amount Interest	Bond Amount Principal	Bond Amount Interest	Bond Amount Principal	Total Debt Service	Minus Avoided Facility Improvement Debt	Minus Proceeds from Sale of Existing Facilities	Minus Energy Savings MN D.O.I. Building Lease	Minus Estimated New Property Taxes	Minus Projected Increased Trade-In Values	Projected Net Annual Costs
2016	\$ -	\$ -	\$ 45,250	\$ -	\$ 45,250	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 45,250
2017	\$ 798,380	\$ 1,108,202	\$ 45,250	\$ -	\$ 1,951,832	\$ (76,179)	\$ -	\$ -	\$ -	\$ -	\$ 1,875,652
2018	\$ 767,904	\$ 1,138,677	\$ 45,250	\$ 3,620,000	\$ 5,571,832	\$ (155,963)	\$ (3,620,000)	\$ -	\$ -	\$ -	\$ 1,795,869
2019	\$ 736,591	\$ 1,169,991	\$ -	\$ -	\$ 1,906,582	\$ (239,439)	\$ -	\$ -	\$ (121,182)	\$ (21,093)	\$ 1,524,868
2020	\$ 704,416	\$ 1,202,166	\$ -	\$ -	\$ 1,906,582	\$ (324,794)	\$ -	\$ -	\$ (124,817)	\$ (21,726)	\$ 1,435,245
2021	\$ 671,357	\$ 1,235,225	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ -	\$ (128,562)	\$ (22,378)	\$ 1,345,494
2022	\$ 637,388	\$ 1,269,194	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ -	\$ (132,419)	\$ (23,049)	\$ 1,340,966
2023	\$ 602,485	\$ 1,304,097	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ -	\$ (136,391)	\$ (23,740)	\$ 1,336,302
2024	\$ 566,622	\$ 1,339,959	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ -	\$ (140,483)	\$ (24,453)	\$ 1,331,498
2025	\$ 529,773	\$ 1,376,808	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ -	\$ (144,697)	\$ (25,186)	\$ 1,326,550
2026	\$ 491,911	\$ 1,414,670	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ -	\$ (149,038)	\$ (25,942)	\$ 1,321,453
2027	\$ 453,008	\$ 1,453,574	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ -	\$ (153,509)	\$ (26,720)	\$ 1,316,204
2028	\$ 413,035	\$ 1,493,547	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ (56,789)	\$ (158,115)	\$ (27,522)	\$ 1,254,008
2029	\$ 371,962	\$ 1,534,620	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ (58,492)	\$ (162,858)	\$ (28,347)	\$ 1,246,736
2030	\$ 329,760	\$ 1,576,822	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ (60,247)	\$ (167,744)	\$ (29,198)	\$ 1,239,245
2031	\$ 286,397	\$ 1,620,184	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ (62,054)	\$ (172,776)	\$ (30,074)	\$ 1,231,529
2032	\$ 241,842	\$ 1,664,739	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ (63,916)	\$ (177,959)	\$ (30,976)	\$ 1,223,582
2033	\$ 196,062	\$ 1,710,520	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ (65,834)	\$ (183,298)	\$ (31,905)	\$ 1,215,396
2034	\$ 149,023	\$ 1,757,559	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ (67,809)	\$ (188,797)	\$ (32,862)	\$ 1,206,965
2035	\$ 100,690	\$ 1,805,892	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ (69,843)	\$ (194,461)	\$ (33,848)	\$ 1,198,281
2036	\$ 51,028	\$ 1,855,554	\$ -	\$ -	\$ 1,906,582	\$ (410,148)	\$ -	\$ (71,938)	\$ (200,295)	\$ (34,863)	\$ 1,189,337
2037	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (333,969)	\$ -	\$ (74,096)	\$ (206,304)	\$ (35,909)	\$ (650,279)
2038	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (254,186)	\$ -	\$ (76,319)	\$ (212,493)	\$ (36,987)	\$ (579,984)
2039	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (170,710)	\$ -	\$ (78,609)	\$ (218,868)	\$ (38,096)	\$ (506,282)
2040	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (85,355)	\$ -	\$ (80,967)	\$ (225,434)	\$ (39,239)	\$ (430,995)
<b>Total</b>	<b>\$ 9,099,634</b>	<b>\$ 29,032,000</b>	<b>\$ 135,750</b>	<b>\$ 3,620,000</b>	<b>\$ 41,887,384</b>	<b>\$ (8,202,968)</b>	<b>\$ (3,620,000)</b>	<b>\$ (886,913)</b>	<b>\$ (3,700,500)</b>	<b>\$ (644,111)</b>	<b>\$ 24,832,892</b>

## **SITE AND BUILDING MASTER PLAN**

(The digital version of this report it will have the site plan and master plan attached. The printed version will have them as separate attachments)



0' 60'  
Scale

North

**PROPOSED SITE PLAN - OPTION C**

1" = 60'-0"

CITY OF DULUTH PUBLIC WORKS SITE & SQUARE FOOTAGE SUMMARY:	
<b>Main Facility Total:</b>	175,684 s.f.
Vehicle Storage:	98,800 s.f.
Vehicle Maintenance:	43,307 s.f.
Shops:	13,822 s.f.
Office:	19,755 s.f.
<b>All other Buildings &amp; Structures:</b>	
Cold Storage Building:	35,600 s.f.
Material Storage Bins:	4,000 s.f.
Wash Bay Building:	9,316 s.f.
Brine Production Building:	600 s.f.
Salt Storage Structure:	8,000 s.f.
Animal Shelter Building:	1,350 s.f.

PROJECT NUMBER: 15-17  
DATE OF ISSUE: February 16, 2016  
DRAWN BY: EMW  
CHECKED BY: JLO

REVISIONS:

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ARCHITECT IN THE STATE OF MINNESOTA.

SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_  
LICENSE # \_\_\_\_\_

SHEET NAME:  
**PROPOSED SITE PLAN  
OPTION C**

SHEET NO:  
**A0.1-C**



**OERTEL  
ARCHITECTS**

1795 ST. CLAIR AVENUE  
ST. PAUL, MN 55105  
p: (651) 696-5186  
e: (651) 696-5188  
www.oertelarchitects.com

PROJECT NAME:

**City of Duluth**

**Public Works  
Study**

**DULUTH, MN.**

PROJECT NUMBER: 15-17

DATE OF ISSUE: February 16, 2016

DRAWN BY: EMW

CHECKED BY: JLO

REVISIONS:

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SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

LICENSE # \_\_\_\_\_

SHEET NAME:

**PROPOSED  
BUILDING PLAN  
OPTION C**

SHEET NO:

**A0.1-C**



CITY OF DULUTH PUBLIC WORKS MAIN FACILITY SUMMARY:	
Main Facility Total:	175,684 s.f.
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Shops:	13,822 s.f.
Office:	19,755 s.f.

0' 20'  
Scale



**C** PROPOSED BUILDING PLAN - OPTION C

1"=20'-0"

# APPENDIX

PROGRAM  
BUILDING ASSESSMENTS  
OPERATIONAL COSTS  
COST ESTIMATE

## PROGRAM

DULUTH						PUBLIC WORKS SPACE PROGRAM - 10 Year (accounts for employee increase, not vehicle & equipment increase)	OERTEL ARCHITECTS, LTD.
ROOM	SQ.FT.	SIZE (rough dim)	#	TOTAL	ADJACENCIES	NOTES	
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OFFICE AREA SUBTOTAL	14,315	DOES NOT INCLUDE CIRCULATION					
	19,325	DOES INCLUDE CIRCULATION					
DULUTH 10/19/2015 PROPOSED PROGRAM							
ROOM	SQ.FT.	SIZE (rough dim)	#	TOTAL	ADJACENCIES	NOTES	
<b>FACILITIES (Office/ Shop)</b>							
Director/ Supervisor Office	320	16' x 20'	1	320			
Offices	224	14' x 16'	3	672			
Copy Center/ Work Room	252	14' x 18'	1	252			
Storage	400	20' x 20'	1	400			
Tech/ Shop	280	14' x 20'	1	280			
<b>Support: shop, general</b>	600	20' x 30'	1	600			
: storage, supplies	1,000	25' x 40'	1	1,000			
: wood shop	1,200	30' x 40'	1	1,200			
: storage, racking	1,200	30' x 40'	1	1,200			
See shared usage for vehicle storage, conference, and restrooms.							
FACILITIES AREA SUBTOTAL	5,924	DOES NOT INCLUDE CIRCULATION					
	7,997	DOES INCLUDE CIRCULATION					
DULUTH 10/19/2015 PROPOSED PROGRAM							



ROOM	SQ.FT.	SIZE (rough dim)	#	TOTAL	ADJACENCIES	NOTES
<b>TRAFFIC</b>						
SHOP, general	800	20' x 40'	1	800		
Signal Shop	375	15' x 25'	1	375		
Storage	1,200	30' x 40'	1	1,200		
Office	280	14' x 20'	1	280		
Staging/ short term storage	300		1	300		
TRAFFIC AREA SUBTOTAL	2,955	<b>DOES NOT INCLUDE CIRCULATION</b>				
	3,989	<b>DOES INCLUDE CIRCULATION</b>				
<b>ANIMAL SHELTER</b>						
Heated kennel	300		1	300		
Heated kennel	200		1	200		
Storage	150		1	150		
Short-term area	150		1	150		
Wash down	200		1	200		
TRAFFIC AREA SUBTOTAL	1,000	<b>DOES NOT INCLUDE CIRCULATION</b>				
	1,350	<b>DOES INCLUDE CIRCULATION</b>				
<b>DULUTH 10/19/2015 PROPOSED PROGRAM</b>						
<b>VEHICLE STORAGE (shared)</b>						
Large Spaces	612	18' x 34'	43	26,316		Single axle and Tandem Space Parking
Medium Spaces	200	10' x 20'	70	14,000	<b>PARKING SPACES AREA ONLY!!!</b>	
Small Spaces	100	10' x 10'	47	4,700		
VEHICLE PARKING SUBTOTAL	87,219					Area number from Vehicle Storage Test Formula page
DOUBLE TRAFFIC LANE STORAGE INCREASE	11,817					
Mezzanine Storage	1,200		1	1,200		Attachment and small equipment storage area
General Storage area	7,000		1	7,000		Area within Vehicle storage for parking small pieces of equipment or accessories
<b>VEHICLE MAINTENANCE (Fleet)</b>						
<b>SEE VEHICLES PAGE</b> Large Maintenance Bay	1,152	24' x 48'	15	17,280	Veh. Storage, Small Bays, Parts Room, Mech. Offices	Double Bays w/ 75,000# vehicle lifts, lube reels, ovhd crane
<b>SEE VEHICLES PAGE</b> Small Maintenance Bay	800	20' x 40'	10	8,000	Veh. Storage, Large bays, Parts Room, Mech Offices	Single bay each w/ 12,000# lift, lube reels, ovhd crane
VEHICLE MAINTENANCE SUBTOTAL	25,280	<b>MIN. REQ'D AREA</b>			Note: This area IS included in total, not the max. area (double bay)	
<b>MAINTENANCE SUPPORT SPACES</b>						
Lube Room	336	14' x 24'	1	336	Exterior wall location, all Maintenance bays	
Mechanic's Office	1,500	20' x 75'	1	1500		
Parts Room	1,800	30' x 60'	1	1800	Maintenance Bays, Mechanic's Offices	Shipping and Receiving access
Tools Crib	1,200	20' x 60'	1	1200	Maintenance Bays, Mechanic's Offices	
Tire & Brake Shop	600	20' x 30'	1	600	Maintenance Bays, Mechanic's Offices	
MAINT. SUPPORT SPACES SUBTOTAL	5,436					Offices, Multi-purpose Room, Locker Rooms
Double Bay Maintenance Subtotal	41,874				DOUBLE MAINTENANCE BAYS ARE 24'x96' FOR LARGE BAYS	
VEHICLE MAINTENANCE SUBTOTAL	41,874	<b>MAX. AREA PER PROGRAM</b>			Note: This is NOT included as part of total, min. area shown is.	
<b>DULUTH 10/19/2015 PROPOSED PROGRAM</b>						

SHARED SHOPS, WORK BAYS, WASH BAYS						
Welding Bay/ Fabrication	1,120	28' x 40'	1	1,120	Maintenance Bays, Part Room	Welding curtain, benches, etc.
Small Engine Repair Bay	800	20' x 40'	1	800		
Vehicle Wash Bay	1,536	32' x 48'	2	3,072		Manual wash bays
Automated Wash Bay	4,352	32' x 136'	1	4,352		Automated wash bay
Streets Shop	800	40' x 20'	1	800		
Parks Shop	800	40' x 20'	1	800		
SHARED SHOPS SUBTOTAL	10,944					
<b>BUILDING PROGRAM TOTALS</b>				TOTAL		
SUB-TOTAL				180,357		
CIRCULATION @ 30%				12,498		circulation is listed for maintenance, and shared shops, work bays, wash bays only, remainder of numbers have circulation already built in, as shown in subsections.
TOTAL				192,855	Does NOT include Cold Storage	

DULUTH 10/19/2015 PROPOSED PROGRAM

SITE PROGRAM REQUIREMENTS						
SALT/SAND BUILDING***	4,000	50' x 80'	1	4,000	VERIFY required storage	provide min. 8' tall barrier walls and cover for mixing
	***Salt building size determined by salt pile, full width of building, and within/ 10' min. of length of building for pile overage. Min. pile height is assumed 16' tall. Area calculated by tons required of salt Salt capacity for programmed size: 2,061 Tons for 16' tall pile					
PARKING SPACES	270	9' x 18'	91	24,534	Note: Total projected staff is 181 (full-time & seasonal)	Parkings spaces per floor area (1/2000) plus 2 HC spaces and 1 van aisle
FUEL ISLAND	2,400	30' x 80'	1	2,400	3 dispensers (diesel and gas at each dispenser)	
MATERIAL STORAGE BINS	400	20' x 20'	10	4,000		asphalt, class V rock, sand, black dirt, etc.
STORM WATER RETENTION	11,943	200' x 60'	1	11,943		1" rain on impervious programmed area, 5' deep average depth w/ 25% overage for slope
COLLECTIONS AREA	10,000	Varies	1	10,000		Brush and Composting collections / public access / Open Yard Storage
FENCED OUTDOOR AREA FOR ANIMAL SHELTER	600		1	600		
VEHICLE IMPOUND	200	9' x 18'		200		
TRASH AREA	800	20' x 40'	1	800	Rear of the building	enclosed dumpster area
SUB-TOTAL				58,477		
SITE CIRCULATION @ 150%				87,716		
TOTAL				146,193		
<b>SITE AREA TOTALS</b>						
MAIN BUILDING	192,855					
CIRCULATION AROUND BUILDING	48,214					
BLDG TOTALS	241,068					
25% GREEN SPACE	36,548					
SITE COMPONENTS TOTAL	146,193					
GRAND TOTAL SITE AREA NEEDED	423,810	12.65			Total squarefootage and acreage, plus added 30% of programmed acreage for drainage paths, easements, setbacks, etc.	

DULUTH 10/19/2015 PROPOSED PROGRAM

OPTIONAL MISC. AND COLD STORAGE						
Large Space	612	18' x 34'	22	13464	Misc. PW Cold Storage	Does not account for future growth of cold storage needs
Medium Space	200	10' x 20'	36	7200	Misc. PW Cold Storage	
Small Space	100	10' x 10'	23	2300	Misc. PW Cold Storage	
MISC. AND COLD STORAGE (net)	22,964					CHECK S1 / S2 OCCUPANCY STORAGE LIMITS
COLD STORAGE TOTAL	35,594					Includes Drive Lane increase factor at interior
SITE AREA TOTALS WITH OPTIONAL MISC. & COLD STORAGE						
MAIN BUILDING	192,855					
CIRCULATION AROUND BUILDING	48,214					
COLD STORAGE	35,594					
CIRCULATION AROUND BUILDING	11,482					
BLDG TOTALS	288,145					
25% GREEN SPACE	36,548					
SITE COMPONENTS TOTAL	146,193					
GRAND TOTAL SITE AREA NEEDED	470,886	14.05				Total squarefootage and acreage, plus added 30% of programmed acreage for drainage paths, easements, setbacks, etc.
DULUTH 10/19/2015 PROPOSED PROGRAM						

Department Vehicles (Warm Storage)				Department Vehicles (Cold Storage)		
Department	Large 18x38	Medium 10x20	Small 10x10	Large 18x38	Medium 10x20	Small 10x10
Facilities Management	3	9	5	1	4	2
Fleet Services	1	3	1	0	2	0
Park Maintenance	7	22	37	4	12	19
Street Maintenance	32	36	6	17	18	3
<b>Total</b>	43	70	47	22	36	23
<b>NOTE: VEHICLE COUNTS</b> listed above account for 2/3 of vehicles in heated storage and 1/3 of vehicles in cold storage						
Staff - Full Time						
Department	Current	% Increase per 10 years	# Years for planning	Projected Staff		
Facilities Management	27	10	10	29.7		
Fleet Services	18	10	10	19.8		
Park Maintenance	33	10	10	36.3		
Street Maintenance	41	10	10	45.1		
<b>Total</b>	119	men to women 6-1 (approx. - ve)		131	projected men to women 3-1	0.75
Staff - Part Time						
Department	Current	% Increase per 10 years	# Years for planning	Projected Staff		
Facilities Management	1	10	10	1.1		
Fleet Services	0	10	10	0.0		
Park Maintenance	15	10	10	16.5		
Street Maintenance	29	10	10	31.9		
<b>Total</b>	45	men to women 6-1 (approx. - verify)		50	projected men to women 3-1	0.75

DULUTH FACILITY TEST FORMULA				
<b>VEHICLE STORAGE</b>				
Large Vehicles	18x38	Current Fleet	Planning Years	increase per 10 years
		43	10	0
Medium Vehicles	10x20			
		70	10	0
Small Vehicles	10x10			
		47	10	0
Angles Parking increase Factor				
				1.25
	Input Factor			
DEGREE PARKING	30/60	1.25		
	45	1.5		
	90	1.75		
		adds additional drive lane/ turning radius req'd for space		
	Vehicle Storage Number	Uses a multiplying factor (1.55 for <i>single lane traffic aisle</i> ) for an area increase to include vehicle circulation, number is an average based on the study of prior completed projects of Oertel Architects, by taking total area of Vehicle storage and dividing by the amount of space used for parking		
	87,219			
<b>VEHICLE MAINTENANCE</b>				
<i>Mechanic Based</i>				
Number of mechanics		Current	Planning Years	Increase per 10 years
		3	10	0.1 USE DECIMAL!
Number of Bays (total)		Current mechanic count is 2, but 3 is planned for in near future Number of Bays per mechanic* times number of mechanics *average based on previous project studies		
		24.75		
Number of Large Bays (min).		Typical size double large bay =24'x96' =2304 sq ft		
		15		
Number of Small bays (min).		Typical size Single large bay =24'x48' =1152 sq ft Typical size Single small bay =20'x40' =800 sq ft		
		10		
	Vehicle Maintenance Bays	Vehicle Maintenance Bays		
	25,124	41,874		
	Mechanics Support Area	area includes mechanic's offices (120 sq. ft. per mechanic) and resource area (200 sq.ft. per), parts room, tool crib, etc.		
	6270			
	Vehicle Maintenance Area*	*doesn't include special use bays such as welding bay, tire balancing bay, etc.		
	31,394			
<i>Vehicle Based</i>				
Number of Vehicles	Large Vehicles	Medium Vehicles	Does <b>not</b> count Small Vehicles, Fire, Engineering, Inspections, Police Counts vehicles in Cold & Warm Stor.	
	65	106		
Number of Bays (total)	Number of total vehicles divided by number of vehicles per mechanic* *average based on previous project studies (10 per mechanic)			
	17.1			
Number of Large Bays (min).	Typical size large bay =24'x96' =2304 sq ft			
	4			
Number of Small bays (min).	Typical size large bay =24'x40' =960 sq ft			
	13			
	Vehicle Maintenance Bays	Vehicle Maintenance Bays		
	21,792	4740		
	Mechanics Support Area	area includes mechanic's offices (120 sq. ft. per mechanic) and resource area (200 sq.ft. per), parts room, tool crib, etc.		
	4740			
	Vehicle Maintenance Area*	*doesn't include special use bays such as welding bay, tire balancing bay, etc.		
	26,532			

## BUILDING ASSESSMENTS

- Facilities Building
- 40<sup>th</sup> West- Toolhouse Building
- 42<sup>nd</sup> West- Parks Toolhouse
- Fleet Services
- Joint MnDOT- Duluth Facility
- Lund Western Satellite
- Tree Farm

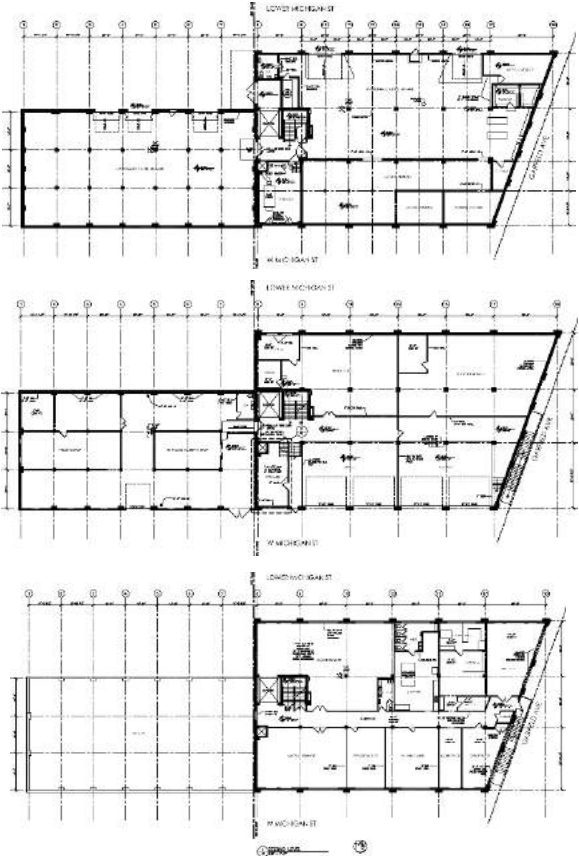
## FACILITIES BUILDING

### Summary

**Introductory note:** This building is one of the older buildings in use by the city for the range of operations being studied. Since this building was not originally built as a maintenance center, there has been some conversions, over the years, to suit the current use.

With this said, the building is in very good condition, given its age, but that is partially due to a high level of maintenance and repair over the recent years.

Because of the care taken in keeping this building serviceable, and due to the high ceilings, the shop spaces in particular are quite nice and exceed the conditions found in other public works shops.

Category	Findings	Recommendations/results
<b>Components</b>	<p><b>Main building:</b> vehicle storage / shops /office space / storage</p> <p><b>Cold storage:</b> unknown but small in size.</p>	
<b>Space/area</b>	<p><b>Main building:</b> Current size: 33,600 (12,800 sq.ft. in basement, 12,800 sq.ft. first level, 8,000 sq.ft. second level)</p> <p><b>Cold storage #1:</b> Current capacity: not known</p> <p><b>Cold storage #2:</b> Current capacity: not known</p>	

<p><b>Conditions</b></p>	<p><b>Main building:</b>          Building shell: good          Floors: fair to good          Roof: very good          Doors, components: good          HVAC: Varies          Electrical: Varies from poor to fair          Energy efficiency: poor          Other:</p> <p><b>Cold storage:</b> fair</p>	<p>This is an older building but very well maintained.</p> <p>Elevator is antiquated, many spaces/rooms are either too large or too small for the current uses and much of the building and components are not ADA compliant.</p>
<p><b>Shortcomings/ concerns</b></p>	<p>Inadequate ventilation          Accessibility (ADA)          Openings/gaps throughout building          Double handling of equipment          Exit way blocked          Concerns over site piled salt run-off</p>	<p>There is no pressurization between uses and, along with possible voids/cracks, air quality in the office related areas is likely below acceptable standards.</p>

Arguably, this building is in very good relative condition, and this is mostly due to good maintenance. As a part of the overall direction for the various operations studied, maintenance cost considerations for this, along with operational costs, need to be considered in keeping this building in use for the city departments.

The one thing that is not easily corrected, due to the physical nature of the building, is the poor thermal envelope. Although the roof has and will continue to be a solvable energy concern, the walls are not. Adding insulation to the walls can be accomplished, but at considerable cost and trouble.

### Building and Site Assessment

The building structure is made of reinforced concrete with exterior masonry walls. Recent tuck-pointing work on many of the walls results in this building being in good condition. Additional tuck-pointing work (currently being scheduled) will keep this building in shape for many years to come.

Insulated overhead doors with proper weather stripping is as much as one can hope for from a practical standpoint and for conserving energy, as shown.

As noted above, it is the walls which fall far short in terms of energy conservation, with no actual insulation and no vapor barrier.





Newer tinted window units facing south help with energy conservation and control glare and brightness contrast.

This is not a glamorous building due to the infilled openings and an inconsistent architectural theme but there is potential with the building to make this a fine and attractive piece of architecture. Regardless, putting energy and appearance aside, it is a structurally sound building and quite serviceable.

Note that the two story addition (to the right on the photo above) is not as functional and is not in quite as good condition as the main brick building. Column spacing is more limited, heights are more restrictive, and the overall depth of building less ideal.

On the plus side, good maintenance and construction is evident: proper flashing was noted at the penthouse, parapet caps, and roof penetrations.

Extremely tight conditions are noted at the vehicle storage bays (as shown on the lower right image).



Without a doubt, the city has made many good decisions on maintenance and making the retrofit of this building suit the current operations. Unfortunately, given the building conditions, there is a lack of space for the operations included in the building. Also, the spaces, while workable, lack enough “elbow room” to work around all the parked equipment. Truck stalls, for example, are just not wide enough or deep enough for efficiency, requiring some care so as not to cause a dent.



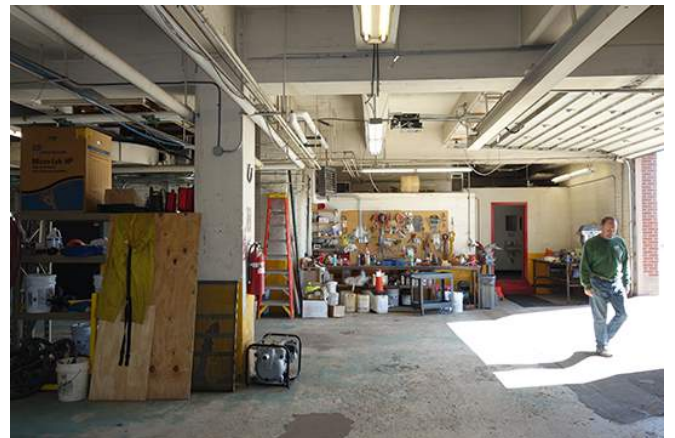
In general, the shop spaces are as good as one can expect. The concrete structure allows for an easily maintainable space with the ability to load floors with equipment, as desired.

High ceilings add to the good working conditions, help with air circulation, daylighting and air quality. Unlike the vehicles storage spaces, these shops have adequate elbow room.



At the lower level, space is used for a variety of purposes, from vehicle storage to storage or material to shop space. There are several issues with this. First, if the space is needed from a specific task, vehicles need to be moved out of the way, resulting in double handling and wasted time.

Second, the HVAC does not accommodate proper ventilation of the space with users working on project while the vehicles are turned on.



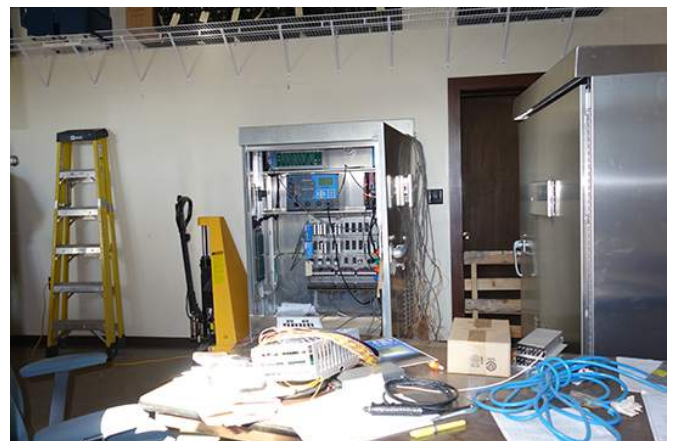
At the shop in the lower level, there is a slope from the site down into the shop space. This is one of the several mixed use spaces: vehicles, shops and storage.



There is a lack of good dedicated storage throughout the building for all departments, as shown at several locations.



Some of the work in the signal department should be performed in a more controlled condition (a dust free area, for example) but the space is quite functional nonetheless.



Work spaces, offices and support areas are all in reasonable condition.



A new modular boiler system was recently installed: efficient, well designed and in excellent condition.



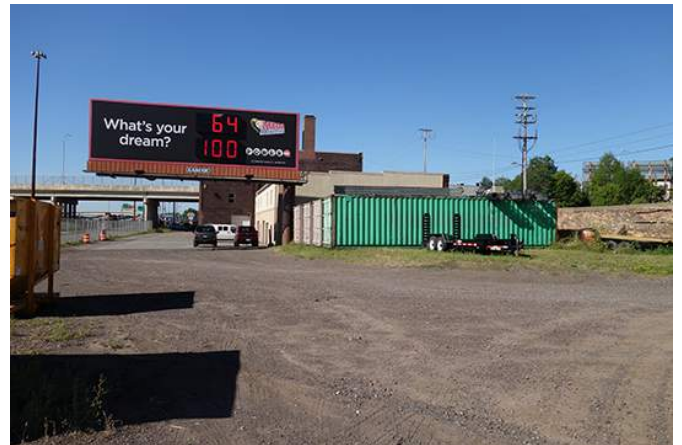
Staff working spaces are located adjacent to the vehicle and equipment storage areas, with no pressurization and physical / mechanical separations between uses.



The site is not attractive and poorly screened. Although this may not be an issue, given the location within the city, should this area be spiffed up, the site could use more screening and less in the way of stored piles.




As shown to the right, there is quite a lot of open land available for a better purpose at this site.



***End of review- Facilities Building***

## 40<sup>th</sup> WEST- TOOLHOUSE BUILDING

### Summary

Category	Findings	Recommendations/results
<b>Components</b>	<p><b>Main building:</b> vehicle storage / office</p> <p><b>Salt storage, large:</b> fabric/concrete</p> <p><b>Salt storage, small:</b> timber</p> <p><b>Cold storage:</b> open storage, metal bldg.</p>	<p>Due to a variety of reasons, expansion and renovation of the main building is not a reasonable solution, long term; the site and buildings are not large enough; there is far too much double handling due to the above and staff could be far more efficient with a better solution for a facility and site.</p>
<b>Space/area</b>	<p><b>Main building:</b> Current size: 19,800 sq.ft. (ground floor)</p> <p><b>Salt storage, large:</b> Current capacity: unknown but barely adequate in size.</p> <p><b>Salt storage, small:</b> Current capacity: limited but acceptable</p> <p><b>Cold storage:</b> Current capacity: Unknown</p>	
<b>Conditions</b>	<p><b>Main building:</b> Building shell: fair to marginal Floors: fair to marginal Roof: unknown Doors, components: good to fair HVAC: good to fair (see notes below) Electrical: fair, lighting fair to poor Energy efficiency: very poor</p> <p><b>Salt building #1:</b> very good</p> <p><b>Salt shed #2:</b> poor</p> <p><b>Cold storage:</b> fair</p>	
<b>Shortcomings/ concerns</b>	<p>Poor energy usage Not enough space Double handling of equipment Poor wash bay / system Concerns over site piled salt run-off</p>	

The main building is an older one, with several modifications and upgrades, the most recent being a make-up air system within the vehicle areas to help with removal of gases from vehicles.

Note that this building has so many shortcomings that it may not be reasonable or financially sound to repair this building for efficient use over the long term, as well as provide the additional space needed and improve energy efficiency upgrades. The width of the vehicle storage space is too narrow and there is double handling of equipment and components. The wash bay is far from workable and likely results in extra staff time while making the wash operations problematic. This function does not offer the means of keeping the equipment clean and salt-free.

There are minor structural issues and the condition of many building systems is marginal.

Upgrades to the ventilation system were recently installed since the quality of the air, due to a lack of proper HVAC equipment, was quite poor.

Without question, this is the worst building being used by the city departments.

## Site and Building Assessment

The building is made of concrete block with portions of brick masonry. There is virtually no insulation on most walls. Although painted, some mortar is soft and loose and there is some cracking of the joints.

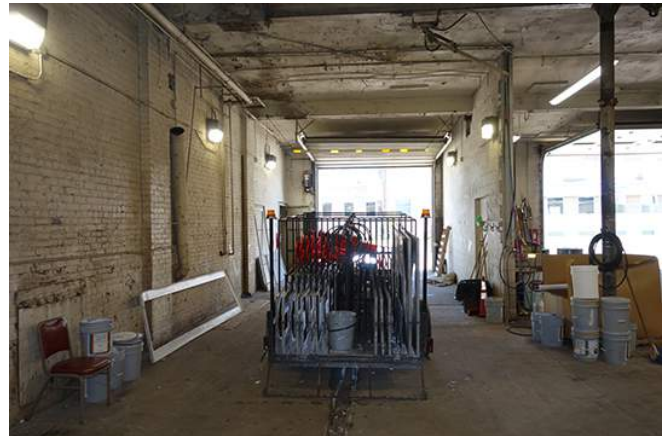
Because of items such as the electrical panels and conduits, insulation from the exterior side is not straight forward. Insulation on the interior side is even more difficult. As a part of improving the energy usage, a finish would also be required (metal panels, stucco, wood, etc.)

Note that, if this building were ever expanded, code would require this building to be brought up to code from an energy standpoint and be made fully accessible and compliant with ADA.

The existing floors are in marginal condition as evidenced by numerous cracks in the floor.



The wash bay, to the right, is too narrow, not tall enough, not self-contained (especially for reducing salt spray) and the doors at the front of the building are too narrow for some fully-fitted trucks. While staff should be encouraged to clean city vehicles of salt this set up is a deterrent.

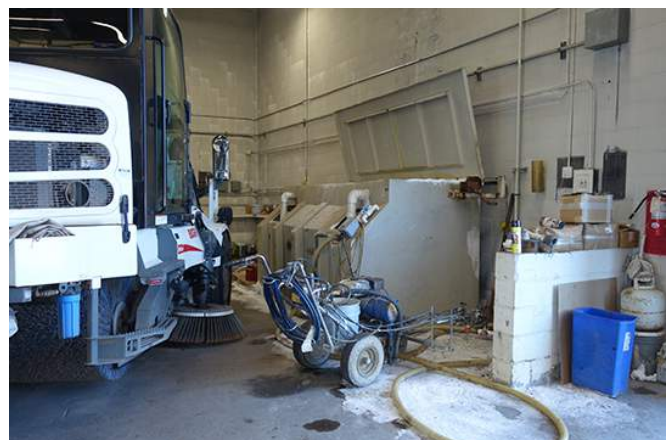


Installation of a make-up air system, to improve air quality, is currently being installed, which is very important from a health and welfare standpoint. Unfortunately, creating a pressurized condition, with staff areas under positive pressure (to help eliminate gases from entering the office area) cannot be easily accomplished.

Ironically, there is not enough room in the building for storage of equipment and the new system takes up even more of the valuable space needed.



Use of brine has become an important component to an effective snow and ice control program. The space to the right was carved out of storage area and, by default, it is somewhat undersized and incomplete.





The office area, and break room (to the right) are basic and serviceable. Like the rest of the building, there is not enough room for all staff and operations.

Not illustrated are lockers and restrooms, all of which are a bit dismal, short of area and dated.

This building, as is, does not comply with the American Disabilities Act (ADA).



Portions of the building have been carved out for use and, again, not enough area, not enough height and less than ideal working conditions.



Some areas of the building are just plain scary, as is this storage is to the right.



The cold storage building to the south of the main building is of very basic construction. A strong wind could possibly do some damage. Nonetheless, it is serviceable



Due to a lack of covered storage, many pieces of equipment are store outdoors including trailers, plows, vehicles and other equipment.

Not only is this less than ideal to preserve the equipment, it requires more handling and is a bit unsightly.



Portions of the site are paved but a majority is simply gravel.



There are two salt building on site, one larger and newer and the other a smaller older one.

The new building is a prototypical fabric membrane roof with concrete jersey barriers, an economical but good solution for salt storage. Based on the loads needed, this may be a short in size, plus there should be no material forward of the drip line to prohibit run-off.



The smaller salt storage building is in marginal condition and is likely used since there is not enough room in the larger structure for separating different loads or mix ratios of salt and sand.



There are other large piles of stored materials on site. One such pile is sweepings from spring operations, necessary due to the use of sand on the streets over the winter. Disposal of this material can be complicated and strategically problematic.




To reiterate, the buildings and site are not large enough to effectively serve efficient operations and the conditions, for the most part, are poor.

***End of review- 40<sup>th</sup> West Toolhouse***

## 42<sup>nd</sup> WEST- PARKS TOOL HOUSE BUILDING

### Summary

Category	Findings	Recommendations/results
<b>Components</b>	<p><b>Main building:</b> vehicle storage / office</p> <p><b>Cold storage:</b> open storage</p>	
<b>Space/area</b>	<p><b>Main building:</b> Current size: 11,331 sq.ft. 4,947 main floor (parks) 2,835 main floor (voting) 2,835 ground floor (voting) 714 basement (parks)</p> <p><b>Cold storage:</b> Current capacity: unknown</p>	
<b>Conditions</b>	<p><b>Main building:</b> Building shell: fair to good Floors: fair Roof: fair Doors, components: good to fair HVAC: Good to fair (see note below) Electrical: fair Energy efficiency: poor Other:</p> <p><b>Cold storage:</b> fair</p>	
<b>Shortcomings concerns</b>		<p>The spaces vary in efficient use of space, cramped in the work areas, a bit tight in the office area and an open lobby which has ample space but lacking a dedicated use as it is a part of access to other spaces.</p>

Similar to other buildings owned by the city, the main building for parks maintenance is a two story building, having a number of retrofits and renovations. The building is built primarily out of concrete block, with some walls insulated others not insulated.

Although the condition is better than the neighboring streets facility, compliance with ADA is the most problematic of all city buildings.

It appears that the department has done the best of what can be done to make this building the most serviceable and workable. Storage and layout is especially neat and well organized.

## Site and Building Assessment

The concrete block building has a somewhat split level design, with a loading dock on one side. A stair connects the floors for staff use.

This is a flat-roof building with downspouts to grade.



The heated storage area for the equipment is a drive-through design, which allows the trailers to remain attached to the trucks overnight. There is not a lot of room between storage bays but enough to be workable.

The garage doors are newer and relatively efficient and floor is in reasonable good condition and most systems are acceptable for longer term use.



The lower area of the building is for storage and shop space. The area does not have much height and beams, plumbing and related items likely interfere with use at times.

Otherwise, these space are very well maintained and well organized, exceptional actually.



The lighting at these areas is relatively new and more energy efficient than other buildings that have been assessed.



Overhead doors at the lower level and upper level dock area provide good access for delivery / pick-up of larger items.



The upper level consists of support areas, offices and similar rooms. These areas are also in good condition, lighting is efficient and surface materials easy to maintain.

The biggest shortcoming is a combination of slightly cramped spaces which are heavily used and an open space that is generous but with no dedicated use.



The locker area is an example of insufficient space: one can imagine, if all staff use the locker area (shown to the right) there would not be enough room to even move out of the way of another person.



East of the main building is a basic storage structure built of wood framing and a metal skin, with a gravel floor. This is useful for keeping equipment out of the snow and ice. In relative terms, while useful there is little cost value to this.



Between this site and the 40<sup>th</sup> street site is a large open area for site storage. Although there are dedicated areas, for items such as trees (ready for planting) it is assumed that the piles of loose materials (gravel, rock, dirt, etc.) can be used by either department.

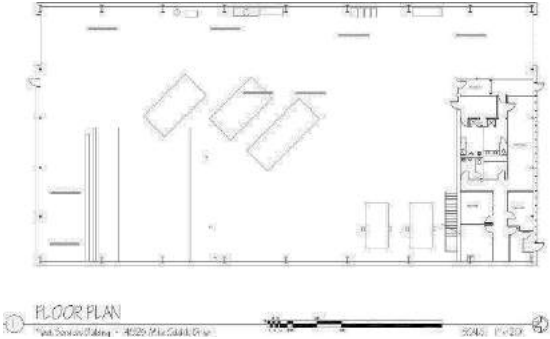


***End of review- 42<sup>nd</sup> West Parks Toolhouse***



## FLEET SERVICES

### Summary

Category	Findings	Recommendations/results/other
<b>Components</b>	<b>Main building:</b> vehicle maintenance, parts storage, break area and office	
<b>Space/area</b>	<p><b>Main building:</b> Current size: 20,000 sf.</p> <p>Drive lane to the north with angled parking for the work bays.</p> <p>This has a very tall working area, needed for ladder trucks in particular.</p>	 <p>FLOOR PLAN 1/16/16 1/16/16</p>
<b>Conditions</b>	<p><b>Main building:</b> Building shell: good to excellent Floors: good Roof: uncertain Doors, components: good HVAC: good Electrical: good Energy efficiency: fair to good Other:</p>	
<b>Shortcomings concerns</b>	<p>Very inefficient layout Not 100% ADA compliant Insufficient outdoor space</p>	<p>A good deal of the equipment could be relocated, if there were to be a relocation.</p>

Although this building and site have drawbacks, it is one of the better facilities being used by the city.

## Conditions Assessment

The Fleet building is essentially one large space for maintaining vehicles and equipment with support areas/ room on the east side of the building. There is one drive through bay for access of all the equipment being serviced. A heavy duty overhead crane serves the entire space.

While this space seems ample and flexible there are a number of short comings, as follows:

1. Because of the one access bay, the vehicles need to angle into the open work areas on a bias and then back out. This is problematic for a variety of reasons.
2. Due to the configuration, about 25% of the area is dedicated to either moving vehicles or those that can be parked only temporarily.
3. The angled service bays and configuration result in angled pockets and a somewhat cluttered space. The fact that there is no real storage room, aside from parts, contributes to this.
4. Arguably, the ceiling is extremely tall. Staff would indicate that this aids in the work on certain equipment such as bucket trucks. One could also argue that, given the need to heat the room, the energy costs may out-weigh the practical benefits.
5. With this said, given the building was designed for another use, staff have done an excellent job in layout and efficiency.



Above: view of the main space looking west and a work area for smaller equipment forward of the larger work bays.

Below: the very SW corner with equipment and tools defining the work area.



The condition of the building is good. The structure floors, walls and finishes show little sign of excessive use, failure or necessary maintenance.

Note that this type of building is such that the visible interior wall and surfaces (the white material) acts to hold in the insulation and serve as a vapor barrier. An issue with this method of construction can be water infiltration, damp / compromised insulation and mold. The vapor barrier traps in any water infiltration and one cannot even tell there is an issue unless the membrane is punctured.

Although virtually all mechanics by definition are ambulatory, the law (specifically the American Disabilities Act – ADA) requires access to all areas of the building except for storage. Depending on interpretation, the mezzanine may or may not be compliant.

When necessary, vehicles are washed in the drive lane, not ideal but workable.

There is no dedicated lube room but the storage units are centrally located against the north wall, along with similar equipment and storage units. Technically, there should be a containment area should there be a leak or failure of any drum, cube or container.

While there are not a significant number of drains, one continuous trench drain (as shown on the right) collects the run-off water.

Note that, due to the membrane used as the finish wall surface, panels have been installed up to 10' to prevent damaging the membrane.



Above: Floor mounted light duty lifts in use with the stair to the mezzanine off to the left, followed by a view of the drive lane looking east.

Below: A view of the lube storage equipment and pressure washer area.



Much could be said about the type of building system, basically a pre-engineered steel frame, metal roof and walls. This is what we refer to as *light industrial*. This type of building does *not have the longevity of a concrete or masonry* type of construction.

Over time, due to the somewhat inexpensive construction and materials, these wall and roof panels are prone to expand and contract, causing water infiltration.

Partly due to the relatively new construction, this building is quite serviceable.

The main drawback of the building is the floor configuration, resulting in inefficient use of space and less than ideal work areas.



The site has limited exterior open space. There is a staff parking area to the east and a very limited area for short term parking of vehicles to be worked on to the west.



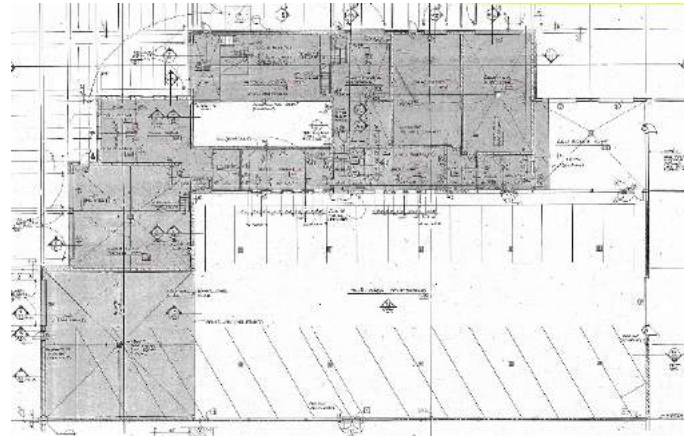
***End of review- Fleet Services***

## MnDOT / CITY OF DULUTH FACILITY

### Summary

#### Leased portion of the building:

- Main shop: 16,800 sq.ft.
- Lunchroom: 392 sq. ft.
- Office: 420 sq.ft.
- Brine tank shed: 168 sq.ft.
- Cold storage: 4,000 sq.ft.
- Cold mix storage: 4,000 sq.ft.
- Salt shed: 2,240 sq.ft.
- Sign shed cold storage: 820 sq.ft.
- Sweeper broom cold storage: 820 sq.ft.



**Note:** This section does not include a summary of the building conditions since this is leased space and the condition of the building is quite good. There were no serious defects or building problems noted.

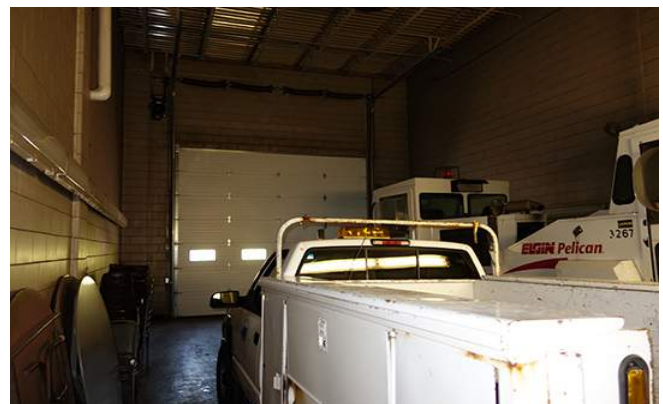
The general layout and configuration are also good, based on current public works planning and design.

The only factor, which may or may not be of concern, is that the energy efficiency may not be optimal or efficient. Based on assumptions, the insulation value of the walls may be under current code. The insulation value of the roof is uncertain, without more review and evaluation.



### Conditions Assessment

The building is used by MnDOT and the city of Duluth, with a shared center drive lane essentially separating the MnDOT space from the city space. (Note that the water on the vehicle area floor, photo to the right, had just been cleaned.)



Staff areas are in good condition, well laid out and relatively neat. Although short of exterior views and daylighting, the staff areas serve their purpose.



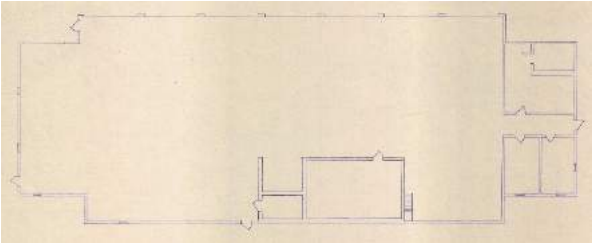
The site elements (paving, salt storage and site storage) are also in good condition. Note that the salt storage structure is an older MnDOT prototype, which includes a steel building exterior. MnDOT now uses fabric type structures, partially to avoid salt corrosion on the metal.



***End of review- Joint MnDOT/ City of Duluth Facility***

## LUND- WESTERN SATELLITE TOOLHOUSE

### Summary

Category	Findings	Recommendations/ results
<b>Components</b>	<p><b>Main building:</b> vehicle storage / office</p> <p><b>Salt storage:</b> salt stored in shed and stored on asphalt with tarp cover</p> <p><b>Cold storage:</b> open storage</p>	<p>This main building should be replaced as opposed to renovated, if a consolidation is being considered. In addition, this facility should either be increased in size. With a consolidation, the building will need some improvements but no additional space.</p> <p>The salt storage structure should be replaced and greatly increased in size. Brine tanks should be provided.</p> <p>The existing structure is in reasonable condition and can be used for the limited purpose of cold storage.</p>
<b>Space/area</b>	<p><b>Main building:</b> Current size: 10,200 sq.ft.</p> <p><b>Salt storage:</b> Current capacity: very undersized</p> <p><b>Cold storage:</b> Current capacity: not available</p>	
<b>Conditions</b>	<p><b>Main building:</b> Building shell: fair to poor Floors: marginal Roof: fair to poor Doors, components: very good to fair HVAC: Fair to marginal (see note below) Electrical: fair, lighting poor Energy efficiency: poor</p> <p><b>Salt building:</b> marginal to poor</p> <p><b>Cold storage:</b> fair</p>	<p>In general, this building is in the worst shape of all being assessed relative to energy consumption, air quality, light quality, shell condition and so on.</p>
<b>Shortcomings concerns</b>	<p>Inadequate ventilation Overhead doors face north Openings/gaps throughout building Double handling of equipment Exit way blocked Concerns over site piled salt run-off</p>	<p>Code and health shortcomings should be addressed but any considerable renovation should be delayed until complete replacement is considered.</p>

As noted elsewhere in this report, the east and western tool house locations are important for efficient operations and proper coverage of the city. This facility has a number of drawbacks, condition issues, energy concerns and related negatives. In some ways, the building has out-served its useful life. Some thought should be given whether or not it is more effective over the long term to replace rather than upgrade and repair. A simple direction on this would be to hold off on any expensive upgrades or repairs and then outweigh the costs for this to remain into the distant future as opposed to replacement.

## Building and Site Assessment

The building is a pre-engineered metal building, which is not intended for extended/ long-term use. This type of building is relatively inexpensive to build and ultimately has problems such as leaking roofs and walls. These are currently quite evident.

The insulation value is marginal to start with but existing gaps, moisture penetration and other factors result in this building being an energy hog.

The photo to the right illustrates daylight shining between the top of the metal wall and the covered insulation above (taken from indoors): It is hard to maintain a good thermal envelope with this type of thing and even harder to properly repair.

Although there is a dedicated vehicle exhaust system, the building lacks a proper automated make-up air system to maintain good air quality for the staff. Also, there is no pressurization to separate the vehicle areas from the staff areas. Ironically, if this were to have a better HVAC system, the energy costs would even be greater.

Storm water appears to seep in below the doors, even noticeable on sunny days. It does not help that the doors all face the north.





The condition of the concrete floors is marginal. There is pitting, likely due to the salt. There are many cracks, which will continue to spall and grow over time.

It appears that the trench drains had already been repaired in the past. Note the separate concrete pour around the drains.



The lighting in the building is poor, partially because of the quality and partially the quantity of the artificial lighting. There are few windows in the building. The location, size of the glazing is such that there is brightness contrast, as opposed to providing a uniform natural lighting.

In all, this is a grim and dimly lit space, not pleasant to work in and difficult to perform work due to the low quality of artificial and natural lighting.



The existing salt storage structure is marginal at best, whether it be function, orientation or quality.

The structure is oriented to the west, directly exposed to the prevailing winds, causing the pile to get wet and causing run-off.

It is also uncertain as to the structural stability but it is not good by any means.



There is also salt stored on site which is under cover, that being a tarp. In both case, the two salt locations fall short of good practice, with salt exposed to rain and run-off, potentially contaminating the surrounding environment. This is partially due to the quantity of material far exceeding the available space.



Not illustrated are the staff support areas (break room / office / restroom) but these are in marginal to poor condition, as the spaces shown above.

To reiterate, there are enough problems with this building that replacement someday should be considered.

When this assessment took place, not all the vehicles located here in the winter were yet in storage. In addition to the building issues, one can project that double handling of equipment is a regular occurrence.

***End of review- Lund Western Satellite Facility***

## TREE FARM- EASTERN SATELLITE TOOL HOUSE

### Summary

Category	Findings	Recommendations/results
<b>Components</b>	<p><b>Main building:</b> vehicle storage / office</p> <p><b>Salt storage:</b> None but important to include</p>	<p>Very little needs to be addressed at the building.</p> <p>Covered salt storage and brine tanks should be a strong consideration.</p>
<b>Space/area</b>	<p><b>Main building:</b> Current size: 3,800 sq.ft.</p>	<p>There is ample room at the site for the above mentioned items.</p>
<b>Conditions</b>	<p><b>Main building:</b> Building shell: very good Floors: good Roof: good Doors, components: good HVAC: good Electrical: good, lighting good Energy efficiency: fair to good</p>	
<b>Shortcomings concerns</b>	<p>Nothing major for the building Concerns over site piled salt run-off</p>	

As noted elsewhere in this report, the east and western tool house locations are important for efficient operations across the city, for use as support satellite stations. Unlike the Lund facility, the building on this site is in good condition and should serve the city for the next 20 years with minor maintenance. This is a pre-engineered building like Lund, but newer, better built and more up-to-date from a code standpoint.

A proper salt storage structure should be considered, as well as some covered storage for loose materials. Both of these items are relatively inexpensive in the scheme of things.

## Conditions Assessment

No major issues are noted.

Ideally, this structure would have been oriented differently. The overhead doors would be directed to the south, facing the sun and away from cold winter winds.



There is ample room at the site for a salt storage structure and dedicated heavy duty storage bins, which should be strongly considered. In this case, there is the opportunity to orient the opening of the salt structure away from prevailing winds.

Also note, depending on the overall long term use of brine equipment and use by the streets department, brine storage could also be a part of the total snow / ice control system.



The quality of the building system materials is on the lower end of the spectrum. At the interior, metal panels are used at the lower half of the walls with membrane covered batt insulation above this. While not quite that durable as preferred building systems, and harder to maintain over the long term, this is a serviceable space which did not cost too much, in relative terms, to construct.



An addition to the main vehicle storage room was constructed by city staff. Like the vehicle area, quite simple but serviceable and functional.



One minor issue is the width of the overhead doors, not wide enough to accommodate a fully equipped heavy duty plow truck with wings.



*End of review- Tree Farm/ Eastern Satellite Facility*

## OPERATIONAL COSTS

SITE	Yearly Average Electrical Cost (2012-2014)	Yearly Average Natural Gas Cost (2012-2013)	Total Average Energy Cost (Current)	Predicted Energy Costs (New Facility)
Facilities Building (33,630 sq. ft.)	\$9,967.21	\$9,171.14	\$20,407.54	\$25,000.00
Facilities- Paint Storage	\$177.37	NA		
Facilities- Site Amenities	\$1,091.82	NA		
40 <sup>th</sup> West- Tool House (19,800 sq. ft.)	\$7,310.70	\$11,541.71	\$20,362.01	\$20,000.00
40 <sup>th</sup> West- Cold Storage	\$884.52	NA		
40 <sup>th</sup> West- Site Amenities	\$625.08	NA		
42 <sup>nd</sup> West- Parks Tool Hs. (11,331 sq. ft.)	\$4,942.34	\$6,336.55	\$11,497.05	\$10,000.00
42 <sup>nd</sup> West- Site Amenities	\$218.16	NA		
Fleet Services Facility (20,000 sq. ft.)	\$14,725.79	\$10,126.97 * (includes 2012-2014)	\$24,852.76	\$22,000.00
MnDOT Joint Facility	Not applicable			

Notes:

1. This chart compares the current utility costs for the existing buildings relative to what they would be if a new, code compliant building were to be considered. Note that the relative annual energy costs are very close, one to another.
2. The main reason for has to do with air changes and air quality. During the assessment, the building at the 40<sup>th</sup> Street site was getting HVAC upgrades while the energy usage data was from the past. This is all significant because it takes a lot of energy to meet current codes and life safety concerns. For example, with a proper code-complaint mechanical system, when vehicles are in use, the air changes over about twice per hour. This means that, during the winter, outside cold air is being tempered and the internal warm air

exhausted, perhaps two or three hours per day. There is also quite a spike in electrical power usage when these make up air units are turned on.

3. Another factor in this is that most of the buildings are compact, with lower ceilings that would otherwise be preferred. An increase of ceiling height, which would be a part of any newly designed building, would increase the volume of the building by roughly 10% to 15%.
4. One building, at the remote Lund site is not included due to a lack of data. However, despite poor air quality, this would likely be the least efficient building, energy wise, due to lack of insulation, holes in the wall and gaps.
5. The Facilities Building indicates a current cost which is about 20% less than projected costs for a new building. The primary difference here is that the existing building is essentially three stories while the projected costs are for a single story building. The masterplan for a consolidated facility is a single story, for various reasons. If the new facility were multiple stories, not only this projected cost be reduced, so would other categories.
6. This portion of the study does not have much of an impact since this is an apples and oranges comparison, as noted above. It would be safe to say that, based on our experience in upgrading public works buildings, that an improvement in reduced energy costs would likely be 20% to 30% savings.
7. To continue with this topic, and as a reference point, an existing warehouse building in the city of Edina was converted to use as a public works building, roughly 140,000 square feet in size. The project was an extensive renovation which included all new mechanicals, insulation, roofing and so on. As this report is being concluded, the city is conducting an energy audit. The initial conclusion is that energy savings are considerable and all the work performed to improve conditions is effective.

## COST ESTIMATE

### CITY OF DULUTH PUBLIC WORKS STUDY: PROJECT COST ESTIMATE

**HARD CONSTRUCTION ONLY**  
**MAIN FACILITY**

Division	Item	Quantity	Unit Cost	Sub-total	Total	Notes
<b>#01</b>	<b>GENERAL CONDITIONS</b>				<b>\$2,300,000.00</b>	
	GC, permit, O & P, etc.			\$2,300,000.00		Assume CM fee between 3% and 4% + all GCs supervision, permits, fees, prevailing wages
	Bonds, insurance			\$0.00		P & L bonds, insurance (w/above)
<b>#02</b>	<b>SITEWORK</b>				<b>\$2,510,000.00</b>	
	Earthwork			\$780,000.00		Assumes no soil correction, no hazardous costs
	Paving			\$1,200,000.00		4"+ thick at most areas, 2" at staff parking
	Site concrete			\$105,000.00		Area of paving could be cut back by 10% to 20%
	Utilities			\$210,000.00		Aprons, slabs, curbs, gutters
	Fencing, gates			\$95,000.00		Black coated wire at selected areas, motorized gates
	Landscaping			\$120,000.00		
<b>#03</b>	<b>CONCRETE</b>				<b>\$3,135,000.00</b>	
	Footings and slabs			\$1,650,000.00		6" reinforced at vehicle areas, 4" elsewhere
	Pre-cast wall panels			\$1,480,000.00		Middle grade, exposed aggregate
	Misc.			\$5,000.00		Topping, housekeeping pads
<b>#04</b>	<b>MASONRY</b>				<b>\$850,000.00</b>	
	CMU Walls and misc. masonry			\$850,000.00		Stone or brick at office area only
<b>#05</b>	<b>STEEL</b>				<b>\$2,100,000.00</b>	
	Columns, beams			\$2,100,000.00		based on tonnage
	Misc. Metals					w/above
<b>#06</b>	<b>WOOD, PLASTIC</b>				<b>\$115,000.00</b>	
	Rough carpentry			\$115,000.00		
	Finish carpentry, millwork			\$0.00		w/above, plastic laminate cabinets
<b>#07</b>	<b>THERMAL / MOISTURE</b>				<b>\$1,366,000.00</b>	
	Waterproofing (square feet)			\$0.00		w/below
	Roofing (square feet)			\$1,350,000.00		
	Sheet metal (lineal feet)			\$0.00		w/ above
	Joint sealers			\$16,000.00		
<b>#08</b>	<b>OPENINGS</b>				<b>\$763,000.00</b>	
	Entrances: alum.			\$0.00		w/curtainwall and storefront
	Storefront / curtainwall			\$320,000.00		Mostly at the office area
	Doors / frames / hardware			\$128,000.00		
	OH doors			\$315,000.00		HD operable, loops, selected glass sections
<b>#09</b>	<b>FINISHES</b>				<b>\$448,000.00</b>	
	Gyp walls			\$68,000.00		Limited, selected office area
	flooring			\$130,000.00		Various: concrete, tile, carpet
	Acoustic ceilings (square feet)			\$35,000.00		
	Painting (square feet)			\$215,000.00		Ceilings at vehicle storage only
<b>#10</b>	<b>SPECIALTIES</b>				<b>\$104,000.00</b>	
	Toilet partitions and accessories			\$12,000.00		
	Benches, lockers, brackets, etc.			\$52,000.00		
	Appliances and minor equipment			\$25,000.00		
	Misc.			\$15,000.00		
<b>#11</b>	<b>EQUIPMENT</b>				<b>\$1,075,000.00</b>	
	Lifts, hoists, crane		\$890,000.00	\$0.00		7 large HD lifts (50000 -75000 lb), 10 small lifts (120000)
	Wash bay equipment		\$185,000.00	\$0.00		two large 5 ton bridge, monorail one 1 ton hoist at shop Automated, under-carrriage with dryer
<b>#12</b>	<b>FURNISHINGS</b>				<b>\$75,000.00</b>	Listed here but purchased outside of main contract
	Systems furniture			\$75,000.00		



Division	Item	Quantity	Unit Cost	Sub-total	Total	Notes
#13	CONVEYING EQUIPMENT				\$0.00	with #11 above
#21	FIRE SUPPRESSION				\$220,000.00	
#22	PLUMBING				\$2,800,000.00	fixtures, piping, floor drains, pit, lube system
#23	HVAC				\$2,900,000.00	Make-up air units, exhaust, and all other HVAC
#26	ELECTRICAL				\$2,300,000.00	
	Main building construction only					
	<b>TOTAL OF ALL DIVISIONS</b>				<b>\$23,061,000.00</b>	
<b>OTHER</b>	<b>HARD CONSTRUCTION COSTS</b>					
	Cold Storage: 35,600 sf				\$2,300,000.00	Could be less dependant on code/ordinance/scope
	Bins, loading				\$88,000.00	
	Wash Bay (w/out equipment)				\$1,350,000.00	
	Brine, Salt shed and equipment				\$550,000.00	Salt shed is similar to that at existing PW site. If existing is relocated, deduct \$170,000.00 Precast brine building, tempered w/equipment
	Fueling system				\$200,000.00	6 dual dispensers, 2 tanks
	Shelter for animals				\$120,000.00	heated, w/wash-down, cages
	<b>TOTAL OF ABOVE ITEMS</b>				<b>\$4,608,000.00</b>	
	<b>TOTAL OF ALL HARD CONSTRUCTION</b>				<b>\$27,669,000.00</b>	
<b>OTHER</b>	<b>SOFT COSTS</b>					
	Survey, borings, engineering				\$44,000.00	
	A/E fees and expenses				\$1,850,000.00	A/S/M/E/C, interior design, expenses
	Special inspections, testing				\$73,000.00	
	Furnishings				\$0.00	w/ item #12 above
	Permits / charges not included above				\$16,000.00	
	<b>TOTAL OF SOFT COSTS</b>				<b>\$1,983,000.00</b>	
	Suggested contingency				\$1,000,000.00	
	<b>TOTAL COST ESTIMATE</b>				<b>\$30,652,000.00</b>	<b>ALL ITEMS</b>
	Note: If cost is a driver, there are ways of reducing costs without too great a sacrific, perhaps by \$800,000.00 to \$1,000,000.00.					

**APPENDIX C – ARCHITECT AGREEMENT TEMPLATE  
CITY OF DULUTH  
RFP# 24-99697**

## AGREEMENT

**Vendor**  
&  
City of Duluth

THIS AGREEMENT, effective as of the date of attestation by the City Clerk (the “Effective Date”), by and between the City of Duluth, hereinafter referred to as Owner, and [insert architects’ name – did you check debarment?] located at [insert architects’ address], hereinafter referred to as Architect for the purpose of rendering services to the City.

WITNESSETH THAT:

WHEREAS, it is the intention of the City to undertake development of a public facility; and  
WHEREAS, the City desires to engage the Architect to render certain architectural services in connection with such undertakings;

NOW, THEREFORE, the parties hereto do mutually agree as follows:

- I. The Architect shall develop and prepare and/or administer the necessary design development, construction and bidding documents required for **Project, address**, herein after referred to as the “Project,” as directed by the Property & Facilities Manager. The specific services are those described below, as limited by the Proposal entitled “**Project Name,**” submitted by Architect, dated **DATE**, and identified as Exhibit A, which is made a part hereof, in accordance with the Terms and Conditions of this Agreement; **Resolution No. passed on date.**
- II. The Owner shall compensate the Architect, in accordance with the Terms and Conditions of this Agreement.
- III. The Owner and Architect agree in accordance with the Terms and Conditions of this Agreement that:
  - A. If the Scope of the Project is changed materially, compensation shall be subject to renegotiation.

## TERMS AND CONDITIONS OF AGREEMENT BETWEEN OWNER AND ARCHITECT

### ARTICLE 1.

#### Architect's Services

## Basic Services

1.1 The Architect's Basic Services consist of the six phases described below and include normal structural, mechanical, electrical, and civil engineering services and any other services except "Additional Services" as defined in Article 1.2.

1.1.1 The Architect's services consist of those services performed by the Architect, Architect's employees, and Architect's consultants as enumerated in this Agreement and any other services included in Article 12.

1.1.2 The Architect's services shall be performed as expeditiously as is consistent with professional skill and care and the orderly progress of the Work. Upon request of Owner or its agent, the Architect shall submit for Owner or its agent's approval a schedule for the performance of the Architect's services which may be adjusted as the Project proceeds, and shall include allowances for periods of time required for Owner or its agent's review and for approval of submissions by authorities having jurisdiction over the Project. Time limits established by this schedule approved by Owner or its agent shall be adhered to by the Architect.

1.1.3 The services covered by this Agreement are subject to the time limitations contained in this Agreement or attachments made a part hereof. The deadline for project completion is **DATE**.

## Schematic Design Phase

1.1.4 The Architect shall review the program requirements furnished by the Owner to ascertain the requirements of the Project and shall present such requirements to the Owner for approval.

1.1.5 Based on the mutually agreed upon program, the Architect shall prepare for approval by Owner Schematic Design Studies consisting of drawings and other documents illustrating the scale and relationship of Project components.

1.1.6 The Architect shall submit to the Owner a Statement of Probable Construction Cost based on current area, volume or other unit costs.

## Design Development Phase

1.1.7 The Architect shall prepare from the Schematic Design Studies the Design Development Documents consisting of drawings and other documents to fix and describe the size and character of

the entire Project as to structural, mechanical, electrical and any other appropriate systems, and materials and such other essentials as may be appropriate. The Architect shall submit such Design Development Documents to the Owner for approval, and shall not commence work on the Construction Documents until such time as the Owner shall direct.

1.1.8 The Architect shall submit to the Owner a further Statement of Probable Construction Cost. Statements of Probable Construction Cost and Detailed Cost Estimates prepared by the Architect represent his or her best judgment as a design professional familiar with the construction industry.

#### Construction Documents Phase

1.1.9 The Architects shall prepare from the approved Design Development Documents, and any changes in the scope of the Project then authorized by Owner, Drawings and Specifications setting forth in detail the requirements for the construction of the entire Project, including the necessary bidding information, and shall assist in the preparation of bidding forms, the General Conditions and Special Conditions of the Contract or Contracts, and the form of the Agreement between the Owner and the Contractor, as requested by the Owner. The Architect shall prepare necessary specifications and related bidding documents in final form. The Architect shall submit such Construction Documents to the Owner for approval, and shall not commence to advertise for bids or prepare for construction of the Project until such time as the Owner shall direct.

1.1.10 The Architect shall advise the Owner of any adjustments to previous Statements of Probable Construction Cost indicated by changes in requirements or general market conditions.

1.1.11 The Architect shall assist the Owner in filing the required documents for the approval of governmental authorities having jurisdiction over the project.

#### Bidding Phase

1.1.12 The Architect, following the Owner's approval of the Construction Documents and of the latest Statement of Probable Construction Cost, shall assist the Owner in obtaining bids or negotiated proposals, and in awarding and preparing contracts for construction.

#### Construction Phase

1.1.13 The Construction Phase will commence with the award of the Construction Contract or Contracts and will terminate when the final payment is issued to the Contractor or Contractors by the Owner.

1.1.14 During the Construction Phase, the Architect shall advise and consult with the Owner concerning the Contractor's or Contractors' compliance with the Drawings and Specifications setting forth the requirements for the construction of the entire Project.

1.1.15 To the extent set out in this Agreement, the Architect shall have authority to act on behalf of the Owner during or in connection with his visits to the site of the Work. The Architect shall have a duty to protect the interests of the Owner, or to observe conformance with Contract Documents.

1.1.16 The Architect shall at all-time have access to the Work wherever it is in preparation or progress.

1.1.17 The Architect shall visit the site of the work at intervals appropriate to the stage of construction in order to familiarize himself generally with the progress and quality of the Work and to determine in general if the Work is proceeding in accordance with the Contract Documents. The Architect shall endeavor to guard the Owner against defects or deficiencies in the work of the Contractor or Contractors, but the Architect shall not be required to make exhaustive or continuous on-site inspections to examine the quality or quantity of the Work. Based on on-site inspections, Architect shall advise Owner of the progress and quality of the Work. The Architect shall not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, and he shall not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents.

1.1.18 The Architect shall determine the amounts owing to the Contractor based on observations at the site and on evaluations of the Contractor's Applications for Payment, and shall issue Certificates for Payment in such amounts, as provided in the Contract Documents.

1.1.19 The issuance of a Certificate for Payment shall constitute a representation by the Architect to the Owner, based on the Architect's observations at the site, and on the data comprising the Contractor's Application for Payment, that the Work has progressed to the point indicated; that, to the best of the Architect's knowledge, information, and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work for conformance with the Contract

Documents upon Substantial Completion, to the results of any subsequent tests required by or performed under the Contract Documents, to minor deviations from the Contract Documents correctable prior to completion, and to any specific qualifications stated in the Certificate for Payment); and that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment shall not be a representation that the Architect has made any examination to ascertain how and for what purpose the Contractor has used the monies paid on account of the Contract Sum.

1.1.20 The Architect shall be the interpreter of the requirements of the Contract Documents and the judge of the performance thereunder by the Contractor. The Architect shall render interpretations necessary for the proper execution or progress of the Work with reasonable promptness on written request of either the Owner or the Contractor, and shall render written interpretations, within a reasonable time, on all claims, disputes, and other matters in question between the Owner and the Contractor relating to the execution or progress of the Work or the interpretation of the Contract Documents.

1.1.21 Interpretations of the Architect shall be consistent with the intent of and reasonably inferable from the Contract Documents and shall be in written or graphic form. In the capacity of interpreter, the Architect shall endeavor to secure faithful performance by the Contractor.

1.1.22 The Architect shall have authority to reject Work which does not conform to the Contract Documents. Whenever, in the Architect's reasonable opinion, it is necessary or advisable for the implementation of the intent of the Contract Documents, the Architect will have authority to require special inspection or testing of the Work in accordance with the provisions of the Contract Documents, whether or not such Work be then fabricated, installed, or completed.

1.1.23 The Architect shall review and approve or take other appropriate action upon the Contractor's submittals such as shop drawings, product data, and samples, but only for conformance with the design concept of the Work and with the information given in the Contract Documents. Such action shall be taken with reasonable promptness so as to cause no delay. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

1.1.24 The Architect shall prepare change orders for the Owner's approval and execution in accordance with the Contract Documents, and shall have authority to order minor changes in the

Work not involving an adjustment in the Contract Sum or an extension of the Contract Time which changes are not inconsistent with the intent of the Contract Documents.

1.1.25 The Architect shall conduct inspections to determine the dates of substantial completion and final completion, shall receive and forward to the Owner for the Owner's review written warranties and related documents required by the Contract Documents and assembled by the Contractor, and shall issue a final Certificate for Payment.

1.1.26 The extent of the duties, responsibilities, and limitations of authority of the Architect as the Owner's representative during construction shall not be modified or extended without written consent of the Owner and the Architect.

#### Post Construction Phase

1.1.27 Assist in project orientation of Owner and users and conduct warranty inspections.

#### Additional Services

1.2 The following services shall be provided when authorized in writing by the designated representative of the Owner. An additional service is one that is not described in Section 1 of this Agreement or documents referred to therein. The Architect shall advise the Owner when any service is considered additional, and the method and/or amount of compensation shall be determined prior to any additional services being undertaken. Any additional service performed without prior approval of the Owner, in writing, shall be done at no additional charge to the Owner. Accurate records of all expenses attributed to additional services shall be maintained by the Architect.

1.2.1 Providing analyses of the Owner's needs, and programming the requirements of the Project.

1.2.2 Providing financial feasibility or other special studies other than construction cost.

1.2.3 Providing planning surveys, site evaluations, environmental studies or comparative studies of prospective sites in addition to those set out in the construction documents or this Agreement.

1.2.4 Providing design services relative to future facilities, systems and equipment which are not intended to be constructed as part of the Project.

1.2.5 Providing services to investigate existing conditions or facilities, or to make measured drawings thereof, or to verify the accuracy of drawings or other information furnished by the Owner.



- 1.2.6 Preparing documents for alternate bids or out-of-sequence services requested by the Owner.
- 1.2.7 Providing detailed quantity surveys or inventories of material, equipment and labor.
- 1.2.8 Providing interior design and other services required for or in connection with the selection of furniture and furnishings.
- 1.2.9 Providing services for planning tenant or rental spaces.
- 1.2.10 Making revisions in Drawings, Specifications or other documents when such revisions are inconsistent with written approvals or instructions previously given and are due to causes beyond the control of the Architect.
- 1.2.11 Preparing supporting data and other services in connection with change orders, provided the change orders are due to causes beyond the control of the Architect and require architectural services beyond the preparation and distribution of the change order documents.
- 1.2.12 Making investigations involving detailed appraisals and valuations of existing facilities, and surveys or inventories required in connection with construction performed by the Owner.
- 1.2.13 Providing consultation concerning replacement of any Work damaged by fire or other cause during construction, and furnishing professional services of the type set forth in Paragraph 1.1 as may be required in connection with the replacement of such Work.
- 1.2.14 Providing professional services made necessary by the default of the Contractor or by major defects in the Work of the Contractor in the performance of the Construction Contract.
- 1.2.15 Preparing a set of reproducible record prints of drawings showing significant changes in the Work made during the construction process, based on marked-up prints, drawings and other data furnished by the Contractor to the Architect.
- 1.2.16 Providing extensive assistance in the utilization of any equipment or system such as initial start-up or testing, adjusting and balancing, preparation of operation and maintenance manuals, training personnel for operation and maintenance, and consultation during operation.
- 1.2.17 Providing services after issuance to the Owner of the final Certificate for Payment, except as delineated in Paragraph 1.1.27.
- 1.2.18 Preparing to serve or serving as an expert witness in connection with any public hearing, arbitration proceeding or legal proceeding.
- 1.2.19 Providing services of professional consultants for other than the normal structural,

mechanical, electrical, and civil engineering services for the Project.

1.2.20 Providing any other services not otherwise included in this Agreement or not customarily furnished in accordance with generally accepted architectural practice.

## ARTICLE 2.

### The Owner's Responsibilities

2.1 The Owner shall provide full information, including a complete program, regarding his requirements for the Project.

2.2 The Owner shall designate, when necessary, a representative authorized to act in his behalf with respect to the Project. The Owner shall examine documents submitted by the Architect and shall render decisions pertaining thereto promptly, to avoid unreasonable delay in the progress of the Architect's services.

2.3 The Owner shall furnish a certified land survey of the site giving, as applicable, grades and lines of streets, alleys, pavements and adjoining property; rights-of-way, restrictions, easements, encroachments, zoning, deed restrictions, boundaries and contours of the site; locations, dimensions and complete data pertaining to existing buildings, other improvements and trees; and full information concerning available service and utility lines both public and private, above and below grade, including inverts and depths.

2.4 The Owner shall furnish the services of a soils engineer or other consultant when such services are deemed necessary by the Architect, including reports, test borings, test pits, soil bearing values, percolation tests, air and water pollution tests, ground corrosion and resistivity tests and other necessary operations for determining subsoil, air and water conditions, with appropriate professional recommendations.

2.5 The Owner shall furnish structural, mechanical, chemical and other laboratory tests, inspections and reports as required by law or the Contract Documents.

2.6 The Owner shall furnish such legal, accounting, and insurance counseling services as may be necessary for the Project and such auditing services as he may require to ascertain how or for what purposes the Contractor has used the monies paid to him under the Construction Contract.

2.7 The services, information, surveys and reports required by Paragraphs 2.3 through 2.6

inclusive shall be furnished at the Owner's expense, and the Architect shall be entitled to reasonably rely upon the accuracy and completeness thereof.

2.8 If the Owner becomes aware of any fault or defect in the Project or non-conformance with the Contract Documents, he shall give prompt written notice thereof to the Architect.

2.9 The Owner shall furnish information required of him as expeditiously as necessary for the orderly progress of the Work.

### ARTICLE 3.

#### Construction Cost

3.1 A fixed limit of **Construction Cost of Dollar Amount Dollars (\$)**, which includes a bidding contingency of 10%, is hereby established as a condition of this Agreement, and it shall be the Architect's responsibility to endeavor to maintain the cost of construction within that amount, unless another amount is agreed upon in writing. The construction cost is the total cost to the Owner of all Work designed or specified by the Architect and shall be determined as follows:

3.1.1 The lowest bona fide bid received from a qualified bidder for any or all of such work.

3.1.2 Construction Cost does not include the compensation of the Architect and his consultants, the cost of land, right-of-way, or other costs which are the responsibility of the Owner as provided in Paragraph 2.3 through 2.6 inclusive.

3.1.3 If the Bidding or Negotiating Phase has not commenced within six (6) months after the Architect submits the Construction Documents to the Owner, any fixed limit of Construction Cost established as a condition of this Agreement shall be adjusted to reflect any change in the general level of prices which may have occurred in the construction industry for the area in which the Project is located. The adjustment shall reflect changes between the date of submission of the Construction Documents to the Owner and the date on which proposals are sought.

3.1.4 If the fixed limit of Construction Cost, including the bidding contingency (adjusted as provided in subparagraph 3.1.3, if applicable) is exceeded by the lowest bona fide bid, the Owner shall cooperate in revising the Project scope and quality as required to reduce the Probable Construction Cost. The Architect, without additional charge, shall modify the Drawings and Specifications and assist in rebidding the Project as necessary to bring the Construction Cost within

the fixed limit.

#### ARTICLE 4.

##### Compensation

4.1 It is expressly agreed and understood that in no event shall the total amount to be paid by the Owner to the Architect under this Agreement exceed **Dollar Amount Dollars (\$ )** for full and complete satisfactory performance, unless specified by means of written amendments to this Agreement as provided for herein.

4.2 Compensation to be paid by the Owner to the Architect for the Architect's services specified in Paragraphs 1.1.1 through 1.1.12 shall in no event exceed **Dollar Amount Dollars (\$ )**.

4.3 Compensation to be paid by the Owner to the Architect for the Architect's services specified in paragraphs 1.1.13 through 1.1.27 above shall be computed on the same basis as for Additional Services as outlined in Paragraph 4.4; however, that in no event shall such compensation exceed **Dollar Amount Dollars (\$ )**.

4.4 For Additional Services, as described in Paragraphs 1.2.1 through 1.2.20 above, if such services are authorized and if funds are provided therefore in Paragraph 4.6 below, compensation up to the authorized amount shall be computed as follows, unless an Exhibit B is attached hereto which supersedes the following:

- a. Principal's time at the fixed rate of **\$ per hour**. For the purpose of this Agreement, the Principal(s) is **NAME**.
- b. Employees' time (other than Principals) at a multiple of one and nine-tenths (1.9) times the employees' Direct Personnel Expense. (Direct Personnel Expense is defined as the salaries of professional, technical and clerical employees engaged on the project by the Architect, and the prorated cost of their mandatory and customary benefits such as statutory employee benefits, insurance, sick leave, holidays, vacations, pensions and similar benefits.)
- c. Services of professional consultants at a multiple of one and one-quarter (1 1/4) times the amount billed to the Architect for such services.

4.5 Reimbursable Expenses, if such expenses are authorized and if funds are provided therefore in Paragraph 4.6 below, are in addition to the Compensation for Basic and Additional Services and

include actual expenditures made by the Architect, his employees or his professional consultants in accordance with the provisions of any written amendments to this Agreement, for the expenses listed in the following Subparagraphs:

- a. Expense of transportation and living when traveling in connection with the Project (does not include travel from Architect's office to Duluth if Architect's business is not located in the Duluth metro area); and fees paid for securing approval of authorities having jurisdiction over the Project.
- b. Expense of Bid Document reproductions in the number of sets as requested by Owner.
- c. If authorized in advance by the Owner, expense of overtime work requiring higher than regular rates and expense of renderings or models for the Owner's use.

4.6 It is agreed and understood that Additional Services and Reimbursable Expenses shall be compensated by the Owner only up to the following amounts:

- a. **Additional Services** \$.
- b. **Reimbursable Expenses** \$.

## ARTICLE 5.

### Payments

5.1 The Owner shall make payments under this Agreement charging such amounts as follows:

Funding \_\_\_ - \_\_\_ - \_\_\_ - \_\_\_.

5.1.1 Payments to the Architect for the services specified herein shall be made monthly upon presentation of a requisition for payment so that the compensation at the completion of each Phase shall equal the following percentages of the total compensation for services provided under Article 1, Paragraphs 1.1 through 1.1.12 inclusive:

- Schematic Design Phase --15%
- Design Development Phase --20%
- Construction Documents Phase --40%
- Completion of Bidding Phase --5%.
- Construction Administration Phase--20%

5.1.2 If the Contract Time initially established in the Construction Contract is exceeded by more

than thirty days through no fault of the Architect, compensation for Basic Services performed by Principals, employees and professional consultants required to complete the Administration of the Construction Contract beyond the thirtieth day shall be computed as set forth in Paragraph 4.6.

5.1.3 Payments for Additional Services of the Architect as defined in Paragraphs 1.2 through 1.2.20 and Paragraphs 1.1.13 through 1.1.28, and for Reimbursable Expenses as defined in Paragraph 4.4, shall be made monthly upon presentation of the Architect's statement of services rendered.

5.1.4 No deductions shall be made from the Architect's compensation on account of penalty, liquidated damages, or other sums withheld from payments to contractors.

5.1.5 If the Project is suspended for more than three months or abandoned in whole or in part, the Architect shall be paid his compensation for services performed prior to receipt of written notice from the Owner of such suspension or abandonment, together with Reimbursable Expenses then due and all termination expenses as defined in Paragraph 7.3 resulting from such suspension or abandonment. If the Project is resumed after being suspended for more than three months, the Architect's compensation shall be subject to renegotiation.

## ARTICLE 6.

### Architect's Accounting Records

6.1 Records of Reimbursable Expenses and expenses pertaining to Additional Services on the Project and for services performed on the basis of a Multiple of Direct Personnel Expenses shall be kept on a generally recognized accounting basis and shall be available to the Owner or his authorized representative at reasonable times.

## ARTICLE 7.

### Termination of Agreement

7.1 This agreement may be terminated in whole or in part in writing by either party in the event of substantial failure by the other party to fulfill its obligation under this agreement through no fault of the terminating party; provided that no such termination may be affected unless the other party is given not less than seven (7) calendar days prior written notice (delivered personally or by certified mail, return receipt requested) of intent to terminate.

7.2 This agreement may be terminated in whole or in part in writing by the City for its

convenience; provided that the Architect is given (1) not less than seven (7) calendar days prior written notice (delivered personally or by certified mail, return receipt requested) of intent to terminate and (2) an opportunity for consultation with the City prior to termination.

7.3 Upon receipt of a notice of intent to terminate from the City pursuant to this agreement, the Architect shall (1) promptly discontinue all services affected (unless the notice directs otherwise), and (2) make available to the City at any reasonable time at a location specified by the City all data, drawings, specifications, reports, estimates, summaries, and such other information and materials as may have accumulated by the Architect in performing this agreement, whether completed or in process.

7.4 Upon termination pursuant to this agreement, the City may take over the work and prosecute the same to completion by agreement with another party or otherwise.

7.5 In the event of termination by Owner pursuant to Paragraph 7.2 above, the Architect shall be paid his compensation for services performed to termination date, including reimbursable expenses then due and all reasonable termination expenses.

7.6 Termination expenses are defined as reimbursable expenses directly attributable to termination, plus an amount computed as a percentage of the total compensation earned to the time of termination, as follows:

- 20 percent if termination occurs during the Schematic Design Phase; or
- 10 percent if termination occurs during the Design Development Phase; or
- 5 percent if termination occurs during any subsequent phase.

## ARTICLE 8.

### Ownership of Documents and Expression

8.1 All drawings, specifications, reports, records, rights to copyright, and other work product developed by the Architect in connection with this Project shall remain the property of the City whether the Project is completed or not. Reuse of any of the work product of the Architect by the City on extensions of this Project or any other Project without written permission of the Architect shall be at the City's risk and the City agrees to defend, indemnify and hold harmless the Architect from all damages and costs including attorney fees to Architect arising out of any claim of a third

party against Architect which claim arises out of such reuse by the City or others acting through the City and which damage is directly caused by such abuse.

## ARTICLE 9.

### Successors and Assigns

9.1 The City and the Architect each binds their respective partners, successors, executors, administrators and assigns to the other party of this agreement and to the partners, successors, executors, administrators, and assigns of such other party, in respect to all covenants of this agreement; the Architect shall not assign, sublet, or transfer his or her respective interests in this agreement without the written consent of the City. Nothing herein shall be construed as creating any personal liability on the part of any officer or agent of any public body which may be a party hereto, nor shall it be construed as giving any rights or benefits hereunder to anyone other than the City and the Architect.

## ARTICLE 10.

### Extent of Agreement

10.1 This Agreement represents the entire and integrated agreement between the Owner and the Architect and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be amended only by written instrument dated and duly signed by both Owner and Architect.

## ARTICLE 11.

### Governing Law

11.1 Unless otherwise specified, this Agreement shall be governed by the applicable laws of the City of Duluth and State of Minnesota.

## ARTICLE 12.

### Changes

12.1 The Owner or the Architect may, from time to time, request changes in the scope of the



services to be performed hereunder. In order to be in force, such changes, including the increase or decrease in the amount of the Architect's compensation, which are mutually agreed upon by and between the Owner and the Architect, shall be incorporated in written amendments to this Agreement.

### ARTICLE 13.

#### Hold Harmless, Indemnification, and Insurance

13.1 To the fullest extent permitted by law, Architect agrees that it shall defend, indemnify, and hold harmless the City, its officers, employees, and agents, past or present, from and against any and all claims including but not limited to claims for contribution or indemnity, demands, suits, judgments, costs, and expenses (including attorneys' fees) asserted by itself or any person or persons including agents or employees of the City of Duluth or Architect by reason of death or injury to person or persons or the loss or damage to property arising out of, or by reason of, any act, omission, operation or work of Architect or its employees while engaged in the execution or performance of services under this Agreement. Said obligations to defend, indemnify, and hold harmless shall include, but not be limited to the obligation to defend, indemnify, and hold harmless the City in all matters where claims of liability against the City arise out of, relate to, are attributable to, are passive or derivative of, or vicarious to the negligent, intentional, or wrongful acts or omissions of Architect, including but not limited to the failure to supervise, breach of warranty, the failure to warn, the failure to prevent such act or omission by Architect, its employees, or its agents, and any other source of liability. Said obligations to defend, indemnify, and hold harmless shall be triggered upon the assertion of a claim for damages against City. On ten days' written notice from the City of Duluth, Architect shall appear and defend all lawsuits against the City of Duluth growing out of such injuries or damages. Architect shall not be required to indemnify City for amounts found by a fact finder to have arisen out of the sole negligent or intentional acts or omission of the City unless Architect should fail to comply with its insurance obligations in this contract to the detriment of City, in which case Architect shall indemnify, defend, and hold harmless the City for any and all amounts except amounts attributed to intentional, willful or wanton acts of the City.

This Section, in its entirety, shall survive the termination of this Agreement if any amount of work

has been performed by Architect. Nothing in this provision shall affect the limitations of liability of the City as set forth in Minnesota Statutes Chapter 466.

**Architect understands this provision may affect its rights and may shift liability.**

Architect shall defend and hold and save the City, its officers, employees, representatives and agents, and the Architect, harmless from liability of any nature or kind, including costs and expenses, for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the Contract, including its use by the City, unless otherwise specifically stipulated in the Technical Specifications.

13.2 The Architect shall obtain the following minimum amounts of insurance from insurance companies authorized to do business in the State of Minnesota:

- a. Worker's Compensation Insurance in accordance with the laws of the State of Minnesota.
- b. Commercial General and Automobile Liability Insurance with limits not less than **\$1,500,000** Single Limit shall be in a company approved by the city of Duluth; and shall provide for the following: Liability for Premises, Operations, Completed Operations, Independent Contractors, and Contractual Liability. Umbrella coverage with a “form following” provision may make up the difference between the commercial general and auto liability coverage amounts and the required minimum amount stated above.
- c. Professional Liability Insurance in an amount not less than **\$1,500,000** Single Limit; provided further that in the event the professional liability insurance is in the form of “claims made,” insurance, Architect hereby commits to provide at least 60 days’ notice prior to any change to the Professional Liability Insurance policy or coverage ; and in event of any change, Architect agrees to provide the City with either evidence of new insurance coverage conforming to the provisions of this paragraph which will provide unbroken protection to the City, or, in the alternative, to purchase at its cost, extended coverage under the old policy for the period the state of repose runs; the protection to be provided by said “claims made” insurance shall remain in place until the running of the statute of repose for claims related to

this Agreement.

d. **City of Duluth shall be named as Additional Insured** under the Commercial General and Automobile Liability policies. Architect shall also provide evidence of Statutory Minnesota Workers' Compensation Insurance. Architect to provide Certificate of Insurance evidencing such coverage with notice to City of cancellation in accordance with the provisions of the underlying insurance policy included. The City of Duluth does not represent or guarantee that these types of limits of coverage are adequate to protect the Architect's interests and liabilities..

13.3 Certificates showing that the Architect is carrying the above-described insurance in the specified amounts shall be furnished to the City prior to the execution of this agreement and a certificate showing continued maintenance of such insurance shall be filed with the City during the term of this agreement.

13.4 The City shall be named as an additional insured on each liability policy other than the Professional Liability and Worker's Compensation policies of Architect.

13.5 The certificates shall provide that the policies shall not be changed or canceled during the life of the agreement without advanced notice being given to the City at least equal to that provided for in the underlying policy of insurance. For the purposes of Section 13.2 of this Agreement, the term "change," shall include cancellation of a policy of insurance provided hereunder and any modification of such policy which reduces the amount of any coverage provided thereunder below the amounts required to be provided hereunder or otherwise reduces the protections provided under such policy to City.

#### ARTICLE 14.

##### General Conditions

14.1 This Agreement is subject to and incorporates the City Part II, "Supplemental General Conditions for Federally Assisted Activities" (latest edition), which is incorporated by reference.

14.2 This Agreement may be executed in two or more counterparts, each of which shall be deemed to be an original as against any party whose signature appears thereon, but all of which together shall constitute but one and the same instrument. Signatures to this Agreement transmitted by facsimile, by electronic mail in "portable document format" (".pdf"), or by any other electronic

means which preserves the original graphic and pictorial appearance of the Agreement, shall have the same effect as physical delivery of the paper document bearing the original signature.

ARTICLE 15.

Miscellaneous

15.1 Exhibit "A," dated **DATE**, is hereby incorporated into this Agreement.

15.2 Exhibit "   ," dated **DATE**, is hereby made a part of this Agreement.

TEMPLATE

IN WITNESS WHEREOF, the parties have hereunto set their hands on the date of attestation shown below.

**CITY OF DULUTH**

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

**[NAME OF CONSULTANT]**

Attest:

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

By: \_\_\_\_\_  
City Clerk

Its: \_\_\_\_\_  
Title of Representative

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

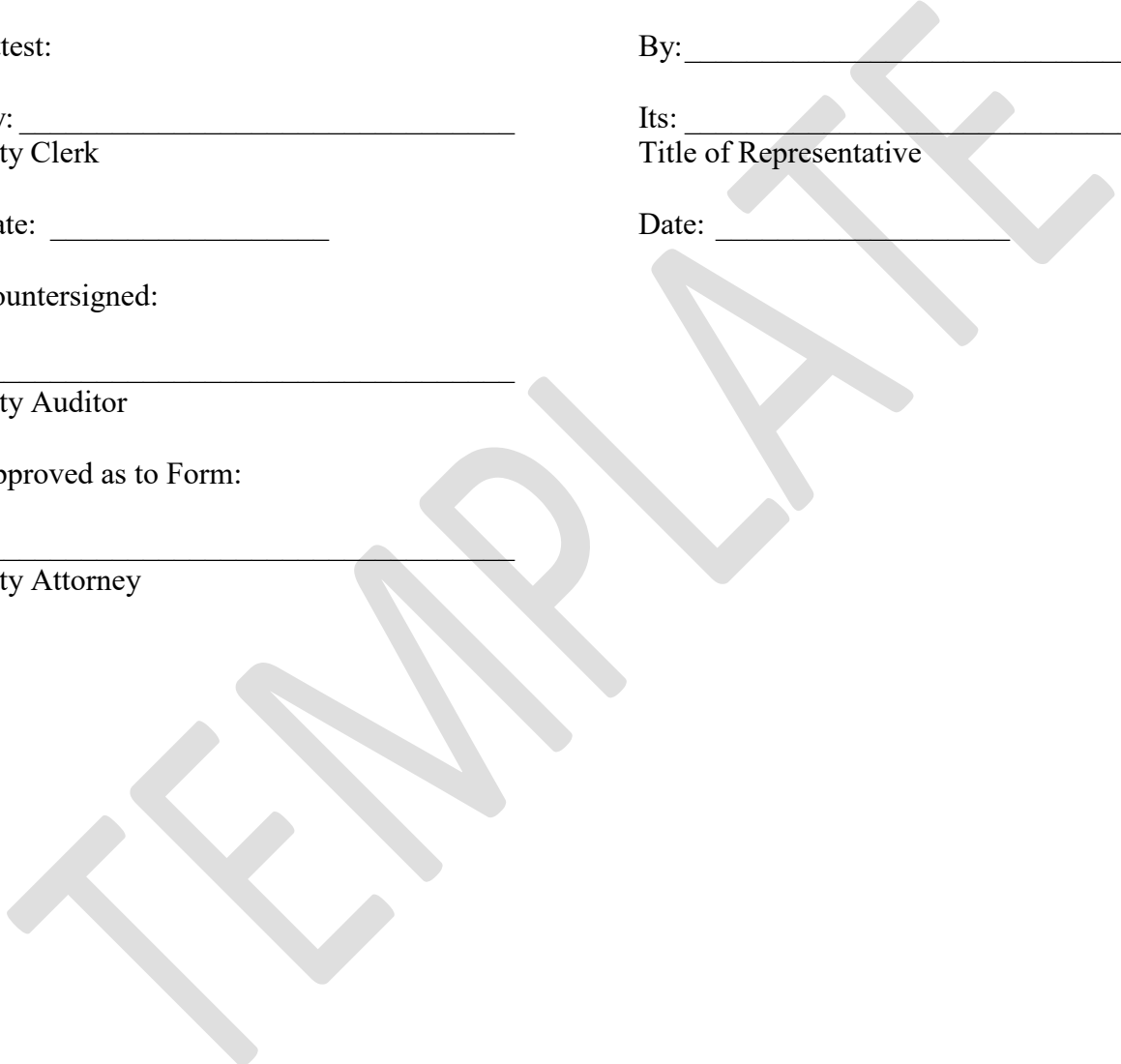
Date: \_\_\_\_\_

Countersigned:

\_\_\_\_\_  
City Auditor

Approved as to Form:

\_\_\_\_\_  
City Attorney



**APPENDIX D - CITY OF DULUTH: OWNER PERFORMANCE REQUIREMENTS  
CITY OF DULUTH  
RFP# 24-99697**

## City of Duluth Municipal Building Owner Performance Requirements

### Definitions:

**City owned buildings:** include all buildings within the City of Duluth building portfolio. Specifically, this includes buildings that are:

- Buildings that are directly owned by the City of Duluth, regardless of building construction or operation (e.g. Civic Center parking ramp)
- Enterprise-funded Buildings
- Conditioned buildings and semi-heated buildings regularly utilized by the City of Duluth

This definition is adopted to ensure real progress towards reducing our greenhouse house gas emissions across all City owned buildings. See attachment for full list.

**ASHRAE standard 90.1** is utilized to differentiate different types of buildings this policy:

- Semi-heated spaces: spaces that are heated, but not to comfort levels, and not cooled (for example, a pumphouse)
- Conditioned spaces: enclosed spaces that are heated or cooled for human occupancy
- Unconditioned spaces: enclosed spaces within a building that are not conditioned or semi-heated

### Policy:

**LOW PITCH ROOF ASSEMBLIES** – R- 50 MINIMUM WHERE BUILDING CAN HANDLE THE LOAD, FULLY ADHERED WHITE EPDM WHERE APPLICABLE. FULL TEAR DOWN: INCREASE INSULATION, AIR SEAL, AND VENTS REPLACED. REPLACEMENT: CASE BY CASE BASIS.

**ATTIC INSULATION** – FOR BOTH SEMI-HEATED AND CONDITIONED SPACES. CEILING/ATTIC MUST STRIVE FOR A VALUE OF R-80.

**ROOF LOAD CAPACITY** – ROOF DESIGNED TO ACCOMMODATE PV SYSTEM INCLUDING BALLAST (NEW CONSTRUCTION), CASE BY CASE BASIS FOR RENOVATIONS. GROUND MOUNT COULD BE SUBSTITUTED IF APPLICABLE.

**HVAC EQUIPMENT & CONTROL – WHENEVER MAJOR COMPONENTS OR SYSTEMS ARE REPLACED WHOLE SYSTEMS COMMISSIONING WILL BE CONSIDERED.** UTILIZE VARIABLE FREQUENCY DRIVES WHENEVER PRACTICAL. UPDATE TO MINIMUM OF 90% EFFICIENCY FOR COMBUSTION EQUIPMENT. ALL OTHER SPECIFICS CAN BE FOUND IN “SECTION 230923 – DIRECT DIGITAL CONTROL (DDC) SYSTEM FOR HVAC” IN THE ADDENDUM.

**STRATEGIC COMMISSIONING** - WHEN DESIGNING RENOVATION PROJECTS, RECOMMENDATIONS FOR STRATEGIC RETRO-COMMISSIONING OF HVAC SYSTEMS WILL BE CONSIDERED

**ENVELOPE DETAILING AND AIR SEALING - IN CASES OF MAJOR OR COMPLETE EXTERIOR ENVELOPE RENOVATIONS/RETROFITS, ENVELOPE COMMISSIONING WILL BE CONSIDERED.** THE FOLLOWING AREAS ARE TO BE WRAPPED, SEALED, CAULKED, GASKETED, OR TAPED: JOINTS AROUND FENESTRATION

AND DOOR FRAMES (BOTH MANUFACTURED AND SITE-BUILT), JUNCTIONS BETWEEN WALLS AND FOUNDATIONS, AT BUILDING CORNERS, AND ROOFS OR CEILINGS, PENETRATIONS FOR ROOFS, WALLS, AND FLOORS, BUILDING ASSEMBLIES USED AS DUCTS OR PLENUMS, JOINTS, SEAMS, CONNECTIONS BETWEEN PLANES, AND OTHER CHANGES IN AIR BARRIER MATERIALS.

**STRUCTURAL STEEL COMPONENTS** - DOMESTICALLY MANUFACTURED

**FLEXIBLE FUEL SYSTEM** - WHENEVER POSSIBLE THE INFRASTRUCTURE FOR FUTURE ELECTRIFICATION SHOULD BE BUILT INTO BUILDINGS AND SITES.

**PREMIUM EFFICIENCY ELECTRICAL COMPONENTS** - ELECTRICAL MOTORS, TRANSFORMERS AND SIMILAR EQUIPMENT WILL BE CHOSEN TO OPTIMIZE EFFICIENCY

**WINDOWS** - OVERALL UNIT U-0.25 OR LOWER. SOLAR HEAT GAIN COEFFICIENT OF 0.40 OR LESS WHERE PRACTICAL. BIRD SAFE GLASS AND STRIKE REDUCTION TECHNOLOGIES SHOULD BE EMPLOYED IN MAJOR BIRD MIGRATION ROUTES, SUCH AS ELIMINATING FLY-THROUGH CONDITIONS, DESIGNING BUILDINGS WITH A TOTAL WINDOW SURFACE AREA OF 25-40 PERCENT RELATIVE TO THE ENTIRE FACADE (LOW WINDOW TO WALL RATIO), AND CREATING VISUAL MARKERS. SEE THE CITY OF TORONTO'S GUIDE TO "BIRD FRIENDLY BEST PRACTICES GLASS" FOR GUIDANCE ON BIRD SAFE DESIGN.

**LIGHTING FIXTURES** - MUST BE LED OR MOST EFFICIENT ALTERNATIVE IF LED IS UNAVAILABLE. LIGHTING MUST BE AUTOMATICALLY CONTROLLED WHENEVER POSSIBLE. TIME OF DAY, OCCUPANCY, AND DAYLIGHTING SENSORS MUST ALSO BE INSTALLED WHENEVER POSSIBLE.

**STAIRWELLS** – MAXIMUM SIZE LIGHTS (WINDOWS) IN THE STAIRWAY DOORS TO ENCOURAGE STAIR USE AND IMPROVE SECURITY

**LOW FLOW FIXTURES** – SHOWERHEADS SHOULD USE 2.0 GALLONS PER MINUTE (GPM) OF WATER OR LESS. A FAUCET USES 1.5 GPM OF WATER OR LESS. WHERE POSSIBLE DUAL TOILETS SHOULD BE UTILIZED, AND ALL TOILETS SHOULD BE "LOW FLUSH" TOILETS, USING 1.28 GALLONS/FLUSH OR LESS WATER.

**HIGH EFFICIENCY HAND DRYERS** – RESTROOMS WITH HAND DRIERS SHOULD USE HIGH EFFICIENCY PRODUCTS

**RAINWATER/GREYWATER RECLAMATION** – MUST BE CONSIDERED WHERE PERMITTED, APPLICABLE, AND RATIONAL

**GENDER NEUTRAL RESTROOMS** – MUST PROVIDE CONVENIENTLY-LOCATED GENDER NEUTRAL RESTROOMS AND LACTATION ROOMS IN NEW PROJECTS AND MAJOR RENOVATIONS

**WATER HEATING** – POINT OF USE OR ON DEMAND WATER HEATING WHEREVER POSSIBLE – 6 GAL FOR JANITOR CLOSETS. ELECTRIFICATION OF WATER HEATING WILL BE PRIORITIZED.

**JANITOR CLOSETS** – AMPLE NUMBER, SIZE, AND LOCATIONS INCLUDED IN NEW PROJECTS AND MAJOR RENOVATIONS



**ALL APPLIANCES** - ENERGY STAR OR BETTER, WHEN RATED

**VENDING** – IF VENDING MACHINES ARE REQUIRED THEY MUST BE ENERGY STAR RATED

**CARPET TILES** – NO ROLLED GOODS

**LONG LIFE CYCLE/REDUCED MAINTENANCE** – DURABLE MATERIALS INTERIOR & EXTERIOR, WILL BE USED TO ENHANCE LONGEVITY AND REDUCE MAINTENANCE

**LOW MAINTENANCE** – ROBUST EQUIPMENT, MATERIALS & SYSTEMS – EASY ACCESS – AMPLE SIZED EQUIPMENT ROOMS – MORE ZONE VALVES, ISOLATION CAPABILITIES, ETC. – LOW MAINTENANCE LANDSCAPE

**HIGH EFFICIENCY DATA CENTER** – RUN DARK DESIGN, NO STAFF PERMANENTLY HOUSED IN DATA EQUIPMENT ROOM, HEAT RECLAMATION, RACK/EQUIPMENT LAYOUT CONSIDERATION (HOT AISLE/COOL AISLE & EQUIPMENT STACKING CONSIDERATIONS)

**ELECTRIC VEHICLE CHARGING** - WHERE APPROPRIATE, IN PARKING LOT, RAMP, OR CITY FLEET PARKING MAJOR RENOVATIONS OR NEW CONSTRUCTION, EV CHARGERS OR CHARGING INFRASTRUCTURE SHOULD BE IMPLEMENTED.

**PERSONAL APPLIANCE POLICY** - PLEASE CONTINUE TO FOLLOW THE PERSONAL AND CITY OWNED APPLIANCE POLICY INCLUDED IN THE ADDENDUM

**VEHICLE IDLING POLICY** - PLEASE CONTINUE TO FOLLOW THE VEHICLE IDLING POLICY INCLUDED IN THE ADDENDUM