

Public Works Center Welding Bay Exhaust & Tool Replacement

Project Feasibility Report

City Project No. 10839

January 26, 2026



Project Feasibility Report

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City Project #10839

City of Mankato EDA

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II. PROJECT CONTACTS

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City Manager	Susan Arntz	507.387.8695	sarntz@mankatomn.gov
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Facilities Manager	Dustin Bornholdt	507.387.8576	dbornholdt@mankatomn.gov
Facilities Project Coordinator	Ryan Thormodson	507.387.8437	rthormodson@mankatomn.gov

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III. EXECUTIVE SUMMARY

The scope of work our Public Works staff do on weekly basis is dependent on the readily available tools and equipment at their disposal. Outdated ventilation systems and tools make their department less efficient. The welding bay is a great example of that, and the existing heating and ventilation systems are not functional for the space or the work they perform.

Proper ventilation in a welding bay is essential to protect workers from toxic fumes, gases (like ozone and nitrogen oxides), and particulate matter that cause respiratory issues, cancer, and metal fume fever. It ensures compliance with OSHA and ACGIH exposure limits, maintains safe oxygen levels, improves visibility, and prevents fire hazards by removing combustible contaminants.

The heating and ventilation systems serving the welding bay within our Public Works Center are aging and in need of replacement. This proposed project includes replacing the welding station rotating ventilation arms, exhaust fans, electrical, and the make-up air unit that serves the welding bay.

The estimated cost of these necessary improvements is approximately \$300,000.

IV. PROJECT INTRODUCTION

The proposed project is to replace the aging equipment that provides heating and ventilation for our Public Works Center welding bay. The City Council has authorized the preparation of a project feasibility report to define the scope and determine the reasonableness of the project.

The specific objectives of this preliminary feasibility report are to:

- Evaluate the need for this project.
- Determine the necessary improvements.
- Provide information on the estimated costs for the proposed project.
- Determine the project schedule.
- Determine the feasibility of the proposed project.

This project, as proposed, involves replacing electrical, heating and ventilation equipment serving the Public Works Center welding bay:

- Demolition, removal, and proper disposal of existing electrical, heating and ventilation systems.
- Contractor to supply, install, and start-up of all associated equipment in the project per manufacturer's specification.
- Installation of an upgraded welding station ventilation system with a functional swivel arm to ensure proper ventilation and meet the OSHA standard 1926.353.
- Heating and ventilation duct guards will be installed, where applicable, to ensure our new vents are protected from being damaged in the garage bay and continue to meet the manufacturer's specifications.
- Exhaust fan controls that include carbon dioxide and nitrous dioxide sensors to ensure proper levels are maintained in space while in use by staff.
- Energy saving controls allow us to schedule the space and equipment to run in occupied and unoccupied modes in our continuing effort to be energy efficient.

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V. EXISTING CONDITIONS

The existing equipment in the Public Works Center welding bay has reached end-of-life (equipment obsolescence). When our ageing equipment reaches equipment obsolescence it can no longer be repaired due to the lack of available replacement parts. When Original Equipment Manufacturers (OEMs) cease production of parts businesses are left with functional, yet unrepairable equipment. The reasons Original Equipment Manufacturers cease production of parts is because they have moved on to new technologies or have gone out of business.

The existing equipment serving the welding bay has lost its functionality, this stems from physical degradation, component fatigue and obsolescence. This leads to increased repair costs, frequent breakdowns, and safety hazards. Common issues include unavailable spare parts, incompatibility with new systems, and reduced efficiency. Effective management requires proactive, risk-based maintenance and timely replacement strategies.

The current welding bay heating and ventilation system has limitations which include existing configuration, nonfunctioning equipment and obsolete equipment. Other limitations include the following:

- Lack of energy conservation capabilities.
- Lack of carbon monoxide and nitrous dioxide sensors.
- Lack of adequate ventilation systems.

VI. PROPOSED IMPROVEMENTS

The areas of proposed improvements associated with the Public Works Center welding bay equipment replacement project include exhaust fan arms, exhaust fans, safety controls, a make-up air unit for the welding bay and electrical upgrades to serve any associated equipment.

The proposed improvements for the exhaust fan arm replacements focus on enhancing maneuverability, stability, and extraction efficiency. Key innovations include multi-directional, articulated designs, improved friction joints, and specialized attachments. These advancements allow for precise positioning, easy cleaning, and better capture of fumes and particles in various environments.

The proposed improvements for the exhaust fan replacements focus on energy efficiency and replacing obsolete equipment we can no longer repair.

The proposed improvements for the make-up air unit (MAU) replacement focus on increasing energy efficiency, enhancing air tempering capabilities, improving control systems to optimize indoor air quality, and utilizing smart controls to monitor pressure, toxicity levels and air quality.

The proposed improvements for the electrical replacement ensure that the space and all associated equipment meet regulatory code requirements.

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VII. APPROVALS/PERMITS

Approvals and permits are required from various agencies for the construction of the project. They include:

- Electrical Permit
- Building Permit

VIII. PROJECT COST ESTIMATE AND FINANCING

Estimated projections for the cost of this project are summarized below.

ITEM	COST
(5) Exhaust Fans	\$30,000
(3) Exhaust Arms	\$18,000
Make Up Air Unit	\$30,000
Controls	\$35,000
Installation	\$152,000
TOTAL CONSTRUCTION	\$265,000
Design	\$8,500
Construction Contingency	\$26,500
TOTAL PROJECT COST	\$300,000

Funding for the proposed improvements is shown in the table below.

FUNDING SOURCE	AMOUNT	PERCENT
Facilities Capital	\$300,000	100%
TOTAL FUNDS	\$300,000	100%

IX. POSSIBLE SCHEDULE

The following is a tentative schedule for the proposed heating and ventilation improvements at the Public Works Center:

02/20/2026	Advertise for Bids
03/13/2026	Bid Opening
03/23/2026	Bid Award
03/27/2026	Contractor Purchases Long-Lead Item Equipment
06/01/2026	Demolition of Existing Equipment
07/06/2026	Installation of New Equipment
09/25/2026	Substantial Completion Date

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X. CONCLUSION AND RECOMMENDATIONS

The heating and ventilation system associated with the welding bay at the Public Works Center needs replacement. The addition of an upgraded welding station ventilation system is a much-needed upgrade. This equipment adds more functionality to our daily work and provides an additional layer of safety for our staff. If the proposed replacements and upgrades are not made, we could see unexpected maintenance costs, possible operational downtimes and could have some elevated safety risks for staff.

From an asset management and safety standpoint, this project is both necessary and feasible. Additionally, the best way to accomplish this project is by soliciting competitive bids for the work. The feasibility of the project is contingent upon City Council findings regarding project financing.

We recommend the Council accept this project feasibility report, order the City Manager to prepare final plans and specifications and instruct the City Manager to advertise for bids in accordance with the requirement of law.

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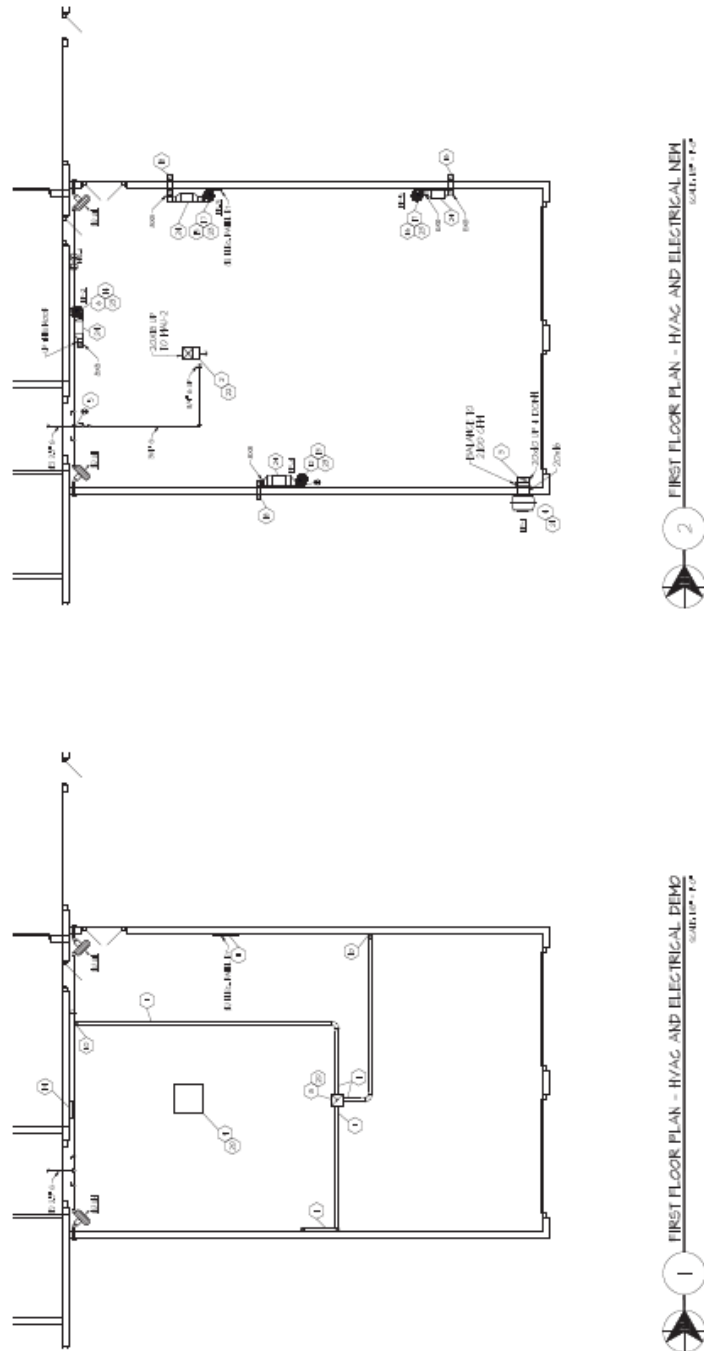
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XI. APPENDIX

a. FIGURE A: Preliminary Drawing



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b. FIGURE B: Site Photos



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