

**City of Muskegon
City Commission Meeting
Agenda**

**April 25, 2023, 5:30 pm
Muskegon City Hall
933 Terrace Street, Muskegon, MI 49440**

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The City of Muskegon will provide necessary reasonable auxiliary aids and services, such as signers for the hearing impaired and audio tapes of printed materials being considered at the meeting, to individuals with disabilities who want to attend the meeting with twenty-four (24) hours' notice to the City of Muskegon. Individuals with disabilities requiring auxiliary aids or services should contact the City of Muskegon by writing or by calling the following: Ann Marie Meisch, MMC – City Clerk, 933 Terrace Street, Muskegon, MI 49440; 231-724-6705; clerk@shorelinecity.com

Pages

- 1. Call To Order**
- 2. Prayer**
- 3. Pledge of Allegiance**
- 4. Roll Call**
- 5. Honors, Awards, and Presentations**
 - 5.a New Staff Introduction - Public Safety**
 - 5.b Women Veterans Day**
- 6. Public Comment on Agenda Items**
- 7. Consent Agenda**

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11. Any Other Business

12. Public Comment on Non-Agenda items

13. Closed Session

14. Adjournment

WATCH MUSKEGON

Agenda Item Review Form Muskegon City Commission

Commission Meeting Date: April 25, 2023		Title: Approval of Minutes	
Submitted By: Ann Marie Meisch, City Clerk		Department: City Clerk	
Brief Summary: To approve the minutes of the March 28, 2023 Regular Meeting and the March 29, 2023 Special Meeting			
Detailed Summary & Background:			
Goal/Focus Area/Action Item Addressed: <i>Refer to the 2022-2027 Long Term Goals document.</i>			
Amount Requested:		Amount Budgeted:	
Fund(s) or Account(s):		Fund(s) or Account(s):	
Recommended Motion: To approve the minutes.			
Approvals: <i>Get approval from division head at a minimum prior to sending to the Clerk.</i>		Guest(s) Invited / Presenting	
Immediate Division Head	☐	Information Technology	☐
Other Division Heads	☐	Communication	☐
Legal Review	☐		
Yes		☐	
No		☐	
For City Clerk Use Only: Commission Action:			

City of Muskegon
City Commission Meeting
Minutes

March 28, 2023, 5:30 pm
Muskegon City Hall
933 Terrace Street, Muskegon, MI 49440

Present: Mayor Ken Johnson
Commissioner Rachel Gorman
Commissioner Rebecca St.Clair
Commissioner Eric Hood
Vice Mayor Willie German, Jr.
Commissioner Michael Ramsey
Commissioner Teresa Emory

Staff Present: City Manager Jonathan Seyferth
City Clerk Ann Meisch
City Attorney John Schrier
Deputy City Clerk Kimberly Young

1. Call To Order

Mayor Ken Johnson called the meeting to order at 5:30 p.m.

2. Prayer

A moment of silence was observed, in lieu of opening prayer.

3. Pledge of Allegiance

The Commission and public recited the Pledge of Allegiance to the Flag.

4. Roll Call

As recorded above

5. Honors, Awards, and Presentations

6. Public Comment on Agenda Items

Public comments were received.

7. Consent Agenda

Action No. 2023-46

Motion by: Commissioner Ramsey

Second by: Commissioner Emory

To accept the consent agenda as presented.

Ayes: (7): Mayor Johnson, Commissioner Gorman, Commissioner St.Clair, Commissioner Hood, Vice Mayor German, Commissioner Ramsey, and Commissioner Emory

MOTION PASSES (7 to 0)

7.a Approval of Minutes

To approve minutes of the February 28, 2023 Regular Meeting.

STAFF RECOMMENDATION: To approve the minutes.

7.b Sale of 1379 Pine Street

Staff is requesting approval of a purchase agreement for 1379 Pine Street. 1379 Pine Street was constructed through the agreement with Dave Dusendang to construct infill housing with ARPA funding. The offer is for the full listing price with no seller concessions. The offer also includes costs to cover appliances and air conditioning.

STAFF RECOMMENDATION: To approve the purchase agreement for 1379 Pine Street.

7.c Sale of 263 Catherine Avenue

Staff is requesting approval of a purchase agreement for 263 Catherine Avenue. 263 Catherine Avenue was constructed through the agreement with Dave Dusendang to construct infill housing with ARPA funding. The offer is for \$6,000 over the full listing price with \$6,000 in seller concessions.

STAFF RECOMMENDATION: To approve the purchase agreement for 263 Catherine.

7.d Sale of 1373 Pine Street

Staff is requesting approval of a purchase agreement for 1373 Pine Street. 1373 Pine Street was constructed through the agreement with Dave

Dusendang to construct infill housing with ARPA funding. The offer is over the full listing price with 6% seller concessions. The offer also includes costs to cover appliances. Once the appliances and seller concessions are accounted for, the offer is for full price.

STAFF RECOMMENDATION: To approve the purchase agreement for 1373 Pine Street.

7.e Arena Solar Power Purchase Agreement

Charthouse Energy proposes, with financial backing by Sunwealth, LLC, to place solar panels on the roof the Trinity Health Arena and sell the energy to the City under a Power Purchase Agreement (PPA) to reduce the City's energy costs over the 25 year life of the system.

This item was discussed at the July, 2020 work session and the April 27th, 2021 regular meeting before being approved in a prior format at the June 8th, 2021 meeting. Due to tax issues, it was then rescinded at the June 14th, 2022 meeting. The tax issues have been resolved due to additional incentives being available under the IIJA, so a new financier (Sunwealth, LLC) has agreed to take the project on.

The updated proposal was reviewed with the Commission at the February 13, 2023 Work Session meeting. After positive feedback and a legal review of the Power Purchase Agreement (PPA) by Matthew Greenberg of Miller Canfield (at the recommendation of City Attorney John Schrier, as Mr. Greenberg assisted the City in developing the 2021 rescinded agreement), staff is pleased to present the proposal and PPA for formal adoption by the City Commission.

STAFF RECOMMENDATION: To enter into a 25 Year Power Purchase Agreement contract with Sunwealth, LLC to purchase power at a reduced cost from a solar generating facility installed on the Trinity Health Arena roof, and authorize the Manager to sign.

7.f Laketon-Lakeshore DNR Trust Fund Grant

The City intends to apply for MDNR Trust Fund grants for the Laketon-Lakeshore Trail Connector and would like public feedback on the project and application. Two grants will be submitted for the project, one for the portion from Laketon to Apple and one for the portion from Apple to Shoreline, in order to maximize the potential for funding. This is based on recommendations from the West Michigan Trails & Greenways Coalition and Prein & Newhof, who have helped the City with an application for

MDOT Transportation Alternatives Program (TAP) funding for the trail. The DNR Trust Fund grants and the MDOT TAP grant funds are able to match each other, potentially reducing the City's contribution.

STAFF RECOMMENDATION: To authorize staff to apply for MDNR Trust Fund grants for the Laketon-Lakeshore Trail Connector.

7.g Portable Restroom Service Extension

Staff requests approval for a one-year extension to a three-year contract from 2020 with Kerkstra Portable Restroom Service for the 2023 season.

Staff reached out to other area companies seeking to determine the market, and found that Kerkstra Portable Restroom Service is the only company able and willing to service Muskegon for the 2023 season. Kerkstra has offered updated pricing, which staff has confirmed is still well below the market rates offered by the competitors, again none of which are even able or willing to provide the number of units required by the City.

Staff plans to re-bid a three-year contract in fall of 2023 with hopes the market will be more open to and supportive of providing portable restroom service to the Muskegon market.

The majority of cost is from the Parks budget, however the boat launch ramps, special events such as Taste of Muskegon and the fireworks, the farmers market and the Western Market all use these services as well.

AMOUNT REQUESTED: \$30,000

AMOUNT BUDGETED: \$15,000 (Parks) / \$15,000 (Other)

FUND OR ACCOUNT: 101-770 and Various

STAFF RECOMMENDATION: To authorize staff to enter into a one-year extension of the City's contract with Kerkstra Portable Restroom Service for the 2023 season.

7.h CCTV Services for Sewer Mains

Staff requests award of a three-year contract to Rogue Industrial Services for cleaning and televising services in the City's sanitary and storm sewer systems. Staff issued a public bid for sewer cleaning and televising services to supplement staff capacity on complex and/or large televising projects. In 2023, this contract will be used to televise the sewers in Apple Avenue in advance of MDOT's fiscal year 2026 reconstruction project to assist staff when deciding which sewers may need repairs or replacement

in advance of or as a part of the MDOT project. In future years, staff will use this contract for televising of sewers when needed in large sections of the City or on a tight deadline, such as for Clean Water State Revolving Fund projects. Rogue Industrial Services has performed work for many West Michigan communities as shown in their attached proposal, and is recommended based on their work history and their low bid.

AMOUNT REQUESTED: \$79,109 (Three Years)

AMOUNT BUDGETED: \$25,000 (FY2023)

FUND OR ACCOUNT: 590 (Sewer)/202 (Highway)

STAFF RECOMMENDATION: To authorize staff to enter into a three-year contract with Rogue Industrial Services for cleaning and televising service in the City's sanitary and storm sewer systems.

7.i EGLE Brownfield Grant/Loan Application for Shaw-Walker Project

Typically, these applications are run through the Brownfield Redevelopment Authority, but they are already applicants for funding on behalf of Adelaide Pointe and cannot submit two requests in the same program year. EGLE has indicated that the city may directly apply on behalf of the Shaw-Walker project.

We have worked closely with Environmental Resource Group for several months on the environmental needs that are anticipated at Shaw-Walker, and with vapor mitigation needed for all buildings the costs will be substantial. EGLE administers an annual program that allows public entities to apply for up to \$1,000,000 in grant funds and up to \$1,000,000 in loan funds. Regardless of whether the local Brownfield Board or the city serves as the applicant, all loan/grant applications are considered backed by the full faith and credit of the city.

Parkland has asked for the city commission to allow the city to serve as the applicant for these funds, and has agreed to make sure the city is made whole either through TIF capture (the typical repayment method) or direct payment if TIF revenues are insufficient. ERG will do the leg work on the actual application and submittal, and work with our staff during implementation if funding is achieved for all necessary reporting. Staff recommends approval of this request.

STAFF RECOMMENDATION: To authorize staff to apply for EGLE Brownfield Grant/Loan Funding for use at the Shaw Walker Project in an amount of \$2,000,000.

8. **Public Hearings**
9. **Unfinished Business**
10. **New Business**

10.a Off-Premises Tasting Room License - The People's Cider Company

The People's Cider Company has been chosen for a chalet at Western Market and needs an Off-Premises Tasting Room License and a Social District License.

FUND OR ACCOUNT: \$1,000 revenue to Liquor Licenses

STAFF RECOMMENDATION: To approve the resolution requesting an Off-Premises Tasting Room License and Social District License for The People's Cider Company, 307 W. Western, Suite Q and authorize the Clerk to sign.

Action No. 2023-47(a)

Motion by: Commissioner Gorman

Second by: Commissioner Hood

To approve the resolution requesting an Off-Premises Tasting Room License and Social District License for The People's Cider Company, 307 W. Western, Suite Q and authorize the Clerk to sign.

Ayes: (7): Mayor Johnson, Commissioner Gorman, Commissioner St.Clair, Commissioner Hood, Vice Mayor German, Commissioner Ramsey, and Commissioner Emory

MOTION PASSES (7 to 0)

10.b 1170 W. Southern Avenue (MOCAP Building) Property Sale/Transfer

MOCAP operates out of 1170 W. Southern Ave. This is currently a City owned property and MOCAP has expressed a desire to own the building/property the organization has been operating out of for many years. This action will, through a multi-step process, transfer that property to MOCAP via the Hume Home of Muskegon. The City will receive \$3,000 for the sale.

The Muskegon-Oceana Community Action Partnership (MOCAP) operates out of a building (a former City fire station) at 1170 W. Southern

Ave. MOCAP has been in the building for many years. MOCAP wishes to purchase the property from the City for a variety of different reasons.

The City originally obtained the property from the Hume Home of Muskegon in 1950 paying \$3,000. The purchase agreement has a deed restriction which states that when the City stops using the property for municipal purposes the Hume Home may exercise its right to repurchase the property for the same amount the City purchased it.

The Hume Home of Muskegon is comfortable with the property being purchased by MOCAP, however, because of the deed restrictions from the 1950s the Hume Home of Muskegon is going to exercise its right to purchase the property back for \$3,000 (paid to the City) and then sell it to MOCAP for \$3,000.

This two-step process will cure any questions regarding the property transfer/deed restriction and will allow MOCAP to take ownership of a building it has operated in and maintained for many years.

STAFF RECOMMENDATION: To approve the sale of 1170 W. Southern Avenue back to the Hume Home of Muskegon for the sum of \$3,000 as provided for in the original 1950 purchase agreement and authorize the City Manager to sign all closing documents.

Action No. 2023-47(b)

Motion by: Commissioner Ramsey

Second by: Commissioner Emory

To approve the sale of 1170 W. Southern Avenue back to the Hume Home of Muskegon for the sum of \$3,000 as provided for in the original 1950 purchase agreement and authorize the City Manager to sign all closing documents.

Ayes: (7): Mayor Johnson, Commissioner Gorman, Commissioner St.Clair, Commissioner Hood, Vice Mayor German, Commissioner Ramsey, and Commissioner Emory

MOTION PASSES (7 to 0)

11. Any Other Business

11.a Closed on CSX Rail Road

City Manager, Jonathan Seyferth, told the Commissioners that the city signed closing documents on the CSX Rail Road purchase.

11.b Odd/Even Parking

Commissioner Hood raised the question about odd/even parking and what to do when it's the 31st followed by the 1st. Chief Kozal advised that would be two odd days in a row.

11.c Public Forums for Master Plan

Mayor Johnson thanked staff members Mike Franzak, Jamie Pesch, and Deborah Santiago-Sweet for their work in organizing, promoting and conducting public forums to present information and receive feedback regarding the city's master plan.

12. Public Comment on Non-Agenda items

- Reminder: Individuals who would like to address the City Commission shall do the following:
- Fill out a request to speak form attached to the agenda or located in the back of the room.
- Submit the form to the City Clerk.
- Be recognized by the Chair.
- Step forward to the microphone.
- State name and address.
- Limit of 3 minutes to address the Commission
- (Speaker representing a group may be allowed 10 minutes if previously registered with City Clerk.)

Public comments were received.

13. Closed Session

14. Adjournment

The City Commission meeting adjourned at 6:23 p.m.

Motion by: Commissioner Ramsey

Second by: Commissioner Emory

MOTION PASSES

Respectfully Submitted,
Ann Marie Meisch, MMC - City Clerk

CITY OF MUSKEGON
SPECIAL CITY COMMISSION MEETING

March 29, 2023 @ 5:00 p.m.
Muskegon City Hall, 933 Terrace Street, Muskegon, MI 49440
In the Commission Chambers, Room 107

MINUTES

Present: Mayor Johnson, Commissioners Emory, Ramsey, St. Clair, Hood, and Gorman.

Absent: Vice Mayor German.

2023-48

HOUSING NEEDS ASSESSMENT

A study was conducted of the City's housing needs so government officials, stakeholders, and employers can gain a better understanding of the city's evolving housing market, create housing priorities, modify or expand local government housing policies, and enhance and/or expand the city's housing market to meet current and future housing needs.

Jake Eckholm provided an overview of the study that was done of the housing needs of the City.

The study indicated the need for housing in all price points as well as rentals. The study indicates the City of Muskegon currently suffers from a housing shortage. Nearly 80% of all two and three bedroom homes from January 2019 through November 2022 sold under 30 days.

Homes priced between \$150,000 and \$299,999 are in high demand and usually sell within less than 40 days. Homes more than \$300,000 may stay on the market for as many as 286 but these include many condominiums listed for sale but in the building stages.

The study also indicated the need for rentals within the price range of \$500 to \$999.

PUBLIC PARTICIPATION

Comments were received.

ADJOURN

Motion by Vice Mayor German, seconded by Commissioner St. Clair to adjourn the meeting at 6:30 pm.

MOTION PASSES.

Respectfully Submitted,

Ann Marie Meisch, MMC – City Clerk

WATCH MUSKEGON

Agenda Item Review Form Muskegon City Commission

Commission Meeting Date: April 25, 2023	Title: Health and Dental Care Renewal
Submitted By: Jessica Rabe	Department: Finance

Brief Summary: To approve the renewal of Priority Health as the City's fully insured health care provider and the Third-Party Administrator for City's self-funded health care plan. And to renew Delta Dental as the City's dental insurance provider.

Detailed Summary & Background: The City's health care coverage renews June 1, 2023, for the period June 1, 2023 to May 31, 2024. The following are changes effective June 1, 2023.

1. Renewal rates increased by 5%. Medical Inflation and Trend are 6.66% for Medical and 7.93% for Prescription.

Demographic	2022	2023
Single	\$572.44	\$604.78
Double	\$1,287.99	\$1,360.75
Family	\$1,545.59	\$1,632.91

2. Each year out-of-pocket maximums are adjusted by the insurance carrier. This year the change to out-of-pocket maximums are as follows:

Demographic	2022	2023
Single	\$8,550	\$9,100
Double/Family	\$17,100	\$18,200

3. Our Health Reimbursement Arrangement (HRA) is running very well. Our annual projection for this current (2022/23) plan year payout will be around \$361,369.25.
4. Our Deductible needs to be met before the Coinsurance starts. It is looking like only around 13 people meet their deductible and coinsurance for 2022/2023 plan year.
5. Our employer contribution will remain below the "hard cap limits" set by PA 152.

	2022	2023
Annual Employee	\$403,419.38	271,171,.37
Annual HRA Employer	\$361,369.25	N/A
Annual Employer	\$2,117,951.74	2,440,542.31

Annual Hard Cap	\$2,647,020.05	2,774,084.40
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6. For our self-funded contract, which includes 2 segments, those retirees under 65 and those over 65. We have 7 large claims currently in the self-funded plan. The renewal rates for the self-funded plan are as follows:

	Enrolled	Current	Renewal	Increase/Decrease
Admin Fee	157	\$51.68	\$52.85	2.0%
Aggregate Premium	157	\$13.76	\$14.72	7.0%

7. Delta Dental rates will remain the same for 2023-24. There are no plan changes. The city offers three benefit packages dependent on where you work.

	Single	Double	Family
Basic (Police & Fire)	\$26.80	\$50.40	\$101.28
Enhanced (Non-Union)	\$32.68	\$61.19	\$122.25
Union Enhanced (Union)	\$31.24	\$59.33	\$120.50

8. Vision rates will stay the same and there will be no changes in benefits
9. Payroll contributions will be 10% employee paid on a bi-weekly basis. The 10% payroll contribution includes medical rates, and HRA payments.

Goal/Focus Area/Action Item Addressed: Sustainability in financial practices

Amount Requested: \$2,711,713.68

Amount Budgeted: \$2,711,713.68

Fund(s) or Account(s):

Fund(s) or Account(s):

Recommended Motion: Renew the health & Dental plan with the current increase.

Approvals:

Immediate Division Head ☒ Information Technology ☐

Other Division Heads ☐ Communication ☐

Legal Review ☒

Guest(s) Invited / Presenting

Yes ☐

No ☐

For City Clerk Use Only:

Commission Action:



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF TREASURY

RACHAEL EUBANKS
STATE TREASURER

March 21, 2023

PUBLIC EMPLOYER CONTRIBUTIONS TO MEDICAL BENEFIT PLANS ANNUAL COST LIMITATIONS – CALENDAR YEAR 2024

For a medical benefit plan coverage year beginning on or after January 1, 2012, MCL 15.563, as last amended by 2018 Public Act 477, sets a limit on the amount that a public employer may contribute to a medical benefit plan.

For medical benefit plan coverage years beginning on or after January 1, 2013, MCL 15.563 provides that the dollar amounts that are multiplied by the number of employees with each coverage type be adjusted annually. Specifically, the dollar amounts shall be adjusted, by October 1 of each year after 2011 and before 2019, by the change in the medical care component of the United States consumer price index for the most recent 12-month period for which data are available. By April 1 of each year after 2018, the dollar amounts shall be adjusted by the change in the medical care component of the U.S. consumer price index for the most recent 12-month period for which data are available. For calendar year 2023, the limit on the amount that a public employer may contribute to a medical benefit plan was set to the sum of the following:

- \$7,399.47 times the number of employees and elected public officials with single-person coverage
- \$15,474.60 times the number of employees and elected public officials with individual-and-spouse coverage or individual-plus-1-nonspouse-dependent coverage
- \$20,180.43 times the number of employees and elected public officials with family coverage.

The limits for 2024 equal the 2023 limits increased by **4.1 percent**. The 4.1 percent is the percentage change in the medical care component from the period March 2021-February 2022 to the period March 2022-February 2023.

Thus, for medical benefit plan coverage years beginning on or after January 1, 2024, the limit on the amount that a public employer may contribute to a medical benefit plan equals the sum of the following:

- \$7,702.85 times the number of employees and elected public officials with single-person coverage
- \$16,109.06 times the number of employees and elected public officials with individual -and-spouse coverage or individual-plus-1-nonspouse-dependent coverage
- \$21,007.83 times the number of employees and elected public officials with family coverage.

Rachael Eubanks

Rachael Eubanks
State Treasurer

March 21, 2023

WATCH MUSKEGON

Agenda Item Review Form Muskegon City Commission

Commission Meeting Date: April 25, 2023		Title: Hard Cap Exemption	
Submitted By: Jessica Rabe		Department: Finance	
Brief Summary: State of Michigan Hard Cap Exemption for Healthcare			
Detailed Summary & Background: The State of Michigan has a hard cap exemption for the employer portion of health care. The health care renewal for the June 1, 2023 to May 31, 2024 has the employer paying \$2,784,987.31. The State of Michigan hard cap is \$2,774,084.40. This is based off 69 single, 43 double and 77 family participants.			
Goal/Focus Area/Action Item Addressed: Sustainability in financial practices			
Amount Requested:0		Amount Budgeted:0	
Fund(s) or Account(s):		Fund(s) or Account(s):	
Recommended Motion: To adopt the annual Exemption option for the medical benefit plan coverage year June 1, 2023 through May 30, 2024.			
Approvals:		Guest(s) Invited / Presenting	
Immediate Division Head	☐	Information Technology	☐
Other Division Heads	☒	Communication	☐
Legal Review	☒		
		Yes	☐
		No	☒
For City Clerk Use Only: Commission Action:			

**RESOLUTION TO ADOPT THE ANNUAL EXEMPTION OPTION AS SET FORTH IN
2011 PUBLIC ACT 152, THE PUBLICLY FUNDED HEALTH INSURANCE
CONTRIBUTION ACT**

WHEREAS, 2011 Public Act 152 (the "Act") was passed by the State Legislature and signed by the Governor on September 24, 2011;

WHEREAS, the Act contains three options for complying with the requirements of the Act;

WHEREAS, the three options are as follows:

- 1) Section 3 - "Hard Caps" Option - limits a public employer's total annual health care costs for employees based on coverage levels, as defined in the Act;
- 2) Section 4 - "80%/20%" Option - limits a public employer's share of total annual health care costs to not more than 80%. This option requires an annual majority vote of the governing body;
- 3) Section 8 - "Exemption" Option - a local unit of government, as defined in the Act, may exempt itself from the requirements of the Act by an annual 2/3 vote of the governing body;

WHEREAS, the **City Commission** has decided to adopt the annual Exemption option as its choice of compliance under the Act;

NOW, THEREFORE, BE IT RESOLVED the **Commission** of the **City of Muskegon** elects to comply with the requirements of 2011 Public Act 152, the Publicly Funded Health Insurance Contribution Act, by adopting the annual Exemption option for the medical benefit plan coverage year **June 1, 2023** through **May 30, 2024**.

Upon a call of the roll, the vote was as follows:

Ayes:

Nays:

Absent:

WATCH MUSKEGON

Agenda Item Review Form

Muskegon City Commission

Commission Meeting Date: April 25, 2023		Title: ARPA Community Grant Review Committee	
Submitted By: Jonathan Seyferth / Peter Wills		Department: Manager	
Brief Summary: Members of the City's ARPA Community Grant Review Committee have been identified and approval for the formalization of the committee is being requested.			
Detailed Summary & Background: On February 14th, 2023 the City Commission authorized the dedication of \$1.6M from the City's remaining allocation of American Rescue Plan Act (ARPA) federal stimulus funds for the creation of a city-sponsored ARPA Community Grant program. https://muskegon-mi.gov/cresources/ARP-001-Grant-Application-Program-Guidelines.2.16.pdf An ARPA Community Grant Review Committee has been established to review eligible applications and submit recommendations to the Commission. The Commission will review and make funding decisions at a Regular Committee Meeting in May. The Review Committee is comprised of (6) members: one representative from each of the (4) City Commission Wards, the City Manager and the Director of the Community and Neighborhood Services Department. Two representative(s) from local Community Based Organizations will be included to act in an advisory capacity and will include the United Way of the Lakeshore and Community Foundation for Muskegon County. Ward 1 – Lawrence Baker / Ward 2 – Leon Howard / Ward 3 – Destinee Keener-Sargent / Ward 4 – Nina Leask			
Goal/Focus Area/Action Item Addressed: <i>Goal (Community Connection); Focus Area (Foster strong ties among government and community agencies)</i>			
Amount Requested: N/A		Amount Budgeted: N/A	
Fund(s) or Account(s): N/A		Fund(s) or Account(s): N/A	
Recommended Motion: To approve the proposed representatives from each of the (4) City Committee Wards as part of the ARPA Community Grant Review Committee.			
Approvals: <i>Get approval from division head at a minimum prior to sending to the Clerk.</i> Immediate Division Head ☒ Information Technology ☐ Other Division Heads ☒ Communication ☒ Legal Review ☒		Guest(s) Invited / Presenting Yes ☐ No ☒	

For City Clerk Use Only:

Commission Action:

WATCH MUSKEGON

Agenda Item Review Form Muskegon City Commission

Commission Meeting Date: April 25, 2023	Title: Adelaide Pointe Construction Engineering
Submitted By: Dan VanderHeide	Department: DPW
Brief Summary: Staff requests authorization to enter into a contract with ENG. Inc. to perform third-party construction engineering services for the roads and public utilities on the Adelaide Pointe development site.	
Detailed Summary & Background: In February of 2022 at the developers request, staff issued an RFP for design and construction engineering services at Adelaide Pointe. At the time it was thought that the hired firm would design and oversee the installation of the public infrastructure. Three firms submitted, and a summary of the qualifications-based scoring is shown to the right. ENG. was the highest-scoring firm, although no award was made due to changes in how the design and contracting was done. The developers engineer ended up designing the project, and permits are now being issued. Construction on the public infrastructure is expected to begin this month, and may be completed this year. The need for construction engineering services has not changed, and in fact is now greater than before due to the developer's engineer having designed the infrastructure. ENG. has submitted a revised proposal that covers only the construction services. Staff find their proposal as compelling as before, and requests authorization to hire them to oversee this historic investment in Muskegon's waterfront. This is an unbudgeted item for FY23, however all costs are covered by special funds (roads, water and sewer). The costs will be budgeted in FY24 as shown below.	
Goal/Focus Area/Action Item Addressed: 2022-2.6 – Complete Adelaide Pointe Improvements	
Amount Requested: \$25,000 (FY23) \$281,250 (FY24)	Amount Budgeted: \$0 (FY23) \$281,250 (FY24)
Fund(s) or Account(s): \$60,637.50 (Water, 591) \$43,487.50 (Sewer, 590) \$202,125 (Streets, 203)	Fund(s) or Account(s): Same
Recommended Motion: Authorize staff to enter into a contract with ENG. Inc. for third-party construction engineering services for the public infrastructure at the Adelaide Pointe site in the amount of \$306,250.	

Approvals:		Legal Review	☒	Guest(s) Invited / Presenting
Immediate Division Head	☒	Information Technology	☐	Yes ☐
Other Division Heads	☒	Communication	☐	No ☒
For City Clerk Use Only:				
Commission Action:				

MUSKEGON



West Michigan's Shoreline City

www.shorelinecity.com

PROPOSAL FOR
ADELAIDE POINTE
UTILITY & ROADWAY EXTENSIONS

MARCH 22, 2022
REVISED APRIL 2023



16930 Robbins Road Suite 105
Grand Haven, MI 49417
616.743.7070

March 22, 2022

REVISED APRIL 2023

Mr. Dan VanderHeide
City of Muskegon Department of Public Works
1350 E. Keating Avenue
Muskegon, MI 49442

RE: Request for Proposals – Adelaide Pointe Utility & Roadway Extensions

Dear Mr. VanderHeide:

Thank you for the opportunity to submit our proposal for Professional Engineering Services to the City of Muskegon for the Adelaide Pointe Utility & Roadway Extensions project. Eng., Inc. has completed several similar projects for municipalities across Michigan, including the cities of Lansing, Grand Ledge, Owosso, Muskegon, Norton Shores and Marshall. The method of approach we propose for this project is very similar to that used on these successful projects.

We have reviewed the scope of work as well as specific project information and guidelines in the request for proposal, and we have visited the site to familiarize ourselves with the existing conditions. Eng., Inc. has substantial experience with similar projects in terms of scope, size, and delivery method. We are confident in our ability to deliver a quality product. We have thoroughly reviewed and analyzed the proposed schedule and have the personnel to achieve it.

Our business model is all about building long term relationships, with both our employees and clients. Our pride, passion, and performance in everything we do shines through every single member of our team. We have put together a great team of hard working, accountable, and responsive people who want to be the best in everything they do. With Principal involvement on every project from start to finish and a relationship focused team that offers practical and responsible solutions to problems, we are truly achieving our purpose of engineering for better lives: better lives for all those affected by the project, our clients' lives, and our employees' lives.

We are hopeful for the opportunity to show you what we can do. We would love to meet and discuss our firm, our people, and our passion with you.

Attached is the following information:

- Business Organization
- Statement of Problem
- Method of Approach & Preliminary Execution Plan
- Qualifications and Experience
- Project Staff Description
- Authorized Negotiations
- Additional Information

We look forward to continuing a long-lasting relationship with the City of Muskegon. If you have any questions, please do not hesitate to call.

Sincerely,

Eng., Inc.



Ryan C. McEnhill, PE
President

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 - Subconsultant Information: Soils & Structures

Eng., Inc. acknowledges Addendum No. 1 to the Request for Proposal for Adelaide Pointe Utility & Roadway Extensions, published March 17, 2022.
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I. BUSINESS ORGANIZATION

Eng., Inc. is a multidiscipline consulting firm, incorporated under the laws of the State of Michigan and registered as a Michigan Corporation.

Our main office is in Lansing, Michigan with a branch office in Grand Haven, Michigan and in Grand Rapids, Michigan. All work proposed for this project will be performed out of our Grand Haven office except for QA/QC review, which will be conducted by Erik J. Morris, PE, Vice President, Principal, and Manager of the Lansing office.

Lansing – headquarters:
Eng., Inc.
4063 Grand Oak Drive, Suite A109
Lansing, MI 48911-7405
Ph: (517) 887-1100

Grand Haven – branch office:
Eng., Inc.
16930 Robbins Road, Suite 105
Grand Haven, MI 49417-2784
Ph: (616) 743-7070

Grand Rapids – branch office:
Eng., Inc.
2311 East Beltline Avenue SE, Suite 201
Grand Rapids, MI 49546
Ph: (616) 743-3020

The Principals of the company are:

Ryan C. McEnhill, PE, President
Erik J. Morris, PE, Vice President

Proposed Subconsultant:

Soils & Structures, Inc. (S&S)
6480 Grand haven Rd.
Muskegon, MI 49441
(231) 798-4127

II. STATEMENT OF UNDERSTANDING

The City of Muskegon is looking to extend public utilities and public road access through portions of the property known as Adelaide Pointe. The project will be a coordinated effort through agreements with the developer of Adelaide Pointe and in conjunction with the Muskegon Brownfield Redevelopment Authority. The multi-use development at 1204 W. Western Avenue is located on the south shore of Muskegon Lake on 30 acres of land and includes plans to build 300 residential condos, a 270-slip floating marina, boat storage, and restaurant and retail space. The proposed site will require public water main for domestic and fire protection capabilities, sanitary sewer system, sanitary pump station and force main, storm water management system, and the coordination of private utility (electric, gas, fiber, etc.) service to the site.

The subject property is the former site of Westran Austin Trailer Division and former foundry of West Michigan Steel. Due to decades of industrial use, remediation of the property is the first step for the development. The Adelaide Pointe developers' team is in the process of pursuing Brownfield incentives (grants / loans) to remove the old foundry waste, slag and asbestos which exists at the site. The developers' team is also looking to acquire a \$1.5 million grant administered by and through the Department of Natural Resources and US Fish & Wildlife Service for construction of the marina portion of the project.

The developers' team has applied for a Part 301/303 (Inland Lakes & Streams and Wetland Protection) permit through the Michigan Department of Energy, Great Lakes, and the Environment (EGLE) for construction and improvement of the two marina basins as well as mitigation of the existing on-site wetlands which will be impacted by the development. The creation of the marina basin will include the removal of foundry sands placed in Muskegon Lake over many decades and will be instrumental for the development of the public improvements, as the sands will be utilized to raise the site. We understand that no signs of contamination have been identified and the sand material will be adequate to utilize.

Two existing buildings on the southern portion of the site will remain and are currently in the process of being renovated into a 165,000-square-foot boat storage business.

The construction of the public improvements will be funded by Brownfield incentives and City of Muskegon tax capture as a result of the improvements. The project will require topographical survey, existing utility investigation and analysis, soil borings, EGLE joint permit for construction within the floodplain, EGLE Act 399 permit for water supply system, EGLE Part 41 permit for sanitary sewer construction, storm water management system, roadway design, internal and public meetings, and construction administration, engineering, and inspection. All plans, specifications, estimates, and construction engineering must comply with City of Muskegon standards.

We have reviewed the scope of services and have built a schedule to meet the milestone schedule provided. We have provided that schedule following the Method of Approach & Preliminary Execution Plan section of this proposal.

The roadway improvements will consist of approximately 1,200 feet of roadway reconstruction and public utility work within W. Western Avenue west of Franklin Street to the dead-end cul-de-sac. The existing roadway from Franklin Street to approximately 600 feet west entails a 40-foot-wide HMA roadway with concrete curb and gutter and concrete sidewalks each side within a 66-foot-wide right-of-way. This section of roadway is in fair to poor condition with extensive block cracking. The concrete sidewalk is in fair condition here and could be salvaged in lieu of replacement. Several concrete approaches exist in poor condition and could potentially be eliminated based on the future development plans.

The remaining portion of W. Western Avenue from the dead-end cul-de-sac to 600 feet east entails a 30-foot-wide HMA surface with an extended 10-foot-wide concrete valley gutter on each side which abuts concrete sidewalks. The arrangement was likely to accommodate the previous industrial use which allowed ease of access for larger vehicles. This section of roadway is in fair to poor condition with extensive block cracking in the HMA and significant cracking in the concrete valley gutter. The concrete sidewalk on the south side of the roadway is in fair condition with significant portions that could be salvaged absent a section through a drive approach on the west end. The sidewalk on the north side is in poor condition and will likely need replacement.

The new roadways within the proposed Adelaide Pointe development equate to approximately 3,350 feet in length and should be designed and constructed in accordance with the requirements of Chapter 78 of the City of Muskegon Code of Ordinances. The ordinance outlines requirements which include a concrete curb and gutter roadway and sidewalks within a 66-foot public road right-of-way for local streets, among other design requirements. The conceptual layout of the new roadways consists of two (2) traffic circles and two (2) traffic calming intersections. The design of these features should consider adequate geometry to allow for vehicular truck turning movements, snowplowing by City trucks, and future maintenance and improvements.

The Lakeshore bike trail currently extends through the property near the water's edge. Modifications to the alignment of the HMA bike trail as a result of the project will be completed by the developers' design team. However, coordination will be required as part of a harmonious complete project.

The water distribution system for the proposed development will require preparation of a basis of design as part of the Act 399 EGLE permit application. The basis of design will require coordination with the developers' design team for domestic usage and fire suppression needs. Modeling of the water system may be required to adequately design the system. The existing 6-inch water main within the reconstruction limits of W. Western Avenue will require an upsizing to 8-inch (at a minimum) to provide adequate pressure to the development. The water main from the development should connect into the new W. Western main at two (2) locations for reliability, as well as looping to the existing 6-inch near the boat launch at Hartshorn. Both domestic and fire suppression service(s) should be stubbed out to each proposed building location and preferred locations coordinated with the developers' design team. Fire hydrants should be placed at 500-foot maximum intervals and at locations conducive to fire prevention within the development.

The sanitary sewer system for the proposed development will consist of gravity sewer, force main, and a sanitary pump station. The system will require preparation of a basis of design as part the Part 41 EGLE application. The basis of design will require coordination with the developers' design team and will function in tandem with the water main basis of design. A gravity sewer system will be made available to each building proposed at the development. The preferred locations of the sewer service stubs should be coordinated with the developers' design team. The plans to raise the site 1 to 3 feet should allow the opportunity to keep the sanitary sewer above the Ordinary High-Water Mark of Muskegon Lake and ideally above the highest known groundwater level to alleviate extensive inflow and infiltration over time.

We anticipate utilizing a typical Kennedy supplied Flygt submersible duplex station within a precast concrete structure and do not anticipate a generator being required at this time. Coordination with the electrical service provider will be required to provide adequate service to the station. An easement to the City may be required if the station cannot adequately fit within the 66-foot roadway right-of-way. A sanitary force main will be required with a connection point into the existing 15-inch City sanitary sewer system near 1083 W. Western Avenue. The discharge configuration into the gravity system will likely require a force main discharge manhole and interior drop piping, depending on the depth of the existing sanitary sewer. Evaluation of the existing manhole should also be completed to determine if the existing structure can be retrofitted to save costs.

Preliminary design drawings for the overall development of Adelaide Pointe propose several Best Management Practices as part of the storm water management plan, including green roofs, bioswales, and storm water quality units. The contaminated soil at the site requires that alternative water quality and treatment options be explored to not flush this material and contaminants into Muskegon Lake via traditional infiltration techniques such as perforated pipes, leaching basins, detention ponds, traditional rain gardens or perforated pavement. Channel Protection and Flood Control requirements as outlined in the Muskegon County Site Development Rules with Procedures and Design Standards for Stormwater Management should not be required due to the site's proximity to Muskegon Lake.

The project currently intends to utilize two new storm water outfalls to Muskegon Lake which will require a Part 301 permit from EGLE. The outlet pipes will have inverts above the ordinary high water (OHM) of Muskegon Lake. The enclosed storm sewer system for the public infrastructure should account for runoff from the fully developed site and contributing area and sized for the 10-year recurrence rainfall event with adequate emergency overland overflow routes, to ensure no adverse impacts to existing and proposed structures. Drainage from the

western portion of W. Western Avenue will likely need to be accommodated and passed through the new public roadways of the development.

A geotechnical investigation will be required in order to adequately design the roadway and public utilities. The site is located within an EGLE Area-Wide Assessment of Historic Fill of the Muskegon Lake Shoreline as part of a 2008 study. The study identified the presence of foundry fill material, along with a significant number of metals identified in the groundwater at concentrations in excess of the EGLE Part 201 Generic Residential Cleanup Criteria (GRCC). The soil and groundwater contamination at the site represents evidence of a Recognized Environmental Condition (REC) per the Phase I ESA completed by Fishbeck and dated 12/19/2021.

We anticipate that a Due Care Plan will be/has been created as part of the developers' permitting process and to receive brownfield incentives. The Due Care Plan will outline and describe the actions that must be undertaken and are necessary to protect the public from exposure to contamination present in the soil, groundwater, and subsurface vapors, to allow for the safe use of contaminated property, and to provide notifications to affected parties.

If the site cleanup has not occurred prior to construction of the public utility and roadway improvements, action and measures will need to be taken as part of the City project to be in adherence with the Due Care Plan, such as removing contaminated soils to a Type III Landfill and/or treating contaminated groundwater prior to discharge as part of dewatering activities.

We understand that the City is currently in negotiations with CSX Railroad and Michigan Shore Railroad to acquire the abandoned 20-foot-wide rail line that runs from Rotary Park in downtown through the Lakeside Neighborhood and ends at the Jaycees Launch Ramp. The acquisition would avoid significant permitting and design costs for new roadway crossings and to bore and jack utilities across the line. If the negotiations are not fruitful, acquisition of these permits would be a high priority critical path item, as lead times are significant to come to an agreement.

Eng. understands that the construction phases of the project may utilize a multi-phase approach based upon refinement of the final design, coordination with the developer's design team, and funding availability.

Proposed engineering services for the project shall include the following phase:

Phase III – Construction Administration

Engineering supervision, full time on-site construction inspection, staking and layout, construction materials testing, and construction administration are included in this phase. Construction administration will be conducted by MDOT certified office technicians and includes submittal review and approval, the preparation and processing of all documentation, review and response to requests for information, review of construction progress, SESC reports, and testing reports in accordance with City and EGLE standards and requirements. All documentation will be prepared using FieldManager software with accessibility for City staff.

We anticipate that construction staking and layout will be performed by the developers' design team.

Construction materials testing is also included in this phase and includes aggregate and granular materials, initial backfill materials, as well as HMA density testing.

A project manager will be assigned to the project to provide contract administrative duties. These duties include interpreting the contract documents, review RFI's, review and process pay applications, monitor schedule and bid quantities, review shop drawings, coordinate and conduct progress meetings, review contract modifications and prepare change orders, coordinate technical support required for engineering disciplines, and accept, document, and log phone calls from residents.

Full time on-site construction inspection and observation shall include Inspector Daily Reports (IDRs) to document all construction activities, materials, methods, locations, calculations, equipment, and manpower. IDRs will be generated and submitted electronically to the City for review and distribution to the project stakeholders.

Any details requiring a follow up or further discussion shall be noted. In this event, the project manager will provide direction to the contractor.

After substantial completion, the consultant will complete a final walk-through with the City, developers' design team, EGLE, and any other necessary stakeholders to develop a punch list of items that do not conform to the approved plans and specifications. After completion of the punch list, a final completion inspection will be performed, and final payment documents processed. Record drawings shall be prepared showing the as-built layout and configuration. As-built drawings and project close-out documents shall be prepared in accordance with City standards.

III. METHOD OF APPROACH & PRELIMINARY EXECUTION PLAN

Phase III – Construction Administration

Eng. will provide all construction engineering services necessary to administer the projects in accordance with City, EGLE, and Muskegon County requirements, utilizing the current versions of FieldManager and ProjectWise. Construction materials testing will be conducted by MDOT certified technicians for all aspects of the project.

During the construction phase, it is important to keep the design team members involved reviewing shop drawings, performing site visits, answering questions, and solving problems. Communication is key during all phases of construction. Whether with the engineer, client, contractor, subconsultant or property owner, Eng.'s inspectors are trained to over-communicate. At Eng., all our inspectors undergo a training using National Society of Professional Engineers field guide as a basis. In addition, our professional staff are EGLE Certified for: Storm Water Management – Construction Site A-1j, Comprehensive – Part 91, Soil Erosion and Sedimentation Control or the newer SESC Comprehensive.

Additionally, all our project engineers, project managers, team leaders, and client contacts are very hands-on during construction. Direct coordination and communication ON SITE is an Eng. standard policy. During the recent COVID-19 pandemic, Eng. easily adapted and excelled in remote working. All our employees have full capabilities to work remotely, which includes in a vehicle on a construction site. It is normal to have a project engineer or project manager work from a vehicle on-site on days where numerous questions are anticipated (such as bore and jack operations). Eng. inspectors, when necessary, also utilize video communications to show live conditions to the project engineer.

Construction Engineering will include the following services:

Engineering Supervision and Construction Certified Office Technician

- Preconstruction meeting
- Preconstruction preparation in FieldManager and ProjectWise
- Review shop drawings and submittals
- Regular site visits
- Answer questions, resolve conflicts
- Attend biweekly progress meetings
- Supervise field staff, subconsultant
- Monitor project progress
- Ensure quality control is maintained
- Prepare and maintain all project documentation
- Review and approve all wage rate and certified payroll (if necessary)
- Process biweekly pay estimates and contract modifications
- Project close-out

Construction Inspection (full-time on-site)

- Oversee all construction work
- Communicate with and assist property owners
- Perform and coordinate materials testing as detailed below
- Coordinate utility work
- Ensure adherence to plans and specifications
- Provide pictures and/or video clips to the City
- Monitor traffic control effectiveness
- Conduct SESC inspections and reports
- Document as-built conditions utilizing lead cards provided by the City

Materials Testing (Eng. or S&S)

- Trench backfill density
- Subbase density
- Aggregate base density
- HMA density
- Concrete testing

Materials Testing (S&S)

- Gradation testing

In an effort to be more cost competitive and in turn provide significant cost savings to projects and clients, Eng. has started its own materials testing program. We have invested in nuclear density gauges and proper training to ensure that testing requirements, accuracy, and performance far exceed the standard. Instead of having both a construction inspector and a materials testing technician on-site, we now can offer both services by a single inspector on-site. All of our inspectors complete the necessary training to become MDOT certified in Nuclear Density In-Place, One-Point Michigan Cone, One-Point T-99, Michigan Modified T-180, and Speedy Moisture Gauge. This allows Eng. inspectors to complete density testing for trench backfill, subbase, aggregate base, and HMA which make up the majority of testing time on-site. When the same person is inspecting and conducting density testing, more tests can be taken and documentation can be more accurate, to ensure the highest quality results.

To make sure we have complete materials testing coverage, we will team up with S&S to provide abbreviated construction materials testing as well. With an office less than 10 miles from the project site in Muskegon, S&S is well-positioned to mobilize experienced engineers and technicians to this project. S&S routinely performs geotechnical evaluations and construction materials services for the City. In addition, S&S has performed multiple geotechnical evaluations for privately owned projects on parcels along this proposed project area. S&S will provide materials testing services for concrete, gradation sampling and reporting as well as geotechnical observations as required.

As stated above, communication is vital during construction. Whether with the contractor, client, utilities or property owners and businesses, communication can make or break a construction project. Eng. has a proven track record of strong communication during all aspects of a project. Eng. inspectors and project managers go above and beyond to ensure everyone is “in the know” and any outstanding issues or questions are addressed in a timely manner. This project will affect numerous residential properties, and a few commercial. Communication with these properties, during design and then into construction, to understand the contractor hours of operation and access needs, will be crucial to the success of the project.

Following construction, Eng. will complete final documentation, paperwork, and close-out. At the same time, Eng. will prepare record drawings showing the configuration of the project as constructed. As-built documentation will be prepared in accordance with the City’s documentation procedure. Each sheet will be stamped as “RECORD COPY.” Check plots of the as-built drawings will be submitted to the City for review within 60 days of project closeout. Following review, the final record drawings will be delivered in both PDF and AutoCAD formats.

City of Muskegon
Adelaide Pointe Utility & Roadway Extensions
RFP
Project Schedule

(estimated notice of award in late April 2023)

(estimated notice of award in late April 2023)



KEY WORK TASKS & PROJECT MILESTONES

Task II - Phase I Construction Oversight

- engineering supervision
- preconstruction meeting & notes
- construction inspection
- construction layout and staking
- materials testing (Eng. and S&S)
- project audit (close out)
- as-built drawings

Task III - Future Phase(s) Construction Oversight

- engineering supervision - roadway reconstruction
- pre-construction meeting & notes
- construction inspection - roadway reconstruction
- construction layout and staking
- materials testing (S&S)
- project audit (close out)
- as-built drawings

[illegible]

City of Muskegon
Adelaide Pointe Utility & Roadway Extensions
3/22/2022 **REVISED APRIL 2023**



	Rate	\$205.00	\$205.00	\$95.00	\$90.00	\$90.00	\$165.00	\$185.00	\$90.00		\$150.00	
		<i>McEnhill - PIC</i>	<i>Morris - QA/QC</i>	<i>Cook - Materials Testing</i>	<i>McKenzie - Office Engineering</i>	<i>CAD</i>	<i>Gazella - PS</i>	<i>Survey Crew</i>	<i>Frezza Shlimovitz TBD - Inspection</i>	<i>S&S</i>	<i>Nuclear Gauge Rental per day</i>	<i>Total</i>
Construction Administration Phase (assumed 40 weeks / 200 working days)					*Assume 50 hours/week inspection							
engineering Supervision		80		110								
construction office administration					210							
construction inspection									2000	\$10,500.00		
materials testing			8		54				80	\$17,500.00	100	
as-built drawings		8		24		84	8	40	40			
subtotal:		88.0	8.0	134.0	264.0	84.0	8.0	40.0	2120.0	\$28,000.00	100.0	30,746
Task Subtotal:		\$18,040.00	\$1,640.00	\$12,730.00	\$23,760.00	\$7,560.00	\$1,320.00	\$7,400.00	\$190,800.00	\$28,000.00	\$15,000.00	\$306,250.00

*Construction cost per week = \$7,061

TOTAL **\$306,250.00**

IV. QUALIFICATIONS AND EXPERIENCE

Eng., Inc. has recently performed several public utility and road projects similar in size, scope, budget, and schedule to the Adelaide Pointe Utility & Roadway Extensions project. Additionally, Eng. has successfully completed design and construction projects for the City of Muskegon. A representative list of completed projects is at the end of this section as well as detailed in our Road and Utility Project Matrix in the additional information section.

The work proposed for this project will be performed primarily out of our Grand Haven office with support provided from our Lansing office. The key personnel of the Grand Haven office have been involved in improving the infrastructure in West Michigan for over a decade. Eng. and our proposed team have successfully completed design and construction of similar projects. The following are significant water main replacement and roadway reconstruction projects:

- FY21 Major Street Reconstruction Project – Pennsylvania Avenue
- FY21 Sewer, Water and Road Reconstruction of Local Streets – Alpha Street, Devonshire Avenue, Samantha Avenue and Cavanaugh Road
- Jenison Avenue Water Main Replacement – Jenison Avenue
- Cawood Street Water Main Replacement – Cawood Street
- Verlinden Street Water Main Replacement – Verlinden Street
- Pleasant Grove Road Water Main Replacement – Pleasant Grove Road
- Cavanaugh Road Water Main Replacement – Cavanaugh Road
- Hunter Boulevard Water Main Replacement – Hunter Boulevard
- Maplehill Avenue Water Main Replacement – Maplehill Avenue
- Delta River Drive Improvements – Delta River Drive
- FY18 Major Street Rehabilitation Project – Jolly Road
- FY17 Major Street Rehabilitation Project – Jolly Road
- Stabler Street Reconstruction – Stabler Street
- Holmes Road Reconstruction Project – Holmes Road

These projects also included construction engineering services. Eng. has vast experience in construction inspection and documentation procedures for municipalities, MDOT, and EGLE, having successfully closed out all projects in a timely manner.

Eng. has also recently successfully completed several projects that encompass all of the elements proposed with the Adelaide Pointe project including water main, sanitary sewer, storm sewer and road reconstruction projects for cities all across the State of Michigan, all of which required EGLE permitting. Those projects include:

- Seminole Road Reconstruction – City of Norton Shores
- Forrest Park Road Reconstruction – City of Norton Shores
- Park Street Reconstruction – City of Muskegon Heights
- SRF/DWRF Project No. 4 and No. 10 – City of Muskegon
- Construct Water Main, Camp Grayling – DMVA, DTMB
- Mt. Garfield, Davis, Rood, Green & Torrent Reconstruction – City of Norton Shores
- Orchard Street Reconstruction – City of Grand Ledge
- Fitzgerald Park Water Main Replacement (Bore and Jack) – City of Grand Ledge
- Jenne Street & Bridge Street Reconstruction – City of Grand Ledge
- Green Street Reconstruction – City of Grand Ledge
- East River Street & Franklin Street Reconstruction – City of Grand Ledge
- East River Street & Russel Street Reconstruction – City of Grand Ledge
- East Front Street Reconstruction – City of Grand Ledge
- Washington Street Improvements (Bore and Jack) – City of Owosso

- Prospect Street Water Main and Street Improvements – City of Marshall
- East Drive, North Drive, and Mansion Street Improvements – City of Marshall

Almost all of our projects involve survey. Eng. Inc. is not just an engineering firm that has survey capabilities, we are an engineering and surveying firm. While the survey team supports the engineering team for road projects, we also work on survey-only projects. We have not completed a construction project without some kind of survey involved.

Soil borings and geotechnical investigations are a standard practice for all road and utility projects. Eng. has been teaming up with S&S for many years, and they have completed countless soil boring and geotechnical investigations and reports for Eng. projects. We are proud to have such a strong relationship with them and look forward to our continued partnership.

In summary, Eng. has completed design and construction engineering services for multiple projects that have almost the exact elements and challenges as the Adelaide Pointe Utility & Roadway Extensions project. Eng. is extremely confident in its ability to deliver a high-quality product, on time and on budget.

We have a very strong relationship with our municipal clients, and we encourage you to reach out to the following references to discuss the quality of work, character, integrity, and competence of both Eng. as a firm and Ryan McEnhill as a project manager and client contact.

Municipality/Address	Name, Title	Phone	Email
City of Lansing	Dan Danke, PE, Project Engineer Marc Jones, PE, Project Engineer Andy Kilpatrick, PE, Public Service Director	(517) 483-4455 (517) 388-9474 (517) 282-1248	dan.danke@lansingmi.gov marc.jones@lansingmi.gov andrew.kilpatrick@lansingmi.gov
City of Grand Ledge	Adam Smith, City Manager Kurt Ristow, Public Works Superintendent	(517) 627-2149 (517) 627-2144	asmith@cityofgrandledge.com kristow@cityofgrandledge.com
City of Norton Shores	Jim Murphy, PE, Director of Public Works	(231) 799-6803	jmurphy@nortonshores.org

The following projects required a broad range of engineering knowledge including surveying, design, permitting, easement drafting and acquisition, utility design, roadway design, and construction engineering services.

Scope of Services Included

1. **FY22 Waverly Road Major Street Rehabilitation – 2021 Road, Watermain, Sanitary, Storm** *City of Lansing, MI, Project Length: 1.0 mile, Construction Cost (estimated): \$1,950,000; Fee \$224,535.44*

This project will rehabilitate or reconstruct Waverly Road from Jolly Road to Holmes Road. The project will receive federal funding and will therefore be bid through the MDOT Local Agency Program. A major component of this project is scoping to assist the City in determining whether rehabilitation or reconstruction is the best course of action. Eng. is also responsible for reviewing, evaluating, and making sewer repair or replacement recommendations to the City, as well as developing traffic control plans, right-of-way needs, and applying and securing all permits necessary for construction. Eng. is responsible for the survey, design, and construction engineering services for the project. The drawings, specifications and estimate will be combined into a single bid package. The project is currently in the design phase.

2. **Green Street Reconstruction – 2021..... Road, Watermain, Sanitary, Storm** *City of Grand Ledge, MI, Project Length: 0.2 miles, Construction Cost: (estimated) \$850,000, Fee \$9,800.00 (design)*

This MDOT Local agency project consists of full depth reconstruction of the roadway including watermain, sanitary sewer and storm sewer. New sidewalks and ADA ramps will also be constructed. Eng. is responsible for survey, design, and construction administration. Construction is anticipated in 2022.

3. Orchard Street Reconstruction – 2021..... Road, Watermain, Sanitary, Storm
City of Grand Ledge, MI, Project Length: 0.2 miles, Construction Cost: (estimated) \$1,000,000; Fee \$133,644.00

This locally funded project consists of full depth reconstruction of the roadway including watermain, sanitary sewer and storm sewer. New sidewalks and ADA ramps will also be constructed, as well as additional on-street parallel parking and perpendicular parking. Temporary and permanent easements were also necessary. Eng. was responsible for survey, design, construction administration. The project is currently in construction.

4. C Drive Extension – 2021 Road, Sanitary, Storm
City of Grand Ledge, MI, Project Length: 0.05 miles, Construction Cost: \$120,000; Fee \$20,869.00

Constructed in 2021, this locally funded project extends the existing C Drive approximately 250 feet and includes paving the currently unpaved portion, extending the storm and sanitary sewers, curb and gutter and roadway construction.

5. Forest Park Road Reconstruction – 2021 Road, Watermain, Sanitary, Storm
City of Norton Shores, MI, Project Length: 0.50 miles, Construction Cost (estimated): \$1,400,000; Fee \$136,545.00

This locally funded project consists of full depth roadway reconstruction of 0.50 miles of Forest Park Road in the City of Norton Shores. The work includes storm sewer upgrades, sanitary sewer repairs, watermain improvements, and culvert and guardrail replacements. Eng., Inc. is responsible for the survey, design, and construction engineering services for both phases. The project is currently in the design phase.

6. FY21 Sewer, Watermain and Road Reconstruction of Local Streets Road, Watermain, Sanitary, Storm

City of Lansing, MI, Project Length: 2.25 miles, Construction Cost (estimated): \$4,800,000; Fee \$371,711.12
This locally funded project consists of seven different road segments throughout the City of Lansing totaling over 2 miles. All road segments will require sanitary sewer replacement and repairs and storm sewer replacement and repairs. Additionally, road rehabilitation and reconstructions will also be included ranging from mill and resurface and crush and shaping to full depth reconstruction. Four of the streets will also require watermain replacement by the Lansing Board of Water and Light. The work also includes ADA sidewalk ramp upgrades throughout. Eng., Inc. is responsible for televising review, scoping, survey, design, and construction engineering services. The drawings, specifications and estimate will be combined into one or multiple bid packages. The project is currently in the design phase.

7. FY21 Major Street Rehabilitation Project – 2020..... Road, Watermain, Storm, Sanitary
City of Lansing, MI, Project Length: 0.5 miles, Construction Cost (est): \$1,852,897.00; Fee \$68,847.53 (design)

This federal aid project consists of the reconstruction of Pennsylvania Avenue from Health Care Court to Mt Hope Avenue in the City of Lansing. Additionally, watermain design and construction engineering has been added by the Lansing Board of Water and Light. The work also includes ADA sidewalk ramps and select sewer repair. Eng., Inc. completed a separate scoping project (listed below) which involved sewer televising review and recommendations. Eng., Inc. is responsible for the survey, design, and construction engineering services for the project. The drawings, specifications and estimate will be combined into a single bid package. The project is currently in the design phase.

8. East Drive, North Drive, and Mansion Street Improvements 2020..... Road, Watermain
City of Marshall, MI, Project Length: 1.67 miles, Construction Cost: \$850,000; Fee \$129,049.00

This federal aid project consists of reconstructing Mansion Street from Madison Street to High Street and rehabilitating Mansion Street from High Street to East Street, East Street from Michigan Avenue to North Street, and North Street from East Street to Madison Street. Additionally, the watermain will be replaced in the full depth reconstruction portion of Mansion Street. The project also includes ADA ramp upgrades and curb and gutter spot replacement. Eng., Inc. is responsible for the survey, design, and construction engineering services. The drawings will be combined and bid through MDOT in one single bid package. The project is currently in the construction phase.

9. Seminole Road Reconstruction – 2020 Road, Watermain, Sanitary, Storm

City of Norton Shores, MI, Project Length: 0.56 miles, Construction Cost (est): \$3,000,000; Fee \$347,075.00

This federal aid project consists of full depth of 0.56 miles of Seminole Road in the City of Norton Shores. The work includes storm sewer upgrades, sanitary sewer repairs, and watermain improvements. Additionally, new landscaping and lighting is part of the scope. The project is divided into two phases, with construction of phase 1 in 2021 and phase 2 in 2022. Eng., Inc. is responsible for the survey, design, and construction engineering services for both phases. The project is currently in construction.

10. Cambridge to Frances River Trail Extension Project – 2021 Road, Sanitary, Storm

City of Lansing, MI, Project Length: .33 miles, Construction Cost (est): \$1,000,000, Fee: \$223,158.00

This project is partially funded by a DNR grant through the Department of Parks and Recreation. The project consists of extending the Lansing River Trail from the Frances Park entrance to Cambridge Road. The steep grade along the bank of the Red Cedar River presents several design challenges. Additionally, the City of Lansing Public Service has contributed to rehabilitate Moores River Drive and redesign the storm sewer system to eliminate two direct outfalls to the river. Eng. Inc. is responsible for survey, design, and construction engineering services. The project is currently under construction.

11. Downtown Two-way Conversion – 2020 Road, Sanitary, Storm

City of Lansing, MI, Construction Cost: \$850,000; Fee: \$164,204.00

This project is currently in the construction phase. The City of Lansing is converting several one-way streets into two-way streets throughout the downtown area. The design consists of radii improvements to facilitate right turn movements which includes ADA ramp design. Additionally, two new crossovers will be installed on MLK Jr. Blvd. Eng., Inc. will be responsible for survey, design, and construction engineering services for this project.

12. Park Street Improvement Project – 2020 Road

City of Muskegon Heights, MI, Project Length 0.63 miles, Construction Cost: \$455,000; Fee: \$37,900.00

This project is partially funded with an MDOT TEDF-F grant and consists of HMA cold milling and resurfacing, spot curb repair, ADA sidewalk ramps and minor storm sewer work.

13. Jenne Street and Bridge Street – 2020 Road, Watermain, Sanitary, Storm

City of Grand Ledge, MI, Project Length: .34 miles, Construction Cost: \$1,534,800; Fee: \$115,400.00

This MDOT Local agency project consists of full depth reconstruction of the roadway including watermain, sanitary sewer and storm sewer. New sidewalks and ADA ramps will also be constructed. Eng., Inc. took over after the design phase and was responsible for all construction engineering services.

14. Lansing BWL - Watermain Design Verlinden, Cawood, Jenison - 2020 Road, Watermain

Lansing Board of Water and Light, Project Length: 2.0 miles, Construction Cost: TBD; Fee: \$135,000.00

This project consists of replacement of roughly 2 miles of existing watermain in Verlinden Avenue from Michigan Avenue to Saginaw Street, Cawood Street from Saginaw Street to Willow Street and Jenison Avenue from Michigan Avenue to Willow Street. Eng., Inc. is responsible for survey and design. Additionally, Eng., Inc. completed construction inspection of the restoration work on behalf of the City of Lansing.

15. FY2020 Major Street Rehabilitation Project – 2019..... Road, Sanitary

City of Lansing, MI, Project Length: 2.18 miles, Construction Cost (estimated): \$2,789,500; Fee: \$337,550.00

This federal aid project consists of cold milling and resurfacing the HMA pavement on portions of Jolly Road and Aurelius Roads, as well as full depth roadway reconstruction of Enterprise Drive in the City of Lansing. The work also includes ADA sidewalk ramps, spot curb repairs, select sewer repair / rehabilitation and spot base / subbase repairs. Eng., Inc. was responsible for the survey, design, and construction engineering services for the project. The drawings, specifications and estimates were combined into a single bid package.

16. SRF/DWRF Implementation Projects No. 4 & No. 10 – 2019..... Road, Watermain, Sanitary, Storm

City of Muskegon, MI, Project Length: 1 mile, Construction Cost: \$3,075,000; Fee: \$240,200.00

This State Revolving Fund project consists of reconstructing several failing sanitary sewer and water systems throughout the City. The project(s) consist of replacement and re-routing of a 36-inch trunk line sanitary sewer, replacement of 8, 12, and 18-inch sanitary sewers, meter replacement, replacement of the 16-inch watermain,

full depth reconstruction of the roadway, sidewalks and ADA ramps, and construction of new storm sewers. The project required permits from the State of Michigan for water distribution and sanitary sewer systems. The design was completed in May 2019 and construction was completed in 2021.

17. Delta River Drive Rehabilitation Project – 2020..... Road, Watermain, Sanitary, Storm
City of Lansing, MI, Project Length: 1.26 miles, Construction Cost: \$1,476,000; Fee: \$159,050.00

This local project consists of cold milling and resurfacing the HMA pavement. This project also includes watermain design and construction, sanitary and storm sewer repair and rehabilitation, curb and gutter repairs and ADA sidewalk ramp upgrades. Eng., Inc. was responsible for survey, design, and construction engineering services for the project.

18. Frandora Hills Sanitary Sewer Rehabilitation – 2021..... Road, Sanitary, Storm
City of Lansing, MI, Construction Cost (estimated): \$1,500,000; Fee: \$257,400.00

This local street and sanitary sewer project are in cooperation with the Ingham County Drain Commissioner's Montgomery Drain project. The project includes sanitary sewer replacement and repairs, storm sewer replacement and full depth roadway reconstruction. Eng., Inc. provided scoping, survey, and design services for the City and ICDC, and is providing construction engineering services for the City of Lansing.

19. Washington Street Improvement Project – 2018 Road, Watermain, Sanitary, Storm
City of Owosso, MI, Project Length: 0.34 Miles, Construction Cost: \$1,121,218.00, Fee: \$132,000.00

This federal aid project consists of full depth reconstruction of the roadway including watermain to be bored and jacked under the Huron and Eastern Railway. The work also includes storm sewer replacement, sanitary sewer spot repair and ADA sidewalk ramps. The project was completed in the fall of 2019. Eng., Inc. provided construction engineering services for this project.

20. Howe Road – Camp Grayling – 2018..... Road, Storm
Michigan DMVA, Project Length 1.7 miles, Construction Cost \$1.3M; Fee: \$29,988.00

The Department of Military and Veterans' Affairs received stimulus funds for improvements at Camp Grayling. Working as a sub consultant to Environmental Consulting & Technology, Eng. designed over two miles of HMA milling and resurfacing, new pedestrian pathway, drainage improvements and paving of four parking areas. The design was completed on a fast track to meet federal funding obligations.

21. Green Street Reconstruction – 2018..... Road, Sanitary, Watermain
City of Grand Ledge, MI Project Length: 500 LF, Construction Cost: \$213,000.00, Fee \$28,000.00

This locally funded project consisted of full depth reconstruction of the roadway including new sanitary sewer, watermain, and ADA sidewalk ramps.

22. FY18 Major Street Rehabilitation Projects – 2018 Road, Watermain, Sanitary, Storm
City of Lansing, MI, Project Length: 1.19 Miles, Construction Cost: \$2,283,000.00, Fee: \$216,000.00

This federal aid project consisted of cold milling and resurfacing the HMA pavement on portions of Jolly Road and Pennsylvania Avenue in the City of Lansing. The work also included raw watermain installation, ADA sidewalk ramps, spot curb repairs, select sewer repair / rehabilitation, and spot base / subbase repairs. Eng., Inc. was responsible for design of the Jolly Road portion of the project. The City designed Pennsylvania Avenue. The drawings, specifications, and estimates were combined into a single bid package. Eng., Inc. provided construction engineering services for both projects.

23. Stabler Street Rehabilitation – 2018 Road, Watermain, Sanitary, Storm
City of Lansing, MI, Project Length: 2400 LF, Construction Cost: \$761,500, Fee \$124,000.00

This project was locally funded and consisted of HMA pavement removal and replacement, base repairs, spot curb repair, ADA sidewalk ramps, spot sewer repair, and watermain replacement.

Additional pertinent projects are included in the Road and Utility Project Matrix, included in Additional Information.

V. PROJECT STAFF DESCRIPTION

The project team is made up of individuals with vast experience in projects similar to the Adelaide Pointe Utility & Roadway Extensions Project. This same team has recently completed several of the previously listed public utility and road reconstruction projects for the Cities of Muskegon, Norton Shores, Lansing, Grand Ledge, Owosso, and Marshall.

Principal-in-Charge & Project Manager will be **Ryan C. McEnhill, PE**. As President of Eng. and manager of our Grand Haven office, Mr. McEnhill has a vested interest in the success of projects in West Michigan. Mr. McEnhill is an experienced, skilled, detail-oriented engineer specializing in transportation and utilities of municipalities. He is well respected by subconsultants, clients, EGLE, MDOT personnel, as well as contractors throughout the state. Mr. McEnhill has recently completed numerous municipal road and utility projects similar to the proposed Adelaide Pointe Utility & Roadway Extensions project in all roles and has significant experience with road, water main, sanitary sewer, and storm sewer projects.

With more than 20 years of experience in municipal engineering, Mr. McEnhill has developed from a field technician, learning the field from the ground up, to President of the company and a member of the Board of Directors. Mr. McEnhill was recently the project manager on two projects for the City of Muskegon FY 2019 SRF & DWRP Project Implementation Project and is very familiar with City standards and processes.

In addition to Mr. McEnhill's municipal resume, he also specializes in storm water management, working with both County Drain Commissioners and Water Resources Commissioners to administer projects under the Michigan Drain Code throughout the State of Michigan. He also oversees the storm water management site plan review for the City of Muskegon, Muskegon County, Ottawa County, and Barry County. His diverse storm water experience includes storm water management review, stream restoration design, wetland mitigation and enclosed storm sewer system projects.

As primary contact and project manager, Mr. McEnhill will fulfil the tasks of tracking schedules and budgets as well as overseeing and directing the detailed design. He will also oversee construction engineering of the project. Additionally, Mr. McEnhill will give direction and authority to all personnel, scheduling and managing staff and subconsultants, as well as frequently communicating directly with construction contractors to answer questions, solve problems, and determine scheduling needs.

Eng. prides itself on being a smaller firm with a big firm ability. When the project manager has authority to negotiate on behalf of the firm, decisions are made in a very timely manner, efficiently and with decisiveness.

In addition to Mr. McEnhill's technical resume, he has a unique ability to lead and manage and takes great pride in leadership, mentorship, and management. His ability to run a meeting and control a room full of stakeholders with different project goals and objectives will be evident from the kickoff meeting forward. Striving for the best in everything he does, Mr. McEnhill goes above and beyond to ensure that projects are delivered on time and on budget. Mr. McEnhill also has a passion for building long term relationships, knowing that relationships outlast any individual project. This value is instilled in the Eng. company culture as he leads and mentors staff to fulfil long and satisfying careers.

Quality Control Review will be completed by **Erik J. Morris, PE**. As Vice President of Eng. and manager of our Lansing office, Mr. Morris is an experienced engineer who is managing projects all over mid-Michigan. Beginning his career in our Lansing office, he quickly established himself as a lead design engineer on municipal engineering projects for the City of Lansing and City of Grand Ledge and continues to perform a QA/QC role on all Eng. municipal projects.

Mr. Morris' extensive knowledge of all aspects of municipal engineering project makes him an excellent choice for QA/QC review.

Construction Manager will be **Matthew J. Frezza**. Mr. Frezza has applied an impressive understanding of the scope of complex problems to his innovative design solutions, and he is fully qualified and capable to design and manage the project from inception through construction administration services on a variety of types of projects. His

experience in all aspects of municipal engineering and materials testing, including asphalt, concrete, and soils, is a valuable resource for road projects especially. Mr. Frezza has worked with Mr. McEnhill on numerous successful projects similar to the Adelaide Pointe Utility & Roadway Extensions project.

After excelling early in his career in construction inspection, Mr. Frezza has recently been promoted to Construction Manager, being the first call for construction inspectors to resolve issues and answer questions. His ability to explain construction techniques and requirements as well as communicate with contractors, and clients has provided great value to projects.

Mr. Frezza will be responsible for overall construction management and observation of the project.

Construction Certified Office Technician and Materials Testing Manager will be **Linda K. Cook**. Ms. Cook is an MDOT Certified Computerized Office Technician. With significant up-to-date experience with FieldManager, she will process all required project documentation. Ms. Cook excels at construction administration; specifically, site inspection, measures, calculations, reporting, specifications, submittals, and materials testing. Recently Ms. Cook has performed Office Technician duties for the Seminole Road Project for the City of Norton Shores, FY2020 STP Major Streets Project for the City of Lansing, the Jenne and Bridge Street Reconstruction Project for the City of Grand Ledge and the East Drive, North Drive, and Mansion Street Improvements Project for the City of Marshall, all of which were MDOT LAP projects.

Additionally, Ms. Cook manages Eng.'s materials testing program. Being a certified Radiation Safety Officer and completing all required training, combined with her experience in the field, Ms. Cook is a natural fit in this role. She will be responsible for scheduling, testing compliance, report review and delivery for all materials testing performed by Eng.

Construction Inspector will be performed by either **Matthew J. Frezza, Robert B. Shlimovitz, or other available staff engineers**. Both Matthew and Rob are highly qualified inspectors with excellent communication skill and can comprehend design, communicate with contractors, and provide detailed documentation. Both come from a construction background, previously being a site Superintendent overseeing underground construction projects, and are on track to excel as talented municipal engineers. Both Matt and Rob have worked on the detailed design and inspection of road, storm sewer, water main and drain projects in West Michigan. They have worked to improve the infrastructure of the City of Norton Shores on several projects and have significant local experience on road and utility projects in Muskegon and Ottawa Counties.

CAD Drafting of record drawings will be led by **Steven P. Mayes**. Mr. Mayes has been a civil engineering technician for over 40 years. He is extremely knowledgeable in AutoCAD and has familiarized himself with the City of Muskegon standards. Mr. Mayes will be assisted by **Scott G. Smith**, an accomplished and experienced AutoCAD technician, who has also served on the Eng. team for every project over the past year.

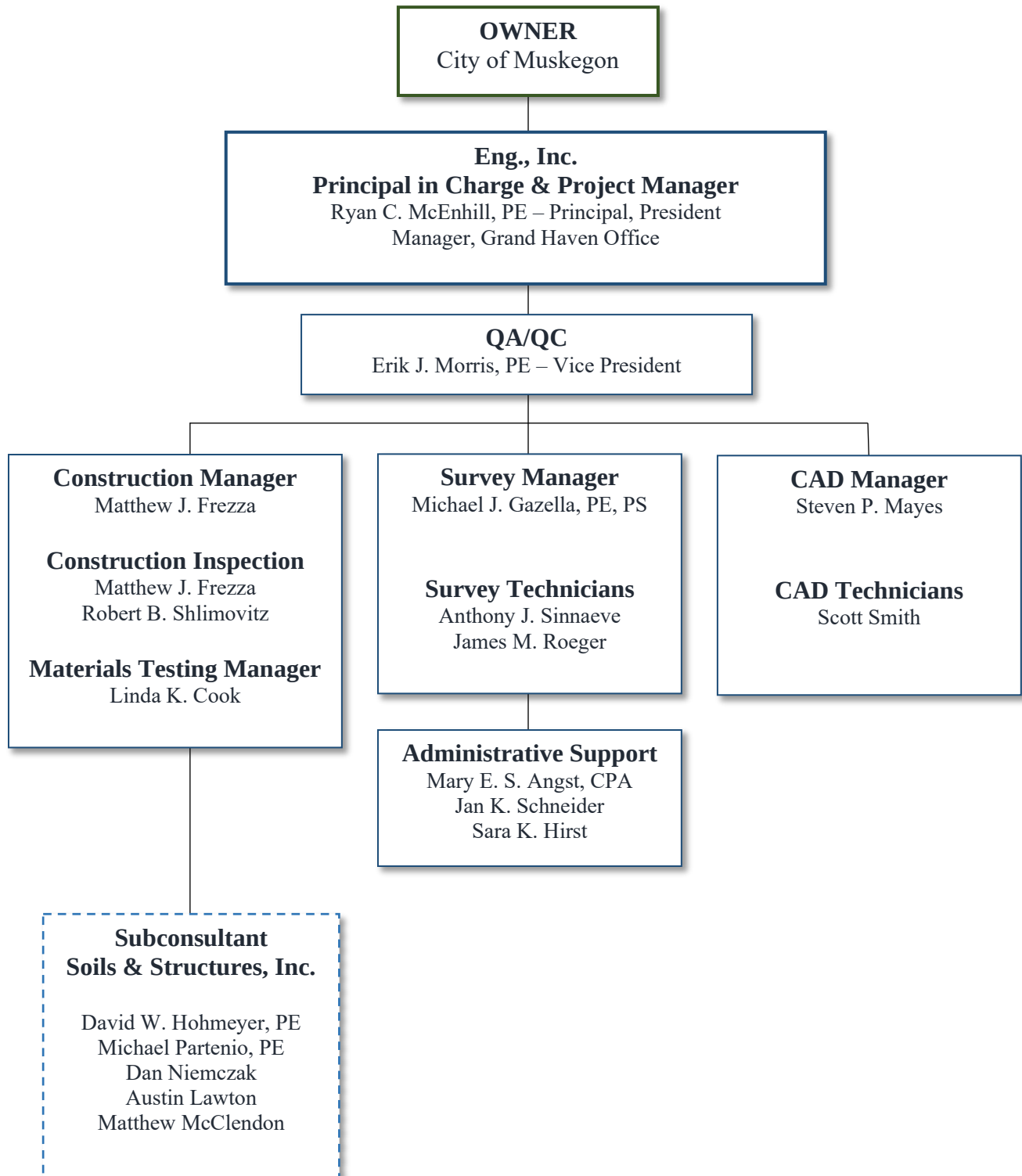
Eng., Inc. staff will perform all tasks associated with this project except the following, which we have requested of a subconsultant who has significant previous experience working with Eng. successfully. Resumes of the subconsultant team are available upon request.

Abbreviated Materials Testing will be provided by **Soils & Structures, Inc. (S&S)** as a subconsultant. Eng. and S&S have been teaming up on projects similar to this proposed project for over 8 years.

The following chart lists degree-specialty-registration information, number of years of experience, and physical location of key Eng. personnel. Eng. Organization Chart and Key Personnel resumes follow.

Key Personnel Qualifications Chart					
Name, Title	Degree Specialty /	Total Years of Exp.	Years with Eng.	Office Location	Specialized Training
Ryan McEnhill, PE President, Eng., Inc. Principal In Charge	B.S., Civil Engineering, 2004 Michigan State University East Lansing, MI	21	21	Grand Haven	Michigan Licensed Professional Engineer: #56096 EGLE Certified Storm Water Management - Construction Site: A-1j #C-10932 EGLE Certified Soil Erosion and Sediment Control Agent, Plan Review & Design SE/C #01489
Erik Morris, PE Vice President, Eng., Inc. Principal	B.S., Civil Engineering, 2006 Michigan State University East Lansing, MI	16	16	Lansing	Michigan Licensed Professional Engineer: #66586 EGLE Certified Storm Water Management - Construction Site: A-1j #C-14943 EGLE Certified Soil Erosion and Sediment Control Agent, Plan Review & Design SE/C #01317 MDOT Certified Computerized Office Technician MDOT Density Technology Certified Nuclear Gauge Safety Certification Radiation Safety Officer Certification
Robert Shlimovitz, Construction Inspector	B.S., Geological Engineering, 2018, Michigan Technological University, Houghton, MI	3	1	Grand Haven	EGLE Certified Storm Water Management - Construction Site: A-1j #C-23661 Soil Erosion and Sediment Control Agent, Plan Review & Design: SE/C #03432 40-Hour MSHA Certification
Michael Gazella PS, PE Eng., Inc. Survey Manager, Senior Engineer	B.S. Land Surveying, 1979 Ferris State College Big Rapids, MI B.S. Civil Engineering, 1991 Michigan State University East Lansing, MI	43	25	Lansing	Michigan Licensed Professional Surveyor #45499 Michigan Licensed Professional Engineer #45086 EGLE Certified Storm Water Management - Construction Site: A-1j #C-12445 EGLE Certified Soil Erosion and Sediment Control Agent, Plan Review & Design SE/C #00864
Linda Cook Eng., Inc. Staff Engineer, Office Technician, Materials Testing Manager	B.S., Applied Engineering Sciences, 1993 Michigan State University East Lansing, MI	14	4	Lansing	EGLE Certified Storm Water Management - Construction Site: A-1j #C-21277 FieldManager Certification MDOT Certified Computerized Office Technician MDOT Density Technology Certified Nuclear Gauge Safety Certification Radiation Safety Officer Certification Materials Acceptance Processing
Matthew Frezza Eng., Inc. Staff Engineer	AAS, Civil Technology, 2019 Lansing Community College Lansing, MI	4	3	Grand Haven	EGLE Certified Storm Water Management - Construction Site: A-1j #C-22526 EGLE Certified Soil Erosion and Sediment Control Agent, Plan Review & Design: SE/C #03195 Density Testing Qualified, ID No. 32048
Steven Mayes Eng., Inc. CAD Manager	1998 – Present: Senior CAD Technician, CAD Manager Eng., Inc. Lansing, MI	44	24	Lansing	ADSK Civil 3D Intergraph Site Works Micro Station Graphics AutoCAD Application AutoCAD Customizing AutoCAD Map

Organizational Chart – Project Specific





Education

B.S., Civil Engineering, 2006
Michigan State University
East Lansing, MI

License

Michigan Licensed Professional
Engineer #6201066586

Certification & Training

EGLE Certified Storm Water
Management - Construction Site:
A-1j #C-14943

EGLE Certified Soil Erosion and
Sediment Control Agent, Plan
Review & Design SE/C #01317

MDOT Certified Computerized
Office Technician

FieldManager Training 2015

Licensed Radiation Safety Officer

Certified in Nuclear Gauge Safety
and HAZMAT 2021

Density Testing Qualified, ID No.
12530-0426

Professional Experience

2007 – present: Vice President
Eng., Inc.
Lansing, MI

Erik Morris is a skilled, detailed, municipal engineer. He has extensive experience with design and construction of roadway reconstruction projects, ADA compliant sidewalks and ramps, is proficient in the use of “FieldManager” software and is an MDOT Certified Office Technician. Mr. Morris has positively impacted the infrastructure of Eaton, Ingham and Clinton counties, and the cities of Lansing, Grand Ledge, Owosso, Norton Shores and Muskegon. A well-rounded engineer, he has demonstrated expertise in field management, surveying, construction inspection, and detailed design and construction administration. With his depth of experience, Mr. Morris is an effective project manager. Mr. Morris is a Principal Partner at Eng. and currently serves as its Vice President.

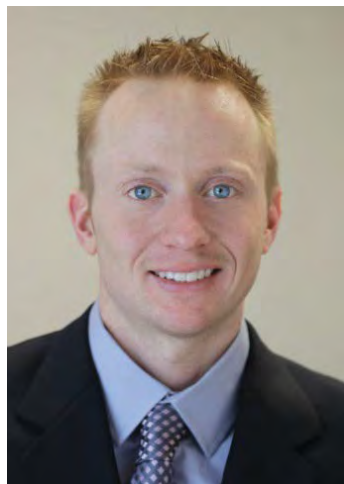
Representative Projects

- STP Michigan Avenue 2023-24, City of Lansing, MI
- Ramona Park Subdivision Improvements, City of Portage, MI
- Webster Road Resurfacing & Sidewalks, Clinton County, MI
- Lansing Service Center Water Main Extension, Consumers Energy, Lansing, MI
- 2023 North Street Rehabilitation, City of Owosso, MI
- Prospect Street Water Main and Road Reconstruction, City of Marshall, MI
- FY22 STP Waverly Road Major Street Project, City of Lansing, MI
- FY21 Sewer, Water Main and Road Reconstruction of Local Streets, City of Lansing, MI
- Maple Avenue Improvements, City of Owosso, MI
- FY21 Major Street Rehabilitation Project, City of Lansing, MI
- Cambridge to Frances River Trail Extension Project, City of Lansing, MI
- East Drive, North Drive, and Mansion Street Improvements – 2020, City of Marshall, MI
- Lansing Downtown Two-way Conversion, City of Lansing, MI
- MDOT - Jenne Street and Bridge Street, City of Grand Ledge, MI
- FY2020 STP Major Street Rehabilitation Project, City of Lansing, MI
- As-Needed Scoping Services for Major Streets, City of Lansing, MI
- SRF Project No. 4 & No. 10, City of Muskegon, MI
- Muskegon DWRP Water Main, City of Muskegon, MI
- Frandora Hills Sanitary Sewer Rehabilitation, City of Lansing, MI
- Morley Street Improvements, City of Grand Ledge, MI
- Washington Street Reconstruction, City of Owosso, MI
- Green Street Reconstruction, City of Grand Ledge, MI
- FY18 Major Street Rehabilitation, City of Lansing, MI
- Stabler Street Rehabilitation, City of Lansing, MI
- FY17 Major Street Rehabilitation, City of Lansing, MI
- East River/Franklin Street Reconstruction, City of Grand Ledge, MI
- East River/Russell Street Reconstruction, City of Grand Ledge, MI
- Holmes Road Reconstruction (2014 and 2010), City of Lansing, MI
- East Front Street Reconstruction, City of Grand Ledge, MI
- Spring/W. Lincoln Street Reconstruction, City of Grand Ledge, MI



Ryan C. McEnhill, PE

Principal



Education

B.S., Civil Engineering, 2004
Michigan State University
East Lansing, MI

Undergraduate Studies:
Chemical Engineering
Western Michigan University
Kalamazoo, MI

License

Michigan Licensed Professional
Engineer #56096

Ohio Licensed Professional
Engineer #PE.75791

Certification & Training

EGLE Certified Storm Water
Management - Construction Site:
A-1j #C-10932

EGLE Certified Soil Erosion and
Sediment Control Agent, Plan
Review & Design: SE/C #01489

Professional Experience

2002 – Present: President
Eng., Inc.
Grand Haven and Lansing, MI

In his twenty years with Eng., Inc. Ryan McEnhill has gained extensive experience in the design and construction of road and utility projects throughout Michigan. Beginning his career in our Lansing, MI office he quickly became the lead design engineer on municipal engineering projects including road improvements, bike paths, water distribution systems, sanitary sewers, and drainage systems. In 2017, he became the manager of our first branch office in Grand Haven, MI while performing all QA/QC reviews companywide on municipal projects. In 2019, Mr. McEnhill became a Principal Partner at Eng., Inc. and currently serves as its President.

Mr. McEnhill's experience includes recent road reconstruction and utility projects for the cities of Muskegon, Lansing, Norton Shores, Owosso, and the Ingham County Road Department, as well as drain projects for the Muskegon, Ottawa, and Allegan County Drain / Water Resources Commissioners and private development projects across the State.

Representative Projects

- Lansing Service Center Water Main Extension, Consumers Energy, Lansing, MI
- FY22 STP Waverly Road Major Street Project, City of Lansing, MI
- Forest Park Road Reconstruction, City of Norton Shores, MI
- Grand Haven High School Roadway Design, Grand Haven Area Public Schools
- Seminole Road Reconstruction Project, City of Norton Shores, MI
- Black Creek Consolidated Drain, Muskegon County, MI
- Park Street Improvement Project, City of Muskegon Heights, MI
- 2019 Safety Project, Padelt & Seminole Crosswalk, City of Norton Shores, MI
- 2019 (FY20) HMA & HIP Construction Oversight, City of Norton Shores, MI
- SRF Project No. 4 & No. 10, City of Muskegon, MI
- Frandora Hills Sanitary Sewer Rehabilitation, City of Lansing, MI
- Washington Street Improvements, City of Owosso, MI
- 2019 City Sidewalk Construction, Norton Shores, MI
- Discount Tire, Multiple Sites, Michigan and Ohio
- Ottawa County Water Resources Commissioner – Lovell Park South Drain Improvements, Ottawa County, MI
- Grand Haven Area Public Schools – Ferry Elementary Playground Site Survey & Design, Grand Haven MI
- Ribe Drain Bore & Jack, Muskegon County, MI
- 2016 City Street Reconstruction, City of Norton Shores, MI
- 2014 Sanitary Sewer Rehabilitation, City of Lansing, MI
- Mt. Garfield/Davis, Rood & Green Street Reconstruction, City of Norton Shores, MI
- Holmes Road Reconstruction, City of Lansing, MI



Education

B.S., Geological Engineering,
2018
Michigan Technological
University
Houghton, MI

Certification & Training

EGLE Certified Soil Erosion and
Sediment Control Agent, Plan
Review & Design: SE/C #03432

EGLE Certified Storm Water
Management - Construction Site:
A-1j #C-23661

40-Hour MSHA Certification

Professional Experience

2022 – present: Staff Engineer
Eng., Inc.
Grand Rapids, MI

2020 – 2021: Project Engineer,
Harrison Western Construction,
Lakewood, CO

Robert Shlimovitz possesses an exceptional ability to easily adapt and communicate which, coupled with his strong work ethic and eagerness to learn, has placed him on track to excel as a talented municipal engineer. Mr. Shlimovitz has quickly completed the training and certifications that qualify him for construction inspection and administration for all types of municipal projects. Having proved himself to be an innovative designer and a quality inspector, he can comprehend construction documents, communicate with contractors, and provide detailed documentation. He has recently successfully designed or inspected Eng. construction and improvement projects including:

Representative Projects

- Consumers Energy Grid Replacement projects, City of Lansing, MI
- Consumers Energy Inspection DAPP, City of Lansing, MI
- Fieldstone Farms No. 6, City of Grand Ledge, MI
- #172 Intercounty Drain (Montcalm & Gratiot Counties), Michigan Department of Agriculture and Rural Development
- Chaddock Drain, Muskegon County Water Resources Commissioner, Muskegon County, MI
- Waalkens Drain, Muskegon County Water Resources Commissioner, Muskegon County, MI
- Schwemer Drain, Muskegon County Water Resources Commissioner, Muskegon County, MI
- Peterson Road Drain, Muskegon County Water Resources Commissioner, Muskegon County, MI
- Irving Rodgers Drain, Kent County Drain Commission, Kent County, MI
- Britain Avenue Drain, Berrien County Drain Commission, Berrien County, MI
- Buell Murray Drain, Kalamazoo County Drain Commission, Kalamazoo County, MI
- Grand Haven Area Public Schools – Robinson Septic Improvements, Grand Haven MI
- Forest Park Road Reconstruction – Phase 3, City of Norton Shores, MI
- FY 23 HIP/HMA Construction Engineering, City of Norton Shores, MI
- As-Needed Consulting Services, Kalamazoo County Drain Commissioner
- Site Reviews for Stormwater Compliance, Ottawa County Water Resources Commissioner



Education

B.S., Applied Engineering Sciences, 1993
Michigan State University
East Lansing, MI

Certification & Training

EGLE Certified Storm Water Management - Construction Site: A-1j #C-21277

FieldManager Training
January 2020

MDOT Certified Computerized Office Technician

Licensed Radiation Safety Officer

Certified in Nuclear Gauge Safety and HAZMAT 2021

Density Testing Qualified, ID No. 12692-0127

Professional Experience

2019 – present: Staff Engineer
Eng., Inc.
Lansing, MI

2018 – 2019: Configuration Management
Convergenz, LLC
Vienne, VA

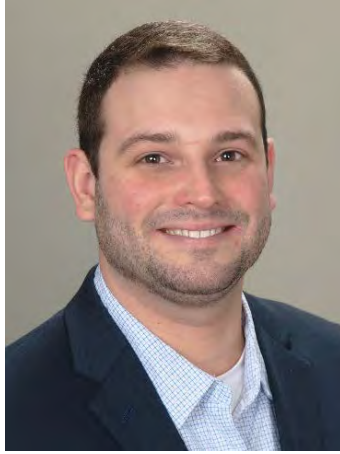
2016 – 2018: Data Analyst
One Magnify,
Detroit, MI

1997 – 2007: Staff Engineer
R&M Consultants
Anchorage, AK

Linda Cook graduated with a Bachelor of Science in Applied Engineering Sciences. Throughout her careers as a Staff Engineer, Data Analyst, and Configuration Manager, Ms. Cook has applied the principles of engineering to find solutions to problems. Ms. Cook is very detailed and excels at construction inspection and administration, specifically: site inspection, measures, calculations, reporting and materials testing. Ms. Cook is also experienced in plan and specification development, implementation and review, is trained in FieldManager software, is an MDOT Certified Computerized Office Technician, and can provide AutoCAD for civil drawings and estimates.

Representative Projects

- STP Michigan Avenue 2023-24, City of Lansing, MI
- FY22 STP Waverly Road Major Street Project, City of Lansing, MI
- FY21 STP Pennsylvania Avenue Major Street Project, City of Lansing, MI
- East Drive, North Drive, and Mansion Street Improvements, City of Marshall, MI
- 2023 North Street Rehabilitation, City of Owosso, MI
- FY2020 STP Major Street Rehab Project, City of Lansing, MI
- MDOT – Jenne Street and Bridge Street, City of Grand Ledge, MI
- Downtown Two-way Conversion, City of Lansing, MI
- Seminole Road Reconstruction, City of Norton Shores, MI
- Swiss Villages Drain, Ottawa County Water Resources Commissioner, Ottawa County, MI
- Coles Park Drain, Ottawa County Water Resources Commissioner, Ottawa County, MI
- Discount Tire – MIM 11970, Discount Tire Company, Marquette, MI
- Wildwood Springs Drain, Preliminary Engineering Services, Ottawa County Water Resources Commissioner, Ottawa County, MI
- SRF Implementation Projects No.4 & No. 10, City of Muskegon, MI
- Construction Drawing Reviews, City of Grand Ledge, MI
- Frandora Hills Sanitary Sewer Rehabilitation, City of Lansing, MI
- Replace Sanitary Sewer 500 Area, Department of Military and Veterans Affairs, Camp Grayling, Grayling, MI
- Cory Bishop Drain Design Engineering, Ottawa County Water Resources Commissioner, Ottawa County, MI
- Burcham Hills, MAYOTTEgroup Architects, East Lansing, MI
- Kuis Drain Construction Services, Muskegon County Water Resources Commissioner, Muskegon County, MI
- Montgomery Drain (M12-64) Design, Ingham County Drain Commissioner, Lansing, MI



Education

AAS, Civil Technology, 2019
Lansing Community College
Lansing, MI

Certification & Training

EGLE Certified Soil Erosion and
Sediment Control Agent, Plan
Review & Design: SE/C #03195

EGLE Certified Storm Water
Management - Construction Site:
A-1j #C-22526

Density Testing Qualified, ID No.
32048-0124

Professional Experience

2021 – present: Staff Engineer
Eng., Inc.
Grand Rapids, MI

2019 – 2020: Construction
Supervisor, Aviation Planner, Field
Technician

Other professional design firms
and municipal entities

Mr. Frezza comes from a construction background, previously as a site Superintendent overseeing underground construction projects, and is developing into a skilled municipal engineer. He has worked on the detailed design and inspection of road, storm sewer, water main and drain projects in West Michigan, and has considerable experience in materials testing. Mr. Frezza has worked to improve the infrastructure of the City of Norton Shores and has significant local experience on road and utility projects in Muskegon and Ottawa Counties.

Representative Projects

- Seminole Road Reconstruction Project, City of Norton Shores, MI
- Cambridge River Trail Extension, City of Lansing
- Main Street Cross Lot Sanitary Sewer Replacement, City of Grand Ledge, MI
- Benton Harbor Dollar General, Westwind Construction, Benton Harbor, MI
- Black Creek Consolidated Drain, Muskegon County, MI
- Discount Tire, MIP 12601, Discount Tire Company, Mt. Pleasant, MI
- Waalkens Drain, Muskegon County Water Resources Commissioner, Muskegon County, MI
- Schwemer Drain, Muskegon County Water Resources Commissioner, Muskegon County, MI
- Discount Tire, MIF 12053, Discount Tire Company, Grand Blanc MI
- Coles Park Drain, Ottawa County Water Resources Commissioner, Ottawa County, MI
- O.H. Scott & Waters Drain, Muskegon County Water Resources Commissioner, Muskegon County, MI
- Blanchard Dollar General, Westwind Construction, Blanchard, MI
- Edwardsburg Dollar General, Westwind Construction, Edwardsburg, MI
- Forest Park Road Reconstruction – Phase 3, City of Norton Shores, MI
- Peterson Road Drain, Muskegon County Water Resources Commissioner, Muskegon County, MI
- #172 Intercounty Drain (Montcalm & Gratiot Counties), Michigan Department of Agriculture and Rural Development
- Terrace Drain, Ottawa County Water Resources Commissioner, Ottawa County, MI
- FY 23 HIP/HMA Construction Engineering, City of Norton Shores, MI

**Education**

B.S. Land Surveying, 1979
Ferris State College
Big Rapids, MI

B.S. Civil Engineering, 1991
Michigan State University
East Lansing, MI

License

Michigan Licensed Professional
Surveyor #45499

Michigan Licensed Professional
Engineer #45086

Certification & Training

EGLE Certified Storm Water
Management - Construction Site:
A-1j #C-12445

EGLE Certified Soil Erosion and
Sediment Control Agent: SESC
Comprehensive SE/C #00864

Professional Experience

1997 – present: Survey Manager
and Senior Civil Engineer
Eng., Inc.
Lansing, MI

1979 – 1997: Civil Engineer and
Survey Technician
Other professional design firms

Mike Gazella is the Survey Manager responsible for topographic surveys for municipal, county, and private projects. Mr. Gazella has over 40 years of experience in the Civil Engineering and Land Surveying professions. His primary role as an engineer has been in the detailed design of municipal infrastructure projects including sanitary and storm water systems, water transmission and distribution systems, and street and road improvement projects. As a Project Surveyor, Mr. Gazella has extensive experience with land, topographic, control, and construction surveys.

Representative Projects

- STP Michigan Avenue 2023-24, City of Lansing, MI
- Webster Road Resurfacing & Sidewalks, Clinton County Road Commission
- Lansing Service Center Water Main Extension, Consumers Energy, Lansing, MI
- Prospect Street Water Main and Road Reconstruction, City of Marshall, MI
- FY22 STP Waverly Road Major Street Project, City of Lansing, MI
- FY21 Sewer, Water Main and Road Reconstruction of Local Streets, City of Lansing, MI
- Maple Avenue Improvements, City of Owosso, MI
- FY21 Major Street Rehabilitation Project, City of Lansing, MI
- FY2020 STP Major Street Rehabilitation Project, City of Lansing, MI
- Park Street Improvement Project, City of Muskegon Heights, MI
- Green Street Reconstruction, City of Grand Ledge, MI
- FY18 Major Street Rehabilitation, City of Lansing, MI
- Stabler Street Rehabilitation, City of Lansing, MI
- FY17 Major Street Rehabilitation, City of Lansing, MI
- East River/Franklin Street Reconstruction, City of Grand Ledge, MI
- Water Main Design-Multiple Locations, Lansing Board of Water and Light, MI
- East River/Russell Street Reconstruction, City of Grand Ledge, MI
- 2016 City Street Reconstruction, City of Norton Shores, MI
- Fred Meijer CIS Rails to Trails Project, Clinton, Ionia, and Shiawassee Counties, MI
- Camp Grayling Paving, Water, Sewer Projects, Grayling, MI
- Lansing Campground Survey, Lansing, MI
- Astera Credit Union (2 locations), Lansing, MI
- Ingham County 911 Facility Topographic Survey, Lansing, MI
- Burcham Hills, East Lansing, MI
- NCG Cinemas, Lansing Township, MI
- Waterbury Place, Meridian Township, MI
- Burrell Intercounty Drain, Delta Township, MI
- M-100 Non-motorized Pathway, City of Grand Ledge, MI
- Rosemary Ave. Pathway Project, Lansing Township, MI
- Canal Road Reconstruction, Delta Township, MI
- Northport Condominiums, Meridian Township, MI

**Education**

Bachelor of Science in Applied Mathematics, 1985
Ferris State University
Big Rapids, MI

Certifications & Training

Certified Survey Technician Level III, Boundary and Construction
NSPS-ACSM

Professional Experience

2008 – present: Survey Crew Chief
Eng., Inc.
Lansing, MI

1999 – 2008: Crew Chief
Wolverine Engineers and Surveyors, Inc.
Mason, MI

1999 – 2008: Rod Man
Wolverine Engineers and Surveyors, Inc.
Mason, MI

1994 – 1995: Rod Man
Larry Bryan Surveys
Haslett, MI

Tony Sinnaeve is a highly skilled survey technician and Survey Crew Chief for Eng., Inc. Tony has over a decade of experience, is a Level 3 Boundary and Construction Certified Survey Technician, and has taken the initiative to remain current with the latest technological advancements in his field. Currently, Tony uses a Robotic Total Station to complete boundary/ALTA and topographic surveys of various sized parcels as well as route surveys and construction staking. Along with his technical skills, Tony has also developed managerial skills and factors in scope, time and budget when directing his crew and making decisions.

Representative Projects

- STP Michigan Avenue 2023-24, City of Lansing, MI
- Lansing Service Center Water Main Extension, Consumers Energy, Lansing, MI
- Prospect Street Water Main and Road Reconstruction, City of Marshall, MI
- FY22 STP Waverly Road Major Street Project, City of Lansing, MI
- FY21 Sewer, Water Main and Road Reconstruction of Local Streets, City of Lansing, MI
- FY21 Major Street Rehabilitation Project, City of Lansing, MI
- Maple Avenue Improvements, City of Owosso, MI
- FY2020 STP Major Street Rehabilitation Project, City of Lansing, MI
- FireKeepers Casino 2019 Topographic Survey, FireKeepers Casino, Battle Creek, MI
- Pointe Marine Marina, Point Marine, North Muskegon, MI
- Southern Michigan Prison Complex, DTMB DOC, Jackson, MI
- Camp Grayling National Guard Training Facility, DMVA, Grayling, MI
- Green Street Reconstruction, City of Grand Ledge, MI
- FY18 Major Street Rehabilitation, City of Lansing, MI
- Stabler Street Rehabilitation, City of Lansing, MI
- Burcham Hills Retirement Center, MAYOTTEgroup Architects, East Lansing, MI
- MIA 16, Discount Tire, Jackson, MI
- SRF Projects No. 4 & No. 10 Implementation, City of Muskegon, MI
- Morley Street Improvements, City of Grand Ledge, MI
- FY18 Major Street Rehabilitation, City of Lansing, MI
- Rotary Shelter, Grand Ledge Rotary Club, City of Grand Ledge, MI
- FY18 Major Street Rehabilitation, City of Lansing, MI
- Stabler Street Rehabilitation, City of Lansing, MI
- Green Street Reconstruction, City of Grand Ledge, MI
- FY17 Major Street Rehabilitation, City of Lansing, MI
- Water Main Design-Multiple Locations, Lansing Board of Water and Light, MI



Education

Bachelor of Science in Civil
Engineering Technology /
Construction Technology, 1988
Purdue University
Ft. Wayne, IN

Professional Experience

2016 – present: Engineering
Technician and Survey Crew
Eng., Inc.
Lansing, MI

2005 – 2016: Mathematics
Instructor
Lubbock Independent School
District
Lubbock, TX

1991 – 2002: Aggregate
Technologist and Survey Crew
Chief
Other professional design firms

Jim Roeger came to Eng. with eleven years' experience as an aggregate technologist and survey crew chief, and has since demonstrated significant understanding and expertise in construction technology. Mr. Roeger's broad grasp of civil engineering construction processes has allowed Eng. to utilize his talents in a number of roles in anticipation of, during, and following construction of both transportation and drainage projects. This experience, in tandem with his agreeable disposition, makes him particularly well suited to road construction inspection.

Representative Projects

- STP Michigan Avenue 2023-24, City of Lansing, MI
- Lansing Service Center Water Main Extension, Consumers Energy, Lansing, MI
- Prospect Street Water Main and Road Reconstruction, City of Marshall, MI
- FY22 STP Waverly Road Major Street Project, City of Lansing, MI
- FY21 Sewer, Water Main and Road Reconstruction of Local Streets, City of Lansing, MI
- FY21 Major Street Rehabilitation Project, City of Lansing, MI
- Maple Avenue Improvements, City of Owosso, MI
- FY2020 STP Major Street Rehabilitation Project, City of Lansing, MI
- FireKeepers Casino 2019 Topographic Survey, FireKeepers Casino, Battle Creek, MI
- Pointe Marine Marina, Point Marine, North Muskegon, MI
- Southern Michigan Prison Complex, DTMB DOC, Jackson, MI
- Camp Grayling National Guard Training Facility, DMVA, Grayling, MI
- Green Street Reconstruction, City of Grand Ledge, MI
- FY18 Major Street Rehabilitation, City of Lansing, MI
- Stabler Street Rehabilitation, City of Lansing, MI
- Burcham Hills Retirement Center, MAYOTTEgroup Architects, East Lansing, MI
- SRF Projects No. 4 & No. 10 Implementation, City of Muskegon, MI
- Morley Street Improvements, City of Grand Ledge, MI
- FY18 Major Street Rehabilitation, City of Lansing, MI
- Rotary Shelter, Grand Ledge Rotary Club, City of Grand Ledge, MI
- Stabler Street Rehabilitation, City of Lansing, MI
- Green Street Reconstruction, City of Grand Ledge, MI
- 2016 City Street Reconstruction, City of Norton Shores, MI
- FY17 Major Street Rehabilitation, City of Lansing, MI
- East River/Franklin Street Reconstruction, City of Grand Ledge, MI
- White Pines and Griffin Access Road, Grand Haven, MI
- 2016 Sanitary Sewer Rehabilitation Projects, City of Lansing, MI



Certification & Training

Intergraph Site Works Training

Autodesk Land Desktop Training

Micro Station Graphics

AutoCAD Application

AutoCAD Customizing

AutoCAD Map Training

Professional Experience

1998 – Present: Senior CAD Technician, CAD Manager
Eng., Inc.
Lansing, MI

1978 – 1998: Senior Technician, Civil Technician, Drafting Technician, and Drafting Director
Other professional design firms.

As Senior CAD Technician, Steve Mayes directs and coordinates the production of computer-assisted documents required to illustrate the design and detail created by professional personnel. His experience includes the drafting of road plans, water distribution systems, storm sewer systems, wastewater collection and treatment facilities, topographic and boundary surveys, site plans and similar drawings utilized for physical improvements.

Mr. Mayes also assists with computer network administration and assures compatibility of systems both internally and with our clients. In the constantly changing software environment, dependability of equipment is key to maintaining client satisfaction. His duties include maintaining CAD standards consistent with specific client requirements. Mr. Mayes is knowledgeable in MDOT, AASHTO and ADA standards.

Representative Projects

- STP Michigan Avenue 2023-24, City of Lansing, MI
- Webster Road Resurfacing & Sidewalks, Clinton County Road Commission
- Lansing Service Center Water Main Extension, Consumers Energy, Lansing, MI
- 2023 North Street Rehabilitation, City of Owosso, MI
- Prospect Street Water Main and Road Reconstruction, City of Marshall, MI
- FY22 STP Waverly Road Major Street Project, City of Lansing, MI
- FY21 Sewer, Water Main and Road Reconstruction of Local Streets, City of Lansing, MI
- FY21 Major Street Rehabilitation Project, City of Lansing, MI
- Cambridge to Frances River Trail Extension Project, City of Lansing, MI
- Maple Avenue Improvements, City of Owosso, MI
- FY2020 STP Major Street Rehabilitation Project, City of Lansing, MI
- Park Street Improvement Project, City of Muskegon Heights, MI
- Washington Street Reconstruction, City of Owosso, MI
- Green Street Reconstruction, City of Grand Ledge, MI
- FY18 Major Street Rehabilitation, City of Lansing, MI
- Stabler Street Rehabilitation, City of Lansing, MI
- FY17 Major Street Rehabilitation, City of Lansing, MI
- Water Main Design-Multiple Locations, Lansing Board of Water and Light, MI
- East River/Franklin Street Reconstruction, City of Grand Ledge, MI
- East River/Russell Street Reconstruction, City of Grand Ledge, MI
- 2016 City Street Reconstruction, City of Norton Shores, MI
- M-100 Non-motorized Pathway, City of Grand Ledge, MI
- Rosemary Avenue Pathway Project, Lansing Township, MI
- Howe Road Extension and Paving Upgrade, Camp Grayling, MI
- Mill Street Bridge & Road Reconstruction, City of Leslie, MI
- Lake Lansing Road Reconstruction, Lansing Township, MI
- West Road and Coleman Road Reconstruction, City of East Lansing, MI



VI. AUTHORIZED NEGOTIATIONS

The following Principals are authorized to negotiate a contract with the issuing office:

Ryan C. McEnhill, PE, President

Eng., Inc.

16930 Robbins Road, Suite 105

Grand Haven, MI 49417

(616) 743-7070

Erik J. Morris, PE, Vice President

Eng., Inc.

4063 Grand Oak Drive, Suite A109

Lansing, MI 48911

(517) 887-1100

VII. ADDITIONAL INFORMATION

Eng., Inc. Road and Utility Project Matrix

Corporate Quality Control Standards

Insurance Verification

Subconsultant Information: Soils & Structures

Road and Utility Project Matrix																	
As of January 31, 2023																	
Project Name & Owner		Year	Cost	Length (miles)	Funding Source	HMA Roadway Reconstruction & Improvements	Drainage and Storm Water System Improvements	Replacement and/or Repair of Ex. Sanitary Sewer	Improvement & Replacement of Ex. Water Main & Services	Construction Inspection & Project Administration	Local & EGLE SESC Permits	Surveying	Legal Descriptions & Easements	EGLE Water Main and/or Sanitary Sewer Permits	Traffic Control Planning	Materials Testing & Pavement Design	Sewer Televising & Repair Recommendations
1	Stewart Street Reconstruction - City of Owosso	2023	\$1,400,000	0.3	MDOT LAP	X	X	X	X	X	X	X		X	X	X	
2	Michigan Avenue STP 2023-2024 - City of Lansing	2022	\$11,500,000 (Est)	1.37	Federal & Local	X	X	X	X	X	X	X	X	X	X	X	X
3	FY2022 Local Neighborhood Water Main Replacement & Roadway Improvements - City of East Lansing	2022	\$4,300,719 (Est)	2+	Locally Funded	X	X	X	X	X	X	X		X	X	X	X
4	South Kalamazoo Ave and Leggitt Rd - City of Marshall	2022	\$920,400 (Est)	0.6	State and Local	X	X	X	X		X	X		X	X		X
5	Ramona Park Subdivision Improvements - City of Portage	2022	\$1,000,000	1	Locally Funded	X	X	X	X	X	X	X		X	X	X	X
6	Webster Road Resurfacing & Sidewalks - Clinton County Road Commissioner	2022	\$1,300,000	1.5	Federal & Local	X	X			X	X	X	X		X	X	
7	2023 North Street Rehabilitation - City of Owosso	2022	\$1,550,000 (Est.)	0.5	Federal & Local	X	X		X			X		X	X		
8	Lansing Service Center Water Main Extension - Consumers Energy	2022	\$3,500,000	1.5	Locally Funded	X			X	X	X	X	X	X	X	X	
9	Seminole Road Reconstruction Phase II - City of Norton Shores	2022	\$1,500,000 (Est.)	0.25	Federal Aid	X	X	X	X	X	X	X	X	X	X	X	X
10	Prospect Street Watermain Replacements & Street Improvements - City of Marshall	2021	\$1,600,000 (Est.)	1.00	Locally Funded	X	X		X	X	X	X		X	X	X	
11	2022 Street Program, Contract 1 Maple Avenue - City of Owosso	2022	\$200,000 (Est.)	0.10	Locally Funded	X	X			X		X					
12	Fitzgerald Park Watermain Replacement Project - City of Grand Ledge	2021	\$178,800	0.10	Locally Funded	X			X	X	X	X		X	X	X	
13	FY22 Waverly Road Major Street Project - City of Lansing	2021	\$1,950,000 (Est)	1.00	Federal Aid	X	X	X		X	X	X		X	X	X	X
14	Green Street Reconstruction - City of Grand Ledge	2021	\$850,000	0.20	Federal Aid	X	X	X	X	X	X	X		X	X	X	X
15	Orchard Street Reconstruction - City of Grand Ledge	2021	\$1,000,000	0.20	Locally Funded	X	X	X	X	X	X	X		X	X	X	
16	2021 C Drive Extension - City of Grand Ledge	2021	\$120,000	0.05	Grant	X	X	X		X	X	X			X	X	
17	Forest Park Road Reconstruction Phase 3 - City of Norton Shores	2021	\$1,250,000 (Est)	0.50	Locally Funded	X	X	X	X	X	X	X		X	X	X	X
18	FY21 Sewer, Water Main and Road Reconstruction of Local Streets - City of Lansing	2021	\$3,500,000 (Est)	2.25	Locally Funded	X	X	X	X	X	X	X		X	X	X	X
19	FY21 Major Street Rehabilitation Project - City of Lansing	2021	\$1,900,000	0.52	Federal Aid	X	X	X	X	X	X	X		X	X	X	X
20	East Drive, North Drive, and Mansion Street Improvements - City of Marshall	2021	\$900,000	1.67	Federal Aid	X			X	X	X	X		X	X	X	X
21	Seminole Road Reconstruction Phase I - City of Norton Shores	2021	\$3,000,000	0.56	Federal Aid	X	X	X	X	X	X	X	X	X	X	X	X
22	Cambridge to Frances River Trail Extension Project - City of Lansing	2021	\$1,100,000	0.33	DNR / Local	X	X	X		X	X	X	X		X	X	X
23	Downtown Two-way Conversion - City of Lansing	2020	\$850,000	N/A	Locally Funded	X	X			X		X	X		X	X	X
24	Park Street Improvement Project - City of Muskegon Heights	2020	\$455,000	0.63	State and Local	X				X		X			X	X	
25	Jenne & Bridge Street Reconstruction Construction - City of Grand Ledge	2020	\$1,534,800	0.34	Federal Aid	X	X	X	X	X	X	X		X	X	X	
26	Watermain Design Verlinden, Cawood, Jenison - Lansing Board of Water and Light	2020	\$135,000	2.00	Locally Funded	X			X	X		X					
27	FY2020 City of Lansing (2019) - City of Lansing	2020	\$2,789,500	2.18	Federal Aid	X	X	X	X	X	City	X			X	X	X
28	SRF & DWRF Project No. 4 & No. 10 - City of Muskegon	2020	\$3,075,000	1.00	State Funded	X	X	X	X	X	X	X		X	X	X	
29	Delta River Drive Rehabilitation Project	2019	\$1,476,000	1.26	Locally Funded	X	X	X	X	X	X	X		X	X	X	X
30	Frاندora Hills Sanitary Sewer Rehabilitation	2019	\$1,500,000	1.35	Locally Funded	X	X	X	X	X	X	X		X	X	X	X
31	Washington Street Reconstruction - City of Owosso	2018	\$1,121,218	0.34	Federal Aid	X	X		X	X	X	X	X	X	X	X	
32	Howe Road – DMVA, Camp Grayling - Michigan Department of Military & Veterans' Affairs	2018	\$1,300,000	1.70	State Funded	X	X			X	X	X					
33	Green Street Reconstruction - City of Grand Ledge	2018	\$213,000	0.09	Locally Funded	X		X	X	X	X	X		X		X	
34	FY18 Major Street Rehabilitation Projects - City of Lansing	2018	\$2,283,000	1.19	Federal Aid	X	X	X	X	X	City	X	X	X	X	X	X
35	Stabler Street Rehabilitation - City of Lansing	2018	\$761,500	0.45	Locally Funded	X	X	X	X	X	X	X		X	X	X	X
36	FY17 Major Street Rehabilitation, Jolly Road - City of Lansing	2017	\$1,020,000	0.51	Federal Aid	X	X	X	X	X		X		X	X	X	
37	2016 City Street Reconstruction - City of Norton Shores	2016	\$1,345,000	0.90	Locally Funded	X	X	X	X	X	City	X		X	X	X	X
38	E. River St. / Franklin St. - City of Grand Ledge	2016	\$1,095,000	0.30	Locally Funded	X	X	X	X	X	X	X		X	X	X	X
39	East River St / Russell St Reconstruction – City of Grand Ledge	2014	\$544,000	0.22	Locally Funded	X	X	X	X	X		X	X	X	X	X	X
40	Holmes Road Reconstruction (MLK Blvd to Cedar St) – City of Lansing	2014	\$2,176,000	1.00	MDOT LAP	X	X	X	X	X	City	X	X	X	X	X	X
41	Mt. Garfield & Davis Rd, Rood Rd, Green St & Torrent St Reconstruction – City of Norton Shores	2014	\$987,000	0.65	Locally Funded	X	X		X	X	X	X	X	X	X	X	X
42	East Front Street Reconstruction - City of Grand Ledge	2013	\$656,000	0.48	Locally Funded	X	X	X	X	X	X	X	X	X	X	X	X
43	2011 Urban STP Project A (Turner St & Clippert St) – City of Lansing	2011	\$1,024,000	1.00	Federal Aid	X	X	X	X	X		X	X	X	X	X	X
44	Holmes Road Reconstruction & Resurfacing (Waverly Road to Pleasant Grove Road) – City of Lansing	2010	\$810,022	1.08	Federal Aid	X	X	X	X	X		X	X	X	X	X	X
45	Spring / West Lincoln Street Reconstruction – City of Grand Ledge	2010	\$425,200	0.18	Federal Aid	X	X	X	X	X	X	X	X	X	X	X	X
46	Howe Road Extension – DMVA, Camp Grayling	2010	\$640,000	0.90	N/A	X	X			X		X				X	
47	NIIP Street Rehabilitation Project B (7 Streets) – City of Lansing	2009	\$1,016,000	1.90	Locally Funded	X	X	X		X		X			X	X	X
48	Camp Grayling Paving Upgrade - Michigan Department of Military & Veterans' Affairs	2009	\$749,000	2.00	Stimulus Funds	X	X		X	X		X		X	X	X	
49	Michigan Avenue Resurfacing (Howard Ave to Friendship Ct) – City of Lansing	2009	\$449,000	0.40	ARRA	X				X		X			X	X	
50	Main Street Resurfacing (Bellevue St to North City Limit) – City of Leslie	2009	\$187,000	0.57	Locally Funded	X				X		X			X	X	
51	Dunckel Road Reconstruction (US-127 to Collins Road) – City of Lansing	2008	\$625,500	0.20	Federal Aid	X	X					X			X	X	
52	Collins Road Reconstruction (Jolly Rd to Dunckel Road) – City of Lansing	2008	\$505,630	0.50	Federal Aid	X	X	X		X		X	X		X	X	X
53	DeGroff Street Reconstruction (Edwards St to Lincoln St) – City of Grand Ledge	2008	\$683,600	0.35	Locally Funded	X	X	X	X	X	X	X		X	X	X	X
54	Edwards Street Reconstruction (Jenne St to South Clinton St) – City of Grand Ledge	2008	\$1,252,600	0.52	Federal Aid	X	X	X	X	X	X	X		X	X	X	X
55	West Road / Coleman Road Reconstruction – City of East Lansing	2007	\$926,759	0.53	Locally Funded	X	X	X	X	X		X		X	X	X	X
56	Lake Lansing Road Reconstruction (Lansing City Limit to Wood St) – Ingham County Dept of Roads	2007	\$1,656,000	0.45	Federal Aid	X	X		X	X	X	X	X		X	X	X
57	South Washington Avenue Reconstruction (Willoughby Rd to Edgewood Blvd) – City of Lansing	2006	\$950,000	0.50	Federal Aid	X	X	X	X	X		X	X	X	X	X	X

Eng. Corporate Quality Control Standards

The American Council of Engineers publishes “Quality Management Guidelines” which is the guidance material Eng., Inc. uses for our quality control standardization. Drawing from this material, our internal quality control process is as follows:

Eng. has two Principals, Ryan C. McEnhill, PE and Erik J. Morris, PE. On every project or for every client, Eng. assigns one Principal the task of QA/QC. Combined, the Principals have over a 50 years’ experience in municipal civil engineering projects and bring this experience to bear in our review process.

QA/QC starts with the fundamental “scope/schedule/budget” as outlined by the Project Manager. This document, usually a proposal, must be reviewed and signed by one of the Principals. When a project is awarded, Eng. must obtain written authorization from the client before a new project number can be assigned. Our billing system is based on project numbers; therefore, billings cannot occur without written authorization from the client.

Once we start a project, these preliminary steps are discussed at an internal project kickoff meeting:

- Assignment of personnel
- Scope/schedule/budget
- List of deliverables
- Outline of specifications, drawing sets, number of sheets, format, and sheet order

Project tracking is done in three ways:

1. Weekly ½ hour meetings to schedule work in 2-week blocks, followed up with a bar chart for every active project including:
 - CAD drafting
 - Survey
 - Design
 - QA/QC reviews
2. Monthly workload projection meetings with a 3-month spreadsheet. The spreadsheet totals budgets and personnel workloads in 2-week blocks allowing for a long-term review of staff workloads vs. budgets.
3. All monthly invoices are reviewed by the designated Principal in Charge, along with the budget worksheet with spent-to-date amounts.

Prior to delivery, a Principal reviews all final documents in detail. Similarly, at the end of every construction project, we conduct a walk-through with the client to verify that all punch list items are reconciled and that restoration is complete. By design, our size allows hands-on QA/QC by our Principals and is an on-going, daily process.



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

3/22/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must be endorsed. If **SUBROGATION IS WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Professional Concepts Insurance Agency, Inc. 1127 South Old US Highway 23 Brighton MI 48114-9861		CONTACT NAME: Certs@pciaonline.com PHONE (A/C, No, Ext): (800)969-4041 FAX (A/C, No): (800)969-4081 E-MAIL ADDRESS: Certs@pciaonline.com	
INSURED Eng., Inc. 4063 Grand Oak Dr, Ste A107 A109 Lansing MI 48911		INSURER(S) AFFORDING COVERAGE INSURER A: Hartford Casualty Insurance Co INSURER B: Sentinel Insurance Company INSURER C: Hartford Ins. Co. Midwest INSURER D: Founders Professional INSURER E: INSURER F:	
		NAIC # 29424 11000 37478	

COVERAGES**CERTIFICATE NUMBER: 22-23****REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	☒ COMMERCIAL GENERAL LIABILITY	X	Y	35SBAN04548	10/18/2022	10/18/2023	EACH OCCURRENCE \$ 1,000,000	
	☐ CLAIMS-MADE ☒ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000	
							MED EXP (Any one person) \$ 10,000	
							PERSONAL & ADV INJURY \$ 1,000,000	
	GEN'L AGGREGATE LIMIT APPLIES PER: ☒ POLICY ☐ PRO-JECT ☐ LOC OTHER:						GENERAL AGGREGATE \$ 2,000,000	
							PRODUCTS - COMP/OP AGG \$ 2,000,000	
							Employee Benefits \$ 1,000,000	
B	AUTOMOBILE LIABILITY	X	Y	35UE6JP3822	10/18/2022	10/18/2023	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000	
	☒ ANY AUTO							BODILY INJURY (Per person) \$
	☐ ALL OWNED AUTOS						☐ SCHEDULED AUTOS	BODILY INJURY (Per accident) \$
	☒ HIRED AUTOS						☒ NON-OWNED AUTOS	PROPERTY DAMAGE (Per accident) \$
							Uninsured motorist combined single \$ 1,000,000	
A	☒ UMBRELLA LIAB	☒ OCCUR		35SBAN04548	10/18/2022	10/18/2023	EACH OCCURRENCE \$ 3,000,000	
	☐ EXCESS LIAB	☐ CLAIMS-MADE	AGGREGATE \$ 3,000,000					
	DED ☒ RETENTION \$ 10,000							
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	Y/N	N/A	35WEGZL7359	10/18/2022	10/18/2023	☒ PER STATUTE ☐ OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)						E.L. EACH ACCIDENT \$ 1,000,000	
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE \$ 1,000,000	
							E.L. DISEASE - POLICY LIMIT \$ 1,000,000	
D	Professional Liability			FEI-ECC-10570-10	10/18/2022	10/18/2023	Per Claim \$ 2,000,000	
			Ann Aggregate \$ 2,000,000					

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

The CITY OF MUSKEGON, all elected and appointed officials, all employees and volunteers, all boards, commissions and/or authorities and board members, including employees and volunteers thereof are considered additional insured's with respects to general and auto liability coverage as long as required within a written contract. Waiver of subrogation in favor of certificate holder and additional insured's as long as required within a written contract. Coverage is considered primary and non-contributory on the general liability coverage. 30 day written notice provided to certificate holder and additional insured's for cancellation of coverages listed. 10 day notice for nonpayment of listed policies.

CERTIFICATE HOLDER**CANCELLATION**

todd.myers@shorelinecity.com

City of Muskegon
Attn: Mr. Todd Myers, PE,
Deputy Director of Public Works
1350 E. Keating
Muskegon, MI 49442

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Mike Cosgrove/SUNNY

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ACORD 25 (2014/01)

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INS025 (201401)



Mar 15, 2022

Eng.
16930 Robbins Road Suite 105
Grand Haven, Michigan 49417

Attention: Mr. Ryan McEnhill, P.E.

Regarding: Adelaide Pointe - Utilities & Roadway
Geotechnical Investigation
Muskegon, Muskegon County, Michigan

Dear Mr. McEnhill:

Soils & Structures, Inc. is pleased to present a quotation for geotechnical engineering services for the above referenced project.

Geotechnical Services

A total of 18 test borings are proposed to evaluate the underlying soil conditions for the design and construction of the proposed Adelaide Pointe - Utilities & Roadway project in Muskegon, Michigan. Tentatively, test borings depths of 10 feet are proposed for a total of 180 feet of drilling and testing. **We assume we will be able to access the soil borings.**

Soil borings will be backfilled with cuttings and/or bentonite chips. Soil borings performed in asphalt or concrete will be patched with appropriate material. Excess cuttings will be disposed on site. We assume no other restoration will be necessary.

Laboratory tests will be performed, as appropriate, on representative samples of the soil. The anticipated laboratory tests include classification, water content, and sieve tests.

The report will be prepared by a registered geotechnical engineer and will include the following information.

- A description of the tests performed
- Discussion of the surface and subsurface conditions including groundwater conditions
- Recommendations for site preparation
- Recommendations for asphalt and or concrete paving
- Recommendations for groundwater management and drainage
- Recommendations for fill
- Recommendations for quality control testing

Quotation:	Price	QTY	Subtotal
Mobilization of Drill Rig	\$1,150.00	1	\$1,150.00
Drilling & Sampling per ASTM D 1586 - Initial 180 feet of drilling	\$16.50	180	\$2,970.00
Drilling & Sampling per ASTM D 1586 - Added drilling per foot	\$16.50	0	\$0.00
Engineering Report	\$2,000.00	1	\$2,000.00
Field Engineering & Miss Dig	\$750.00	1	\$750.00
Laboratory Classification & Testing	\$1,125.00	1	\$1,125.00

Total \$7,995.00

Soils & Structures will contact Miss Dig utility locate service to identify any public utilities in the vicinity prior to mobilizing to the site. The owner is responsible for locating their private utilities. We request that you coordinate with the owner to locate any private utilities on site that are not part of the Miss Dig system. Soils & Structures will not be responsible for damage to unmarked private utilities.

If requested Soils & Structures will contract ground penetrating radar (GPR) service for an additional cost not included in the proposal, to locate private utilities.

We look forward to being of service to you. Please contact our office with any questions you may have.

Sincerely,
Soils & Structures, Inc.



Jon Erickson
Director of Field Operations

**CONFIRMATION OF AND AGREEMENT FOR THE PROVISION OF
LIMITED PROFESSIONAL SERVICES
(Notice of Furnishing)**

Design Professional Firm:	Soils & Structures, Inc. 6480 Grand Haven Road Muskegon, Michigan 49441	Client:	Eng. 16930 Robbins Road Suite 105 Grand Haven, Michigan 49417
Agreement Date:	Mar 15, 2022		
Project Name:	Adelaide Pointe - Utilities & Roadway	Project Location:	Muskegon, Michigan

Scope and Limit of Services:

Soil Borings and Engineering Report

Fee Arrangement: Work to be invoiced according to the proposal dated Mar 15, 2022

ESTIMATED COST OF TESTING = \$7,995.00

Special Conditions: None

Prepared By:

David W. Hohmeyer, P.E. / President
(printed name/title)

The **Terms and Conditions** form
is part of the Agreement.

Offered By:

Soils & Structures Inc.
(Professional Firm)

Jon Erickson/Director of Field Operations

Accepted By:**

Eng.
(Client/Company)

(printed name/title)



03 / 15 / 2022

(signature)

(date)

(signature)

(date)

****Due to time constraints imposed on Soils & Structures, Inc. to begin or complete portions of the work this agreement is assumed to be accepted without a signature based on verbal instructions to proceed with the work. The agreement is also assumed to have been accepted based acceptance of the work product and its use for design, financing, permits and /or construction. Terms and Conditions may be negotiated prior to submission or use of the work product.**

TERMS and CONDITIONS

Project: Adelaide Pointe - Utilities & Roadway

Agreement Date: Mar 15, 2022

The Firm shall perform the services outlined in this agreement for the stated fee arrangement.

Site Access:

Unless otherwise stated, the Firm will have access to the site for activities necessary for the performance of the services. The Firm will take precautions to minimize damage due to these activities, but have not included in the fee the cost of restoration of any resulting damage.

Dispute Resolution:

Any claims or disputes made during design, construction or post-construction between the Client and Firm shall be submitted to binding arbitration in accordance with the Construction Industry rules of the American Arbitration Association and any arbitration award so granted shall be specifically enforced by any Circuit Court in Michigan. Client and Firm agree to include a similar arbitration agreement with all contracts, subcontractors, sub-consultants, suppliers or fabricators, thereby providing for binding arbitration as the primary method for dispute resolution between all parties.

Billings & Payments:

Invoices for the Firm's services shall be submitted, at the Firm's option, either upon completion of such services or on a monthly basis. Invoices shall be payable within 15 days after client's receipt from its client's payment for the firm's services. If the invoice has not been paid within 15 days of when payment is due, the Firm may, without waiving any claim or right against the Client, and without liability whatsoever to the Client, terminate the performance of the service. Retainers shall be credited on the final invoice.

Late Payments:

Accounts unpaid 30 days after the invoice date may be subject to a monthly service charge of 1.5% (or the legal rate) on the then unpaid balance. In the event any portion or all of an account remains unpaid 90 days after billing, the Client shall pay all costs of collection, including reasonable attorney's fees.

Indemnification:

The Firm shall, to the fullest extent permitted by law, indemnify and hold harmless the Client, his or her officers, directors, employees, agents and sub-consultants from and against all damage, liability and cost, including reasonable attorney's fees and defense costs, arising out of the negligent performance by any of the parties previously named of the services under this agreement.

Certification, Guarantees and Warranties:

The Firm shall not be required to execute any document that would result in their certifying, guaranteeing or warranting the existence of conditions whose existence the Firm cannot ascertain.

Limitation of Liability:

In recognition of the relative risks, rewards and benefits of the project to both the Client and the Firm, the risks have been allocated such that the Client agrees that, to the fullest extent permitted by law, the Firm's total liability to the Client for any and all injuries, claims, losses, expenses, damages or claim expenses arising out of this agreement from any cause or causes, shall not exceed the lesser of 10 x Soils & Structure's fee or \$10,000. Such causes include, but are not limited to; the Firm's negligence, errors, omissions, strict liability, breach of contract or breach of warranty.

Termination of Services:

This agreement may be terminated by the Client or the Firm should the other fail to perform its obligations hereunder. In the event of termination, the Client shall pay the Firm for all services rendered to the date of termination, all reimbursable expenses, and reimbursable termination expenses.

Ownership of Documents:

All documents produced by the Firm under this agreement shall be the property of the Client.

Insurance:

During the performance of its services, the Firm shall maintain Commercial General Liability insurance, Automobile Liability Insurance, and Workers Compensation insurance with the limits set out of the certificate of Insurance attached hereto.

David W. Hohmeyer, P.E.

dhohmeyer@soilsandstructures.com

POSITION:	Principal Engineer, President
SPECIALIZATION:	Geotechnical Engineering Foundation & Pile Design Construction Inspection Project Administration and Management
QUALIFICATIONS:	Master of Science in Civil Engineering - 1984 University of Michigan, Ann Arbor Concentration in Geotechnical Engineering Bachelor of Science in Civil Engineering -1982 University of Michigan, Ann Arbor Concentration in Structural Engineering
REGISTRATION:	Professional Engineer: Michigan and Florida
EXPERIENCE:	1979 to Present – Soils & Structures, Inc.
MEMBERSHIPS:	American Society of Civil Engineers (ASCE) American Society of Testing and Materials (ASTM) American Concrete Institute (ACI) International Society of Soil Mechanics & Foundation Engineering (ISSMFE)
PROJECT EXPERIENCE:	County Bridge Design Geotechnical Investigation & Engineering Foundation Design Newaygo, Ionia, Mecosta, & Ottawa Counties, Michigan M-231 Bypass Geotechnical Investigation & Engineering Cofferdam Design Crockery Township, Michigan Grand River Crossing Geotechnical Investigation & Engineering Directional Drilling of Sewer Grand Haven, Michigan Ferrysberg Watermain Direction Drilling Geotechnical Investigation & Engineering Directional Drilling of Watermain for Water Expansion Ferrysburg, Michigan

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SOILS & STRUCTURES

Michael Partenio, P.E.

mpartenio@soilsandstructures.com • soilsandstructures.com

POSITION: Geotechnical Engineer

SPECIALIZATION: Geotechnical Engineering

QUALIFICATIONS: Bachelor of Science in Civil Engineering – 2015
University of Michigan, Ann Arbor

Master of Science in Civil Engineering - 2016
University of Michigan, Ann Arbor

REGISTRATION: Professional Engineer: Michigan

EXPERIENCE: 2016 – Somat Engineering, Inc.
2017 to 2018 – CTI and Associates, Inc.
2018 to Present – Soils & Structures, Inc.

**PROJECT
EXPERIENCE:**

Dollar General - Alto

Geotechnical Investigation & Engineering
New Pre Engineered Store
Alto, Michigan

East Lansing Public Schools – Pinecrest Elementary

Geotechnical Investigation & Engineering
Elementary School Addition & Remodel
East Lansing, Michigan

Shoreline Protection

Geotechnical Investigation & Engineering
Design Shoreline Protection for Multiple Residences
Long Beach, Indiana

Muskegon County Channel Crossing

Geotechnical Investigation & Engineering
Directional Drilling of Watermain for Water Expansion
Muskegon, Michigan

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SOILS & STRUCTURES

Stephanie N. Boileau, P.E.

sboileau@soilsandstructures.com

POSITION: Pavement Services Group Manager

SPECIALIZATION: Construction Administration/Project Management
Pavement Design and Asphalt Materials
Full Depth Reclamation/Soil Stabilization
Roadway Work Zone Design and Safety

QUALIFICATIONS: Bachelor of Science Civil Engineering – 2015
Wayne State University

CERTIFICATIONS: Michigan Professional Engineering License
ATSSA-Certified Traffic Control Supervisor
MDOT Superpave Mix Design Certification

EXPERIENCE: 2013 to 2018 – SME (formerly Soil and Materials Engineers)
2018 to Present – Soils & Structures, Inc.

PROJECT EXPERIENCE: US-131 Subgrade Stabilization Mix Design
Geotechnical Investigation, Stabilization Mix Design, & Work Zone Operations Engineer
Rockford, Michigan (MDOT Grand Region)

I-69 Subgrade Stabilization Mix Design
Geotechnical Investigation, Stabilization Mix Design, & Work Zone Operations Engineer
Flint, Michigan (MDOT Bay Region)

I-94 at Second/Cass Ave Advanced Bridge Replacement
Geotechnical Investigation & Work Zone Operations Engineer
Detroit, Michigan (MDOT JN 113125)

I-75 at Goddard Road – Goddard Bridge Replacement
Geotechnical Investigation & Work Zone Operations Engineer
Southgate, Michigan (MDOT JN 126818)

I-69 Corridor Pavement Rehabilitation
Geotechnical Investigation & Work Zone Operations Engineer
Fort Wayne, Indiana (INDOT DES16000230/231/232)

AFFILIATIONS: American Traffic Safety Services Association (ATSSA)
President - Michigan Chapter

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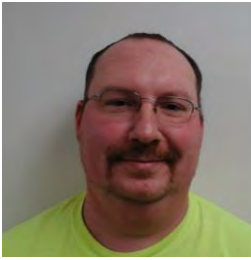
(800) 933-3959



SOILS & STRUCTURES

Dan Niemczak

dniemczak@soilsandstructures.com • soilsandstructures.com



POSITION: Engineering Technician

SPECIALIZATION: Construction Material Testing

QUALIFICATIONS: Muskegon Community College – General Studies

REGISTRATION: Michigan Concrete Association – Level I
ACI – Level I
M.D.O.T. Certified Density Technician
M.D.O.T. Certified Aggregate Technician
Troxler Certified-Nuclear Testing Equipment
Post Tensioning Institute – Level 1 Inspector
ACI - Concrete Strength Testing Technician

EXPERIENCE: 2015 to Present – Soils & Structures, Inc.

PROJECT EXPERIENCE: **CONCRETE & REINFORCING INSPECTION**

Fieldstone
Caledonia

GVSU Housing 2016
Allendale

The Grand Castle
Grandville

COMPACTION

Gentex – North Riley Campus
Zeeland

Muskegon School District Vet Barn
Muskegon

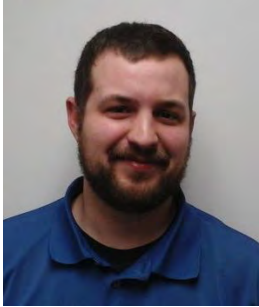
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SOILS & STRUCTURES

Austin Lawton

alawton@soilsandstructures.com • soilsandstructures.com



POSITION: Engineering Technician

SPECIALIZATION: Construction Material Testing

QUALIFICATIONS: Muskegon Community College – General Studies

REGISTRATION: Michigan Concrete Association-Level I
ACI-Level I
M.D.O.T. Certified Density Technician
Troxler Certified-Nuclear Testing Equipment

EXPERIENCE: 2015 to Present – Soils & Structures, Inc.

**PROJECT
EXPERIENCE:** **CONCRETE & REINFORCING INSPECTION**

Fellowship Reformed Church
Holland

Park Township Drain
Holland

COMPACTION

Villas of Holland
Holland

Compassionate Heart
Zeeland

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SOILS & STRUCTURES

Matthew McClendon

mmcclendon@soilsandstructures.com

POSITION: Bituminous QA/QC Lab Technician

SPECIALIZATION: Pavement, HMA, Aggregate, Materials Laboratory Testing

QUALIFICATIONS: WCCT – Alpena Community College – 2006
Associates in Applied Sciences

REGISTRATION: Michigan Certified HMA Hot Mix Sampling
Michigan HMA QC/QA Technician
Michigan Certified Density Technician 1
Michigan Certified Aggregate Level Two
ACI Concrete Level 1
Cetco Certified Waterproofing Inspector
American Red Cross First Aid Certified

EXPERIENCE: 2004 to 2006 – North America
2006 to 2008 – Finrock Precast
2008 to 2013 – Soils Materials Engineers
2013 to 2015 – Superior Asphalt Inc.
2015 to 2019 – Soils Materials Engineers
2019 to Present – Soils & Structures, Inc.

PROJECT EXPERIENCE: **LABORATORY TESTING**

City of Franklin 2015 Pavement Program
Spring Lake, Michigan

James Street (70000-200542)
Holland, Michigan

120th Avenue (70141-129682)
Holland, Michigan

Exchange Street from Jackson Street to Elm Street (70000-130780)
Spring Lake, Michigan

Fuller Avenue Resurfacing Project
Grand Rapids, Michigan

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(800) 933-3959



SOILS & STRUCTURES

Sarah Synnestvedt, E.I.T.

ssynnestvedt@soilsandstructures.com • soilsandstructures.com

POSITION: Laboratory Manager

SPECIALIZATION: Construction Material Testing
Vibration Monitoring / Video Inspection

QUALIFICATIONS: Bachelor of Science, Civil Engineering - 2015
Western Michigan University

REGISTRATION: Michigan Concrete Association Field Testing Technician Level I
ACI Field Testing Technician Grade I
ACI Aggregate Testing Technician Level I
ACI Concrete Strength Testing Technician
ACI Concrete Laboratory Testing Technician Level I
Michigan Certified Aggregate Technician Level Two
NRMCA Plant Certification Assistant

EXPERIENCE: 2016 to Present – Soils & Structures, Inc.
2013, 2014, & 2015 – M.D.O.T.

PROJECT EXPERIENCE:

LABORATORY TESTING

M-11 (Ironwood Dr/Remembrance Ave)
Ottawa County

West Ottawa Public Schools
Holland

Gerald R. Ford Airport
Grand Rapids

DEEP FOUNDATIONS INSPECTION

Marquette WWTP Energy Savings Project
Marquette

VIBRATION MONITORING / VIDEO INSPECTION

I-96 and I-196 Interchange (45790)
Grand Rapids

16th Street (130714)
Holland

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SOILS & STRUCTURES

Fee Schedule – January 2022

PERSONNEL CHARGES

Principal/Registered Engineer	\$ 180.00/hour
Structural Engineer SE	\$ 160.00/hour
Senior Geotechnical Engineer	\$ 145.00/hour
Senior Structural Engineer	\$ 145.00/hour
Geotechnical/Structural Engineer Level 2	\$ 125.00/hour
Geotechnical/Structural Engineer Level 1	\$ 115.00/hour
Structural Steel Detailing Checker	\$ 82.00/hour
Structural Steel Detailer	\$ 72.00/hour
Infrared Thermographer	\$ 110.00/hour
CAD Technician	\$ 68.00/hour
Field/Laboratory Supervisor	\$ 90.00/hour
Engineering Technician	\$ 75.00/hour
Overtime	\$ 90.00/hour
Administrative Services	\$ 55.00/hour

Minimum charge for field assignment is two hours per trip. Chargeable time includes travel, time on site, and required office time. Review of field and laboratory reports is mandatory practice. Review time will be charged at the appropriate level required.

INSPECTION RATES

AWS/CWI/ICC Steel Inspector	\$ 92.00/hour
Pile Inspector	\$ 92.00/hour
NDT Inspector	\$ 92.00/hour
Masonry Inspector (ICC Certified)	\$ 92.00/hour
Plant Inspector	\$ 92.00/hour
EIFS Inspector	\$ 92.00/hour

OTHER CHARGES

Mileage	\$ 0.72/mile
Sample pickup	\$ 75.00/hour
Shipping, special equipment rental, materials, and subcontract services	Quoted
Per diem – Lodging & Meals (overnight assignments)	\$ 150.00/day
Bagged Materials (asphalt, bentonite, sand, concrete)	\$ 25.00/bag
NRMCA Concrete Plant Certification	\$ 750.00/plant (plus NRMCA Fees)

EQUIPMENT CHARGES

Core Machine	\$ 75.00/day
Bit Depreciation	\$ 3.00/inch
Generator	\$ 40.00/day
Windsor Probe	\$ 75.00/day
Windsor Probe Pin	\$ 2500/each
Blast Mate Seismograph	\$ 150.00/day
Concrete Maturity Probe	\$ 150.00/probe
Elcometer Adhesion Meter	\$ 25.00/dolly
Vapor Emission Test Kit	\$ 75.00/each
Relative Humidity Probe	\$ 75.00/probe
Crack Monitor Kit	\$ 50.00/each
Arrow Board	\$ 75.00/day
Pile Integrity Testing (PIT)	\$ 300.00/day
Calibrated Jack & Pump (30, 60, 100 Ton)	\$ 100.00/day

LABORATORY RATES

AGGREGATES

Sieve Analysis (MDOT), C 136	\$ 130.00/test
Unit Weight, C 29	\$ 150.00/test
Specific Gravity & Absorption, C 127/128	\$ 250.00/test
LA Abrasion, C 131/535	\$ 400.00/test
Organic Impurities, C 40	\$ 125.00/test
Clay Lumps & Friable (Soft Particles), C 142	\$ 200.00/test
Lightweight Particles (Coal & Lignite or Chert), C 123	\$ 200.00/test
Soundness, C 88	\$ 1,000.00/test
Insoluble Residue, D 3042	\$ 300.00/test
Concrete Aggregate Testing, C 33	\$ 1,800.00/test
Flat & Elongated Particles, D 4791	\$ 125.00/test
Sand Equivalent Value, D 2419	\$ 125.00/test
Soil Resistivity, G 57/G 187	\$ 125.00/test
MDOT Backfill Select (LOI, Resistivity, pH, Sulfates, Chlorides, PI, & Direct Shear)	\$1,200.00/test
Fractured Particles (One Face or Two Face), D 5821	\$ 125.00/test

CONCRETE

Concrete Compression, C 39	\$ 17.00/cylinder
Contractor Made Concrete Compression (includes report)	\$ 27.00/cylinder
Flexural Strength of Concrete, C 78	\$ 50.00/beam
Core Compression (includes saw cut), C 42	\$ 90.00/core
Shotcrete Cubes (includes saw cut), C 1140	\$ 50.00/cube
ASR Testing, C 1260, C 1567 [accelerated test]	\$ 850.00/test
C 1293 (12 month test)	\$ 950.00/test
Shrinkage, C 157	\$ 800.00/test
MDOT Admixture Testing (Local Cement)	Quoted
Ff/FI Floor Profiling	\$ 800.00/test
Air-Void System – Hardened Concrete, C 457	\$ 550.00/test
Water-Soluble Chloride Ion, C 1218	\$ 150.00/test

MASONRY

Mortar Compression, C 109	\$ 17.00/cylinder/cube
Grout Compression, C 1019	\$ 17.00/cylinder/prism
Complete Masonry Unit Testing, C 140	\$ 450.00/set of 6
Block Compression, C 140	\$ 260.00/set of 3
Block Prism Compression, C 140	\$ 300.00/prism
Complete Clay Brick Testing, C 67	\$ 500.00/set
Clay Brick Compression, C 67	\$ 260.00/set of 5
Efflorescence, C 67	\$ 250.00/set of 10

GEOTECHNICAL

Granular Proctor, D 1557, D 698	\$ 225.00/test
Cohesive Proctor, D 1557, D 698	\$ 250.00/test
Michigan One-Point Cone	\$ 75.00/test
Michigan One-Point T-99, MTM 404	\$ 75.00/test
Michigan One-Point T-180	\$ 75.00/test
Atterberg Limits, D 4318	\$ 200.00/test
Hydrometer Analysis, D 422	\$ 225.00/test
Organic Content, D 2974	\$ 100.00/test
California Bearing Ratio (Includes Proctor), D 1883	\$ 475.00/test
Soil / Water pH, D 4972	\$ 50.00/test
Natural Moisture, D 2216	\$ 25.00/test
Unconfined Compression, D 2166	\$ 50.00/test
Permeability-Constant Head, D 2434	\$ 200.00/test
Permeability-Flex Wall, D 5084	\$ 350.00/test
Direct Shear (Includes Proctor)	\$ 950.00/test
Porosity	\$ 100.00/test
Particle Size Analysis (Visual)	\$ 50.00/test

For laboratory testing where a rate is not provided, fees will be based on an hourly rate of \$90.00/hour.

LABORATORY RATES

ASPHALT

Asphalt Extraction	\$ 425.00/test
Asphalt Extraction (Hold – 2 Year Storage)	\$ 25.00/sample
Theoretical Maximum Density (Rice), D 2041	\$ 190.00/test
Bulk Specific Density, D 2726	\$ 50.00/plug
Core Density	\$ 50.00/core
Uncompacted Void Content, C 1252	\$ 150.00/test
Gyratory Bulk Density, D 6925	\$ 150.00/test
MDOT Asphalt Mix Design	\$ 7,500.00/each

SUPPLIES

Cylinder Molds (6"x12" or 4"x8")	\$ 70.00/case
Beam Mold – Plastic (6"x6"x21")	\$ 140.00/each
Pressure Meter Reconditioning (Includes Gaskets & Calibration)	\$ 200.00/each (plus parts)
Thermometer (Concrete)	\$ 25.00/each
Thermometer (Minimum/Maximum)	\$ 45.00/each
Hand Penetrometer	\$ 150.00/each
Slump Rod	\$ 25.00/each
Slump Cone	\$ 75.00/each
Concrete Scoop	\$ 25.00/each
Concrete Air Meter Calibration Canister (Plastic)	\$ 75.00/each
Crack Monitor Kit	\$ 50.00/each
Nuclear Density Gauge Car Charger	\$ 25.00/each

CALIBRATIONS

Pressure Meter Calibration	\$ 75.00/each (plus parts)
Sieve Calibration	\$ 150.00/set
Scale Calibration	\$ 100.00/each
Slump Cone Calibration	\$ 25.00/each
Michigan One Point Cone Calibration	\$ 75.00/each
Thermometer Calibration	\$ 25.00/each
Dial Indicator Calibration	\$ 50.00/each
Jack Calibration (0 to 250 Ton)	\$ 425.00/each
Jack Calibration (250 Ton to 500 Ton)	\$ 750.00/each

For laboratory testing where a rate is not provided, fees will be based on an hourly rate of \$90.00/hour.

STRUCTURAL STEEL INSPECTION

PERSONNEL CHARGES

AWS/CWI/ICC Steel Inspector	\$ 92.00/hour
Overtime	\$100.00/hour
NDT Inspector	\$ 92.00/hour
EIFS Inspector	\$ 92.00/hour
Field/Laboratory Supervisor	\$ 90.00/hour
Administrative Services	\$ 55.00/hour

Minimum charge for field assignment is two hours per trip. Chargeable time includes travel, time on site, and required office time. Review of field reports is mandatory practice. Review time will be charged at the appropriate level required.

CERTIFICATION of WELDER(S)

Welder Certifications	Quoted
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EQUIPMENT / PROCEDURES CHARGES

3/8" plate with bevel and backing plate	\$ 50.00/set
1" plate with bevel and backing plate	\$ 75.00/set

Welding Procedures & Related Testing	\$ 92.00/hour
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UT Flaw Detector	\$ 125.00/day
Skidmore Bolt Tension Calibrator	\$ 75.00/day
Torque Wrench Calibrator	\$ 75.00/day
Liquid Penetrant	Quoted
Magnetic Particle	Quoted

FIRE PROOFING INSPECTION

PERSONNEL CHARGES

Fire Proofing Inspector (ICC Certified)	\$ 92.00/hour
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OTHER CHARGES

Adhesion / Cohesion Testing	\$ 50.00/test
Density Testing	\$ 60.00/test

GEOTECHNICAL DRILLING SERVICES**PERSONNEL CHARGES**

Principal/Registered Engineer	\$ 180.00/hour
Senior Geotechnical Engineer	\$ 145.00/hour
Geotechnical Engineer Level 2	\$ 125.00/hour
Geotechnical Engineer Level 1	\$ 115.00/hour
Administrative Services	\$ 55.00/hour

MOBILIZATION

Within 60 Mile Radius	\$ 950.00
Outside 60 Mile Radius	Quoted

DRILLING CHARGES

Drilling with SPT Sampling (1 to 50 foot)	\$ 17.50/foot
Drilling with SPT Sampling (50 to 75 foot)	\$ 22.00/foot
Drilling with SPT Sampling (75 to 100 foot)	\$ 28.00/foot
Drilling with SPT Sampling (over 100 foot)	Quoted
Drilling through Concrete	\$100.00/foot
Rock Coring	\$ 75.00/foot
CPT (Dutch Cone Penetration Testing)	\$ 16.50/foot
Well / Piezometer Boring	Quoted

EQUIPMENT / SUPPLY CHARGES

Bagged Materials (asphalt, bentonite, sand, concrete)	\$ 25.00/bag
Flush Joint Riser (5 foot section)	\$ 25.00/each
Flush Joint Screen (5 foot section)	\$ 30.00/each
Flush Joint Point	\$ 15.00/each
Knock Out Plug	\$ 15.00/each
Expandable Locking Plug	\$ 25.00/each
Flush Mount Protective Cover (8"x12")	\$ 100.00/each
Pro Cap Locking Protective Cover (4"x4"x5')	\$ 200.00/each
Steam Cleaner	\$ 125.00/day

OTHER CHARGES

Geotechnical Report	Quoted
Pile Design & Layout	Quoted
Pile Load Testing	Quoted
Shipping, special equipment rental, materials, and subcontract services	Quoted

OVERNIGHT ASSIGNMENTS

Per diem for two man crew – Lodging & Meals	\$ 300.00/day
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**16930 Robbins Road Suite 105
Grand Haven, MI 49417
616.743.7070**

WATCH MUSKEGON

Agenda Item Review Form Muskegon City Commission

Commission Meeting Date: December 13, 2022	Title: Olthoff Dr Extension Contract Award
Submitted By: Dan VanderHeide	Department: Public Works
Brief Summary: Staff is requesting approval of a contract with Terra Contractors, Inc. in the amount of \$1,043,104.60 for the extension of Olthoff Drive, with funds from a TEDF Category A grant from MDOT and remaining funds from an MEDC grant related to the demolition of the prison.	
Detailed Summary & Background: On March 14, 2023, Commission approved a grant agreement with MDOT that awarded up to \$630,000 to the City for a Transportation Economic Development Fund (Category A) Grant. The grant process has been completed, and the construction contract can now be awarded. The grant will cover 60% of the construction cost, leaving \$413,104.60 to be paid out of the MEDC grant the City received to redevelop the industrial park and demolish the former prison. The two grants combined will fully cover the cost of the project. The City received bids on December 13, 2022. Terra Contractors is recommended by staff in accordance with an "intent to award" letter that Commission received last month, for reasons outlined in that letter (which is attached). The bid tab is also attached.	
Goal/Focus Area/Action Item Addressed: Key Focus Area: Sustainability in financial practices and infrastructure.	
Amount Requested: \$1,043,104.60 (Grant)	Amount Budgeted: \$1,043,104.60 (Grant)
Fund(s) or Account(s): N/A (Via 202 and 482)	Fund(s) or Account(s): N/A (Via 202 and 482)
Recommended Motion: Authorize staff to enter into a contract with Terra Contractors in the amount of \$1,043,104.60 for the extension of Olthoff Drive on the former prison site.	
Approvals: Immediate Division Head ☒ Information Technology ☐ Other Division Heads ☐ Communication ☒	Guest(s) Invited / Presenting Yes ☐ No ☒
For City Clerk Use Only: Commission Action:	

Affirmative Action
(231)724-6703
FAX (231)722-1214

Assessor/
Equalization Co.
(231)724-6386
FAX (231)724-1129

Cemetery/Forestry
(231)724-6783
FAX (231)724-4188

City Manager
(231)724-6724
FAX (231)722-1214

Clerk
(231)724-6705
FAX (231)724-4178

Comm. & Neigh.
Services
(231)724-6717
FAX (231)726-2501

Computer Info.
Technology
(231)724-4126
FAX (231)722-4301

Engineering
(231)724-6707
FAX (231)727-6904

Finance
(231)724-6713
FAX (231)726-2325

Fire Department
(231)724-6795
FAX (231)724-6985

Human Resources
Co. (Civil Service)
(231)724-6442
FAX (231)724-6840

Income Tax
(231)724-6770
FAX (231)724-6768

Mayor's Office
(231)724-6701
FAX (231)722-1214

Planning/Zoning
(231)724-6702
FAX (231)724-6790

Police Department
(231)724-6750
FAX (231)722-5140

Public Works
(231)724-4100
FAX (231)722-4188

SafeBuilt
(Inspections)
(231)724-6715
FAX (231)728-4371

Treasurer
(231)724-6720
FAX (231)724-6768

Water Billing
(231)724-6718
FAX (231)724-6768

Water Filtration
(231)724-4106
FAX (231)755-5290

MUSKEGON



West Michigan's Shoreline City
www.shorelinecity.com

March 23, 2023

Mr. Scott Drier
Terra Contractors
856 Pulaski Ave
Muskegon, MI 49441

RE: Olthoff Drive Industrial Park Roadway Expansion Project

Dear Scott:

The City has received your competitive bid in the amount of \$1,043,104.60 for the extension of sanitary sewer, water main and roadway in the City's industrial park, going southeasterly from the east end of Olthoff Drive.

While your bid was not the lowest that the City received, staff will be recommending Terra as contractor for this project when it goes to the City Commission. (The Commission has final say in awarding all contracts.) Staff has come to this conclusion based on several factors including a local preference clause in the City's purchasing policy that reduces your effective bid by 2% based on your location within the City limits of Muskegon, and the fact that you have secured the contract for the adjacent site work at the NBR Laboratories facility. As a result, staff is confident that an award to Terra Contractors is in the best interest of the City. Furthermore, City staff believes the additional cost of \$11,290.51 (an amount just over 1% of the contract price) could result in a net *savings* by speeding construction, reducing staff time, reducing errors and omissions, and minimizing third-party oversight costs.

Due to the timelines associated with the MDOT TEDF grant the City is using to pay for a portion of the contract, a timely award of this contract has not been possible. City staff greatly appreciates your patience and will move the recommend award of the Olthoff Drive Industrial Park Roadway Expansion Project to Terra Contractors to the City Commission as soon as possible.

Respectfully,


Jonathan Seyferth
City Manager

cc: The City of Muskegon City Commission
Dan VanderHeide, Director of Public Works
Randy Wilcox, HRC Consulting Engineers

ITEM	DESCRIPTION	QTY	UNIT	Dan's Excavating (Grant)		Terra Contractors (Muskegon)		Wadel Stabilization (Hart)		McCormick Sand (Twin Lake)	
				UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT
1	Mobilization, Max	1.00	LSUM	\$ 91,904.00	\$ 91,904.00	\$ 45,000.00	\$ 45,000.00	\$ 65,500.00	\$ 65,500.00	\$ 123,000.00	\$ 123,000.00
2	Clearing	0.50	Acre	\$ 2,400.00	\$ 1,200.00	\$ 19,500.00	\$ 9,750.00	\$ 10,000.00	\$ 5,000.00	\$ 13,000.00	\$ 6,500.00
3	Sewer, Rem, Less than 24 inch	6.00	Ft	\$ 40.00	\$ 240.00	\$ 50.00	\$ 300.00	\$ 50.00	\$ 300.00	\$ 25.00	\$ 150.00
4	Curb and Gutter, Rem	630.00	Ft	\$ 5.00	\$ 3,150.00	\$ 8.00	\$ 5,040.00	\$ 5.40	\$ 3,402.00	\$ 4.00	\$ 2,520.00
5	Fence, Rem	30.00	Ft	\$ 20.00	\$ 600.00	\$ 8.00	\$ 240.00	\$ 28.40	\$ 852.00	\$ 20.00	\$ 600.00
6	Embankment, CIP	430.00	Cyd	\$ 6.00	\$ 2,580.00	\$ 4.00	\$ 1,720.00	\$ 5.50	\$ 2,365.00	\$ 11.00	\$ 4,730.00
7	Excavation, Earth	5489.00	Cyd	\$ 16.00	\$ 87,824.00	\$ 4.00	\$ 21,956.00	\$ 11.00	\$ 60,379.00	\$ 11.00	\$ 60,379.00
8	Machine Grading	33.00	Sta	\$ 900.00	\$ 29,700.00	\$ 1,650.00	\$ 54,450.00	\$ 1,950.00	\$ 64,350.00	\$ 1,500.00	\$ 49,500.00
9	Erosion Control, Silt Fence	1421.00	Ft	\$ 3.00	\$ 4,263.00	\$ 2.00	\$ 2,842.00	\$ 3.00	\$ 4,263.00	\$ 2.00	\$ 2,842.00
10	Aggregate Base, 6 inch	8709.00	Syd	\$ 3.00	\$ 26,127.00	\$ 15.00	\$ 130,635.00	\$ 12.00	\$ 104,508.00	\$ 10.00	\$ 87,090.00
11	Sewer, CI IV, 12 inch, Tr Det A	365.00	Ft	\$ 47.00	\$ 17,155.00	\$ 45.00	\$ 16,425.00	\$ 52.00	\$ 18,980.00	\$ 50.00	\$ 18,250.00
12	Sewer, CI IV, 12 inch, Tr Det B	88.00	Ft	\$ 47.00	\$ 4,136.00	\$ 45.00	\$ 3,960.00	\$ 52.00	\$ 4,576.00	\$ 50.00	\$ 4,400.00
13	Video Taping Sewer and Culv Pipe	1214.00	Ft	\$ 3.00	\$ 3,642.00	\$ 2.25	\$ 2,731.50	\$ 2.00	\$ 2,428.00	\$ 2.00	\$ 2,428.00
14	Catch Basin, Removal and Relocation	4.00	Ea	\$ 1,250.00	\$ 5,000.00	\$ 3,800.00	\$ 15,200.00	\$ 2,050.00	\$ 8,200.00	\$ 2,000.00	\$ 8,000.00
15	Catch Basin, Special, 48 inch dia	4.00	Ea	\$ 2,000.00	\$ 8,000.00	\$ 2,100.00	\$ 8,400.00	\$ 3,695.00	\$ 14,780.00	\$ 2,500.00	\$ 10,000.00
16	Dr Structure Cover, Adj, Case 1, Modified	1.00	Ea	\$ 800.00	\$ 800.00	\$ 500.00	\$ 500.00	\$ 627.00	\$ 627.00	\$ 1,000.00	\$ 1,000.00
17	Dr Structure Cover, Type K, Modified	16.00	Ea	\$ 1,100.00	\$ 17,600.00	\$ 500.00	\$ 8,000.00	\$ 926.00	\$ 14,816.00	\$ 1,400.00	\$ 22,400.00
18	Leaching Basin, 72 inch dia	10.00	Ea	\$ 8,000.00	\$ 80,000.00	\$ 9,400.00	\$ 94,000.00	\$ 9,945.00	\$ 99,450.00	\$ 16,000.00	\$ 160,000.00
19	Sanitary Manhole Cover	3.00	Ea	\$ 800.00	\$ 2,400.00	\$ 750.00	\$ 2,250.00	\$ 652.00	\$ 1,956.00	\$ 1,300.00	\$ 3,900.00
20	Underdrain, Subgrade, Open-Graded, 12 inch	876.00	Ft	\$ 43.00	\$ 37,668.00	\$ 63.00	\$ 55,188.00	\$ 40.00	\$ 35,040.00	\$ 60.00	\$ 52,560.00
21	HMA Surface, Rem	1824.00	Syd	\$ 3.00	\$ 5,472.00	\$ 3.00	\$ 5,472.00	\$ 1.00	\$ 1,824.00	\$ 4.00	\$ 7,296.00
22	HMA, 4EML	1763.00	Ton	\$ 93.00	\$ 163,959.00	\$ 99.70	\$ 175,771.10	\$ 94.00	\$ 165,722.00	\$ 93.00	\$ 163,959.00
23	Curb and Gutter, Conc, Det F4	3346.00	Ft	\$ 16.00	\$ 53,536.00	\$ 21.00	\$ 70,266.00	\$ 16.00	\$ 53,536.00	\$ 17.00	\$ 56,882.00
24	Post, Steel, 3 lb	120.00	Ft	\$ 8.50	\$ 1,020.00	\$ 10.00	\$ 1,200.00	\$ 8.50	\$ 1,020.00	\$ 8.50	\$ 1,020.00
25	Sign, Type III, Erect, Salv	2.00	Ea	\$ 75.00	\$ 150.00	\$ 85.00	\$ 170.00	\$ 75.00	\$ 150.00	\$ 75.00	\$ 150.00
26	Sign, Type III, Rem	2.00	Ea	\$ 50.00	\$ 100.00	\$ 60.00	\$ 120.00	\$ 50.00	\$ 100.00	\$ 50.00	\$ 100.00
27	Sign, Type IIIB	43.00	Sft	\$ 19.00	\$ 817.00	\$ 23.00	\$ 989.00	\$ 19.00	\$ 817.00	\$ 19.00	\$ 817.00
28	Reflective Panel for Permanent Sign Support, 6 foot	4.00	Ea	\$ 50.00	\$ 200.00	\$ 60.00	\$ 240.00	\$ 50.00	\$ 200.00	\$ 50.00	\$ 200.00
29	Pavt Mrkg, Waterborne, 4 inch, Yellow	2954.00	Ft	\$ 1.00	\$ 2,954.00	\$ 1.00	\$ 2,954.00	\$ 2.00	\$ 5,908.00	\$ 0.50	\$ 1,477.00
SUBTOTAL FOR PARTICIPATING ITEMS (Items 1-29)				\$ 652,197.00		\$ 735,769.60		\$ 741,049.00		\$ 852,150.00	
30	Gate Valve and Box, 8 inch	6.00	Ea	\$ 2,100.00	\$ 12,600.00	\$ 1,600.00	\$ 9,600.00	\$ 2,865.00	\$ 17,190.00	\$ 3,500.00	\$ 21,000.00
31	Gate Valve and Box, 12 inch	1.00	Ea	\$ 3,700.00	\$ 3,700.00	\$ 4,500.00	\$ 4,500.00	\$ 4,630.00	\$ 4,630.00	\$ 6,500.00	\$ 6,500.00
32	Water Main, 8 inch, Cut and Plug	6.00	Ea	\$ 850.00	\$ 5,100.00	\$ 1,100.00	\$ 6,600.00	\$ 743.00	\$ 4,458.00	\$ 750.00	\$ 4,500.00
33	Live Tap, 12 inch by 16 inch	1.00	Ea	\$ 10,000.00	\$ 10,000.00	\$ 11,000.00	\$ 11,000.00	\$ 12,810.00	\$ 12,810.00	\$ 9,500.00	\$ 9,500.00
34	Gate Box, Adj, Case 1	1.00	Ea	\$ 850.00	\$ 850.00	\$ 750.00	\$ 750.00	\$ 645.00	\$ 645.00	\$ 800.00	\$ 800.00
35	Water Main, DI, 12 inch, Tr Det G	1355.00	Ft	\$ 115.00	\$ 155,825.00	\$ 70.00	\$ 94,850.00	\$ 107.00	\$ 144,985.00	\$ 106.00	\$ 143,630.00
36	Water Main, DI, 8 inch, Tr Det G	422.00	Ft	\$ 90.00	\$ 37,980.00	\$ 60.00	\$ 25,320.00	\$ 85.00	\$ 35,870.00	\$ 85.00	\$ 35,870.00
37	Bend, 12 inch, 22.5 Degree, DI MJ	2.00	Ea	\$ 1,000.00	\$ 2,000.00	\$ 1,000.00	\$ 2,000.00	\$ 1,470.00	\$ 2,940.00	\$ 1,100.00	\$ 2,200.00
38	Bend, 12 inch, 45 Degree, DI MJ	22.00	Ea	\$ 1,400.00	\$ 30,800.00	\$ 1,400.00	\$ 30,800.00	\$ 1,550.00	\$ 34,100.00	\$ 1,200.00	\$ 26,400.00
39	Hydrant, 6 inch, Standard	6.00	Ea	\$ 4,500.00	\$ 27,000.00	\$ 1,500.00	\$ 9,000.00	\$ 7,815.00	\$ 46,890.00	\$ 8,000.00	\$ 48,000.00
40	Hydrant, Rem, Modified	1.00	Ea	\$ 1,000.00	\$ 1,000.00	\$ 1,900.00	\$ 1,900.00	\$ 1,000.00	\$ 1,000.00	\$ 600.00	\$ 600.00
41	Reducer, 12 inch X 8 inch, DI MJ	1.00	Ea	\$ 900.00	\$ 900.00	\$ 800.00	\$ 800.00	\$ 1,315.00	\$ 1,315.00	\$ 1,000.00	\$ 1,000.00
42	Tee, 12 inch X 6 inch, DI MJ	6.00	Ea	\$ 1,300.00	\$ 7,800.00	\$ 1,600.00	\$ 9,600.00	\$ 1,705.00	\$ 10,230.00	\$ 1,500.00	\$ 9,000.00
43	Tee, 12 inch X 8 inch, DI MJ	5.00	Ea	\$ 1,400.00	\$ 7,000.00	\$ 1,650.00	\$ 8,250.00	\$ 1,765.00	\$ 8,825.00	\$ 1,600.00	\$ 8,000.00
44	Tee, 16 inch X 12 inch, DI MJ	1.00	Ea	\$ 500.00	\$ 500.00	\$ 2,800.00	\$ 2,800.00	\$ 2,765.00	\$ 2,765.00	\$ 1,800.00	\$ 1,800.00
45	Sanitary Sewer, PVC, 8 inch, Tr Det B2	127.00	Ft	\$ 50.00	\$ 6,350.00	\$ 45.00	\$ 5,715.00	\$ 63.00	\$ 8,001.00	\$ 50.00	\$ 6,350.00
46	Sanitary Sewer, PVC, 12 inch, Tr Det B2	650.00	Ft	\$ 64.00	\$ 41,600.00	\$ 110.00	\$ 71,500.00	\$ 82.00	\$ 53,300.00	\$ 60.00	\$ 39,000.00
47	Sanitary Structure, 48 inch dia	3.00	Ea	\$ 2,300.00	\$ 6,900.00	\$ 3,800.00	\$ 11,400.00	\$ 3,305.00	\$ 9,915.00	\$ 4,200.00	\$ 12,600.00
48	Sanitary Structure Cover, Adj, Case 2	1.00	Ea	\$ 850.00	\$ 850.00	\$ 950.00	\$ 950.00	\$ 484.00	\$ 484.00	\$ 1,100.00	\$ 1,100.00
SUBTOTAL FOR NON-PARTICIPATING ITEMS (Items 30-48)				\$ 358,755.00		\$ 307,335.00		\$ 400,353.00		\$ 377,850.00	
TOTAL CONTRACT (UNFACTORED)				\$ 1,010,952.00		\$ 1,043,104.60		\$ 1,141,402.00		\$ 1,230,000.00	
Local Preference Ordinance				\$ -		\$ (20,862.09)		\$ -		\$ -	
TOTAL CONTRACT				\$ 1,010,952.00		\$ 1,022,242.51		\$ 1,141,402.00		\$ 1,230,000.00	

WATCH MUSKEGON

Agenda Item Review Form

Muskegon City Commission

Commission Meeting Date: April 25, 2023	Title: Lakeshore & Southern Stop Sign Removal	
Submitted By: Dan VanderHeide	Department: DPW	
Brief Summary: Staff requests approval of Traffic Control Order #78-(2023)		
Detailed Summary & Background: The Michigan Manual of Uniform Traffic Control Devices (MMUTCD), the document that provides guidance for installation of traffic controls, includes provisions for stop-controlled intersections such as: • The combined vehicular, bicycle, and pedestrian volume entering the intersection from all approaches averages more than 2,000 units per day, and • An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection. In the spring of 2022, a stop sign was installed at Lakeshore and Southern in accordance with the above criteria. In consultation with the Nims Neighborhood Association, DPW and the neighborhood request the stop sign be removed. It has not contributed to safety, and in fact has added to noise pollution in the area as cars speed away from the stop sign. Stop signs installed at Michigan and Franklin and at Western and Franklin around the same time have yielded better results, are not proposed for removal, and will continue to be monitored.		
Goal/Focus Area/Action Item Addressed: Improved connections between downtown and the waterfront; Focus on Neighborhood Associations		
Amount Requested: N/A	Amount Budgeted: N/A	
Fund(s) or Account(s): N/A	Fund(s) or Account(s): N/A	
Recommended Motion: Approve Traffic Control Order #78-(2023)		
Approvals:	Legal Review ☐	Guest(s) Invited / Presenting
Immediate Division Head ☒	Information Technology ☐	Yes ☐
Other Division Heads ☒	Communication ☐	No ☒
For City Clerk Use Only: Commission Action:		

City of Muskegon

Traffic Control Order

No. 78-(2023)

The following regulatory sign(s) shall be Installed/Removed at/from the location(s) specified below under location in accordance with the Michigan Manual of Uniform Traffic Control.

Device/Regulatory Sign(s) to be Installed/Removed: *Removal of "Stop" signs on north- and south-bound Lakeshore Drive at Southern Avenue (removal of an all-way stop).*

Location: *Southern Avenue at Lakeshore Drive.*

Recommendation:

_____ Date: ____/____/____
Director of Public Works

_____ Date: ____/____/____
Police Chief

_____ Date: ____/____/____
City Manager

Commission Approval (required for Permanent TCO only):

_____ Date: ____/____/____
Commission Action #

Installation/removal

Date assigned: ____/____/____ By: _____
Traffic Supervisor

Date completed: ____/____/____ By: _____
Traffic Department Employee

☐ **Temporary;** does not require Commission Action, good for 90-days from Installation/Removal Date.

☐ **Permanent;** requires Commission Action

WATCH MUSKEGON

Agenda Item Review Form

Muskegon City Commission

Commission Meeting Date: April 25, 2023	Title: Street Sweeping Contract Award	
Submitted By: Dan VanderHeide	Department: DPW	
Brief Summary: Staff is requesting authorization to enter into a three-year contract with Tri-Us Services, Inc. for street sweeping services throughout the City for 2023 through 2025 in an amount of \$310,370.23 each year.		
Detailed Summary & Background: Staff issued a public bid for street sweeping services, as our previous contract had expired. A bid tab showing the results is included. The low bidder, Tri-US Services, has been performing street sweeping services for the City for many years and has always done a good job; staff recommends award to Tri-Us Services. The funds for street sweeping comes from the Sanitation Fund, which receives revenue from both the sanitation millage and the sanitation fee on the water bill. MDOT contracts with the City for sweeping of the trunklines within the City via reimbursement, and MDOT will again reimburse the City for the trunkline portions of this contract on an annual basis. The bid includes \$170.00 per hour for additional sweeping services such as special events, construction sweeping, etc.		
Goal/Focus Area/Action Item Addressed: Blight cleanup, Sustainability in Financial Practices & Infrastructure		
Amount Requested: \$310,370.23 (FY23-26 Each)	Amount Budgeted: \$275,000 FY23 \$311,000 FY24-26	
Fund(s) or Account(s): 101-521 (Sanitation)	Fund(s) or Account(s): 101-521 (Sanitation)	
Recommended Motion: Authorize staff to enter into a three-year contract with Tri-Us Services for street sweeping for an annual cost of \$310,370.23.		
Approvals: Immediate Division Head ☒ Other Division Heads ☐	Legal Review Information Technology ☐ Communication ☐	Guest(s) Invited / Presenting Yes ☐ No ☒
For City Clerk Use Only: Commission Action:		

TABULATION OF BIDS
2023, 2024, 2025 STREET SWEEPING CONTRACT

TRI-US SERVICES, INC.
 PO Box 123
 Kent City, MI 49330

SCA of MI, LLC
 550 Wolverine St.
 Rockford, MI 49341

	1st Sweep	2nd Sweep	3rd Sweep	4th Sweep	Total Per Year	1st Sweep	2nd Sweep	3rd Sweep	4th Sweep	Total Per Year
Regular Sweeps (Approx. 358.62 Miles)	\$ 133,491.54	\$ 87,056.70	\$ 34,823.88	\$ 34,823.88	\$ 290,196.00	\$ 111,905.38	\$ 111,905.38	\$ 111,905.38	\$ 111,905.38	\$ 447,621.52
Trunkline Sweeps (Approx. 19.8 Miles)	\$ 9,280.16	\$ 6,052.27	\$ 2,420.90	\$ 2,420.90	\$ 20,174.23	\$ 6,178.48	\$ 6,178.48	\$ 6,178.48	\$ 6,178.48	\$ 24,713.92
	Annual Bid Total					Annual Bid Total				
					\$ 310,370.23					\$ 472,335.44
Special Requests - \$ 200.00 per hour						Special Requests - \$ 170.00 per hour				

Bid Bond Included Yes
 Non-Collusion Included Yes

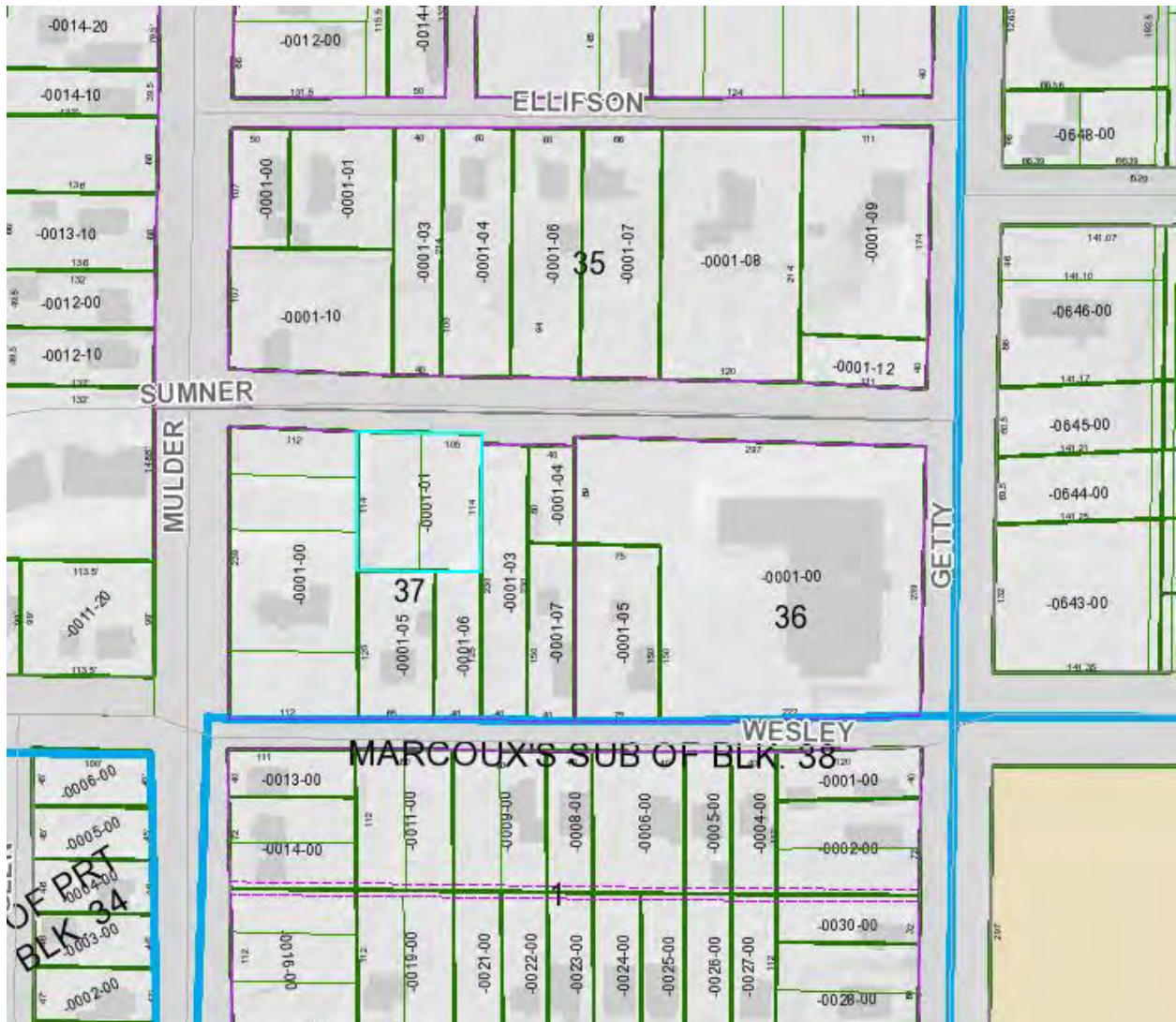
Yes
 Yes

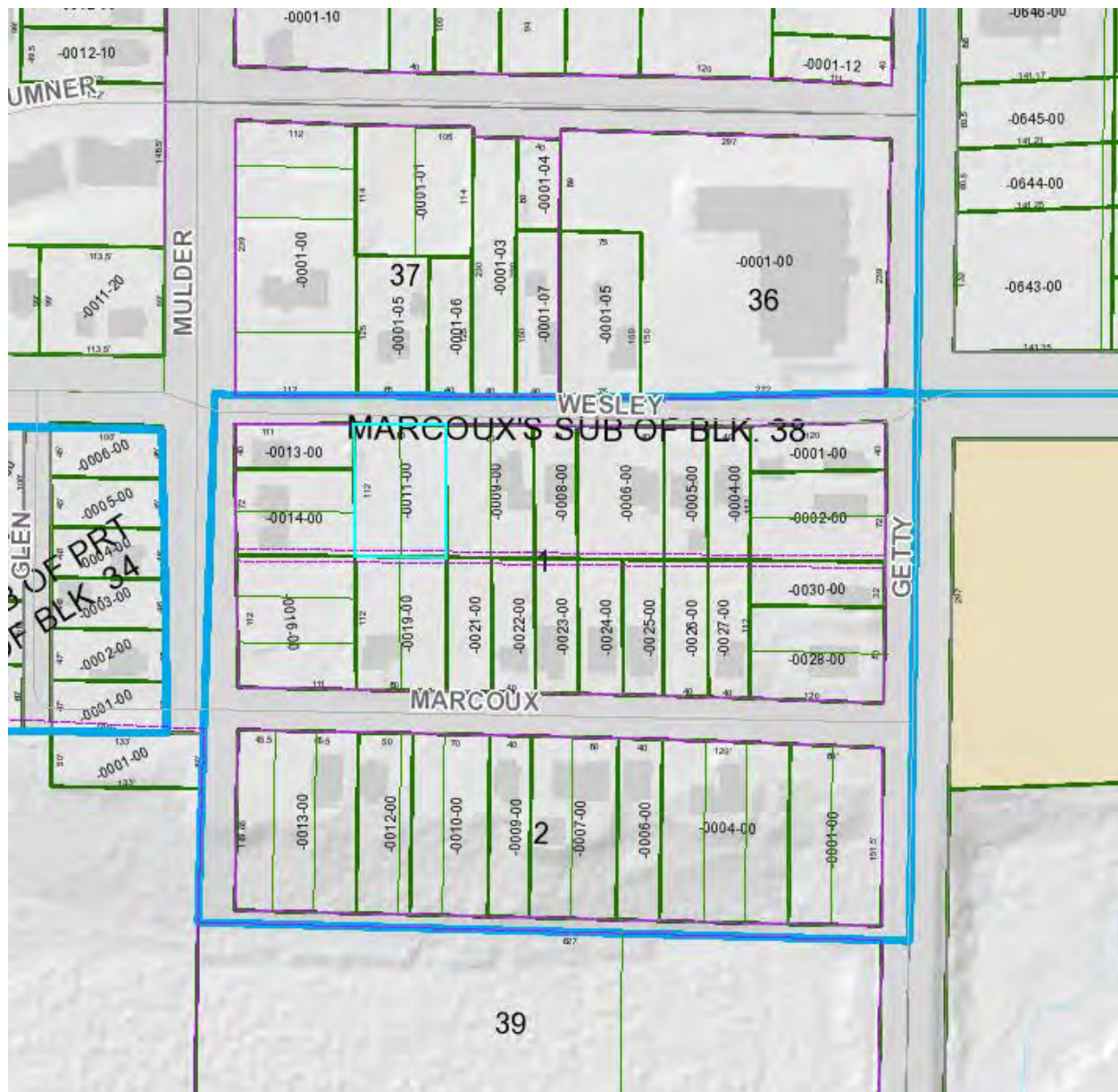
WATCH MUSKEGON

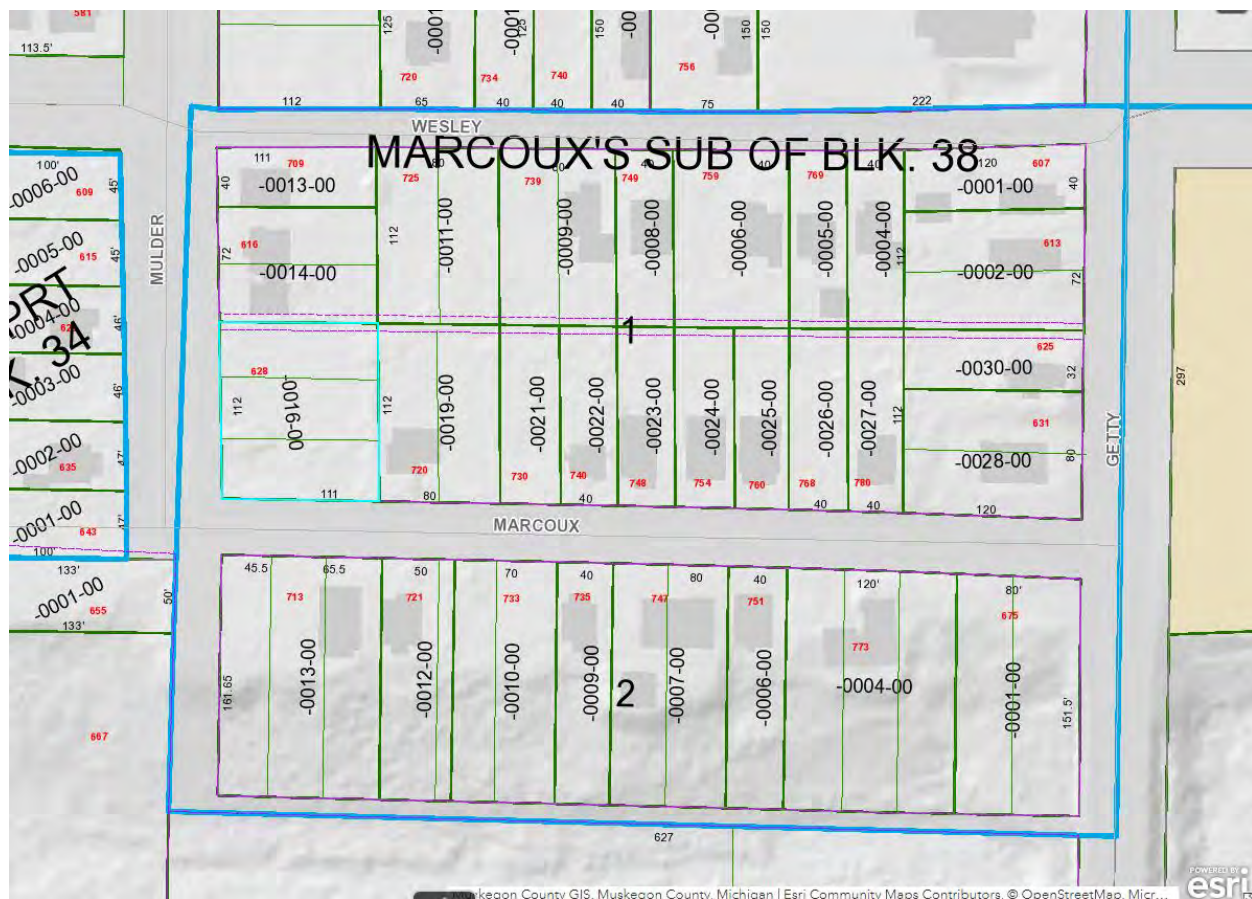
Agenda Item Review Form Muskegon City Commission

Commission Meeting Date: 4/25/2023	Title: Sale of Lots for Residential Construction to LRS Enterprises
Submitted By: Jake Eckholm	Department: Development Services
Brief Summary: LRS Enterprises will complete their ARP Infill Housing Agreement with the City this calendar year, and would like to secure lots to privately build and market 9 residential for-sale homes.	
Detailed Summary & Background: Lots requested: - 723 Sumner for construction of 2 homes (lot split) - 725 Wesley for construction of 1 home - 628 Mulder for construction of 2 homes (lot split) - 396 Erickson for construction of 1 home - 397 Marquette for construction of 1 home - 388 Jackson for construction of 2 homes (lot split) Total price for acquisition at 75% of True Cash Value is \$15,075.00. LRS will have the opportunity to have some of that rebated to them pending final design of the homes per the lot sale policy.	
Goal/Focus Area/Action Item Addressed: Goal 1 (Image) Housing Focus Area, Goal 2 (Quality of Life) Housing Focus Area, Action Item 21-8 Expand Housing Options, and Goal 3 (Revitalize Revenues) Housing Focus Area, Action Item 21-13 Increase Property Values in Urban Core and Eastside Neighborhoods, Blight Elimination	
Amount Requested: N/A	Amount Budgeted: N/A
Fund(s) or Account(s): N/A	Fund(s) or Account(s): N/A
Recommended Motion: Motion to authorize the Code Coordinator to work with the developer and complete the sale of the vacant lots to build nine single family homes on the buildable lots as described and to have the Mayor and Clerk sign the purchase agreement and deed.	

Approvals:		Guest(s) Invited / Presenting:	
Immediate Division Head	☒ Information Technology	☐	Yes ☐
Other Division Heads	☒ Communication	☐	No ☒
Legal Review	☐		
For City Clerk Use Only:			
Commission Action:			













WATCH MUSKEGON

Agenda Item Review Form

Muskegon City Commission

Commission Meeting Date: April 25, 2023		Title : Amendments to the zoning ordinance, marihuana processing-2nd Reading	
Submitted By: Mike Franzak		Department: Planning	
Brief Summary: Staff initiated request to amend the B-2, B-4, I-1, I-2 and MC sections of the zoning ordinance to allow marihuana processing facilities without extraction methods classified as hazardous under the Michigan Building Code as a special use permitted.			
Detailed Summary & Background: The Planning Commission recommended approval of the amendments by a 7-0 vote at their March 16, 2023 meeting.			
Goal/Focus Area/Action Item Addressed: Economic Development, Housing and Business/Diversity Reflected in Businesses and Business Owners/Investigate Options for assisting minority owned businesses			
Amount Requested:		Amount Budgeted:	
Fund(s) or Account(s):		Fund(s) or Account(s):	
Recommended Motion: To approve the request to amend the B-2, B-4, I-1, I-2 and MC sections of the zoning ordinance to allow marihuana processing facilities without extraction methods classified as hazardous under the Michigan Building Code as a special use permitted			
Approvals: <i>Get approval from division head at a minimum prior to sending to the Clerk.</i> Immediate Division Head ☐ Information Technology ☐ Other Division Heads ☐ Communication ☐ Legal Review ☐		Guest(s) Invited / Presenting Yes ☐ No ☐	
For City Clerk Use Only: Commission Action:			

Planning Commission Packet Excerpt:

March 16, 2023

Hearing, Case 2023-08: Staff initiated request to amend the B-2, B-4, I-1, I-2 and MC sections of the zoning ordinance to allow marihuana processing facilities without extraction methods classified as hazardous under the Michigan Building Code as a special use permitted.

SUMMARY

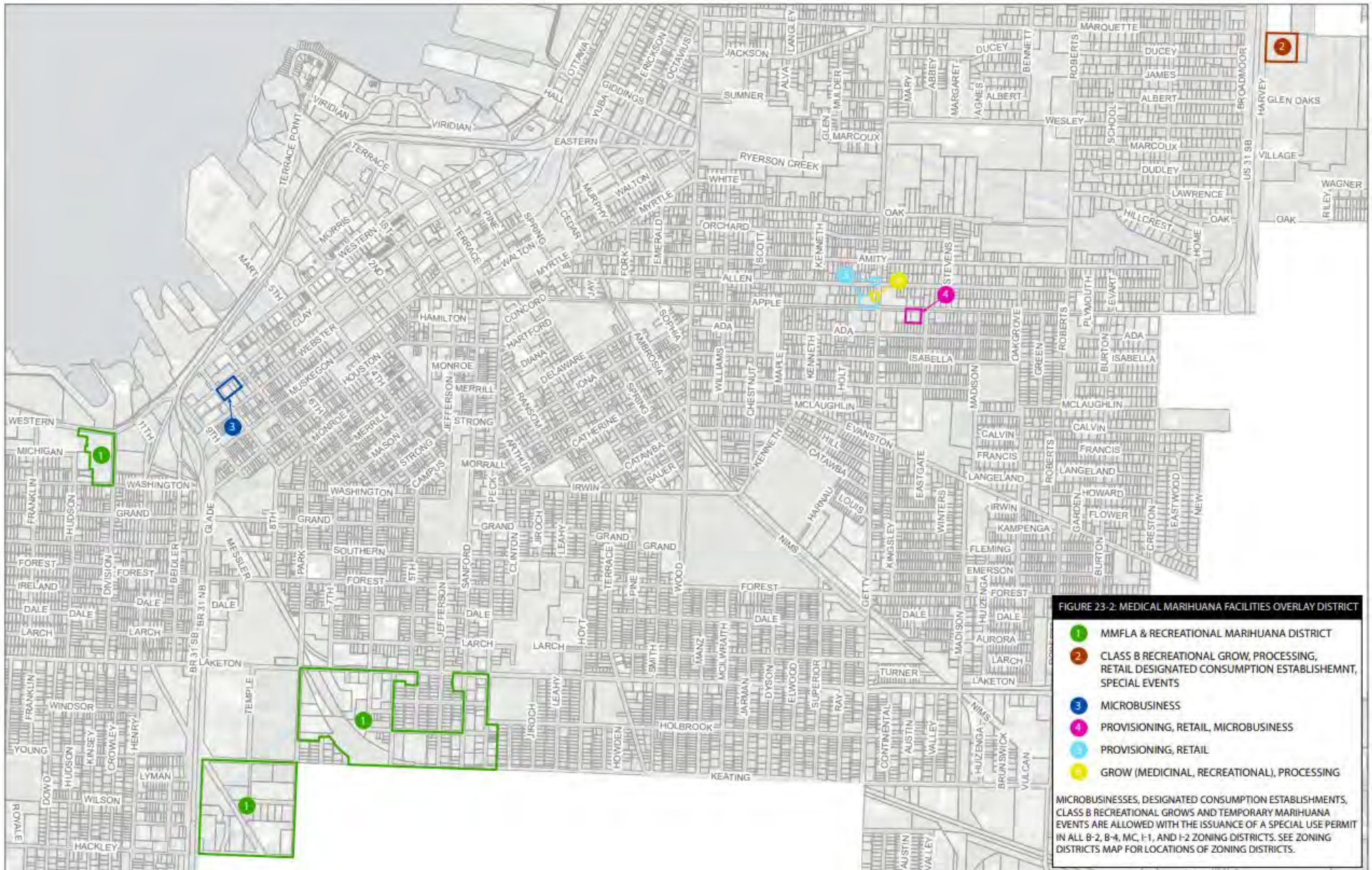
1. All marihuana license types are allowed within the original marihuana facilities overlay district. Other certain license types are allowed at extensions of the marihuana facilities overlay district, located at various places throughout the City (See map).
2. At the beginning of the marihuana overlay district creation, prices of properties began to increase exponentially. This led to many local residents being priced out of the industry.
3. In 2021, the City amended the zoning ordinance to allow certain low-intensity license types to locate in B-2, B-4, MC, I-1 & I-2 districts with the issuance of a special use permit. These license types include Class B Grows (500 plants), microbusinesses and designated consumption establishments. This helped local residents obtain properties at more affordable prices.
4. Processing centers were not considered for the 2021 amendment because of concerns over the dangers associated with the creation of concentrates. However, the State of Michigan now issues different types of processing licenses, including those that do create concentrates with hazardous extraction methods and those that do not. Those that do not may be doing nothing more than repacking products or combining different aspects of the plant together.

DELIBERATION

The following proposed motion is offered for consideration:

I move that the request to amend the B-2, B-4, I-1, I-2 and MC sections of the zoning ordinance to allow marihuana processing facilities without extraction methods classified as hazardous under the Michigan Building Code as a special use permitted be recommended to the City Commission for approval.

Marihuana Facilities Overlay District



CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN

ORDINANCE NO. _____

An ordinance to amend the B-2, B-4, I-1, I-2 and MC sections of the zoning ordinance to allow marihuana processing facilities without extraction methods classified as hazardous under the Michigan Building Code as a special use permitted.

THE CITY COMMISSION OF THE CITY OF MUSKEGON HEREBY ORDAINS:

The B-2, B-4, I-1, I-2 and MC sections of the zoning ordinance are hereby amended to allow marihuana processing facilities without extraction methods classified as hazardous under the Michigan Building Code as a special use permitted.

This ordinance adopted:

Ayes: _____

Nayes: _____

Adoption Date: _____

Effective Date: _____

First Reading: _____

Second Reading: _____

CITY OF MUSKEGON

By: _____
Ann Meisch, MMC, City Clerk

CERTIFICATE

The undersigned, being the duly qualified clerk of the City of Muskegon, Muskegon County, Michigan, does hereby certify that the foregoing is a true and complete copy of an ordinance adopted by the City Commission of the City of Muskegon, at a regular meeting of the City Commission on the 25th day of April 2023, at which meeting a quorum was present and remained throughout, and that the original of said ordinance is on file in the records of the City of Muskegon. I further certify that the meeting was conducted and public notice was given pursuant to and in full compliance with the Michigan Zoning Enabling Act, Public Acts of Michigan No. 33 of 2006, and that minutes were kept and will be or have been made available as required thereby.

DATED: _____, 2022.

Ann Meisch, MMC

Clerk, City of Muskegon

Publish: Notice of Adoption to be published once within ten (10) days of final adoption.

CITY OF MUSKEGON

NOTICE OF ADOPTION

Please take notice that on April 25, 2023, the City Commission of the City of Muskegon adopted an ordinance to amend the B-2, B-4, I-1, I-2 and MC sections of the zoning ordinance to allow marihuana processing facilities without extraction methods classified as hazardous under the Michigan Building Code as a special use permitted.

Copies of the ordinance may be viewed and purchased at reasonable cost at the Office of the City Clerk in the City Hall, 933 Terrace Street, Muskegon, Michigan, during regular business hours.

This ordinance amendment is effective ten days from the date of this publication.

Published _____, 2023.

CITY OF MUSKEGON

By _____

Ann Meisch, MMC

City Clerk

PUBLISH ONCE WITHIN TEN (10) DAYS OF FINAL PASSAGE.

Account No. 101-80400-5354

WATCH MUSKEGON

Agenda Item Review Form

Muskegon City Commission

Commission Meeting Date: April 25, 2023		Title: Rezoning a portion of 560 Mart St – 2nd Reading	
Submitted By: Mike Franzak		Department: Planning	
Brief Summary: Request to rezone a portion of the property at 560 Mart St from B-2, Convenience & Comparison Business to WM-Waterfront Marine, by West MI Dock & Market.			
Detailed Summary & Background: The Planning Commission recommended approval of the rezoning by a 7-0 vote at their March 16 meeting.			
Goal/Focus Area/Action Item Addressed:			
Amount Requested:		Amount Budgeted:	
Fund(s) or Account(s):		Fund(s) or Account(s):	
Recommended Motion: To approve the request to rezone a portion of 560 Mart St from B-2 to Waterfront Marine.			
Approvals: <i>Get approval from division head at a minimum prior to sending to the Clerk.</i> Immediate Division Head ☐ Information Technology ☐ Other Division Heads ☐ Communication ☐ Legal Review ☐		Guest(s) Invited / Presenting Yes ☐ No ☐	
For City Clerk Use Only: Commission Action:			

PLANNING COMMISSION PACKET EXCERPT

March 16, 2023

Hearing, Case 2023-05: Request to rezone a portion of the property at 560 Mart St from B-2, Convenience & Comparison Business to WM-Waterfront Marine, by West MI Dock & Market.

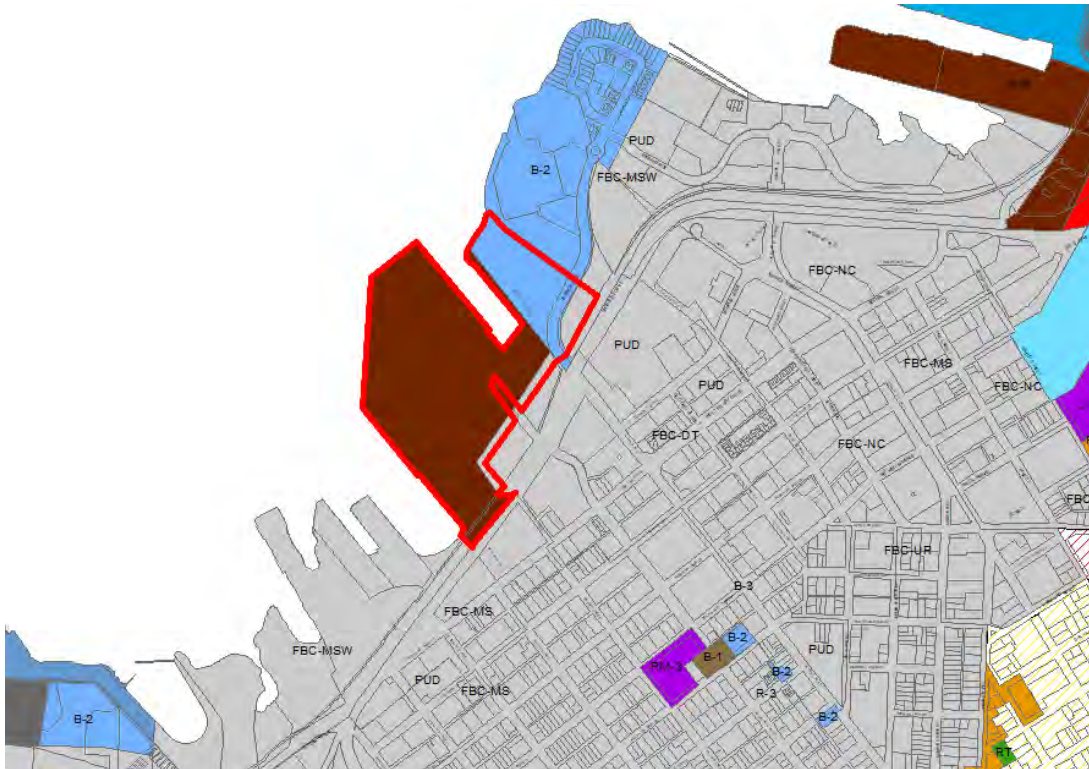
SUMMARY

1. A majority of the property is zoned WM, Waterfront Marine. The eastern portion of the property is mostly zoned B-2, Convenience & Comparison Business. A small portion of the property (south of Terrace Point Dr) is zoned Form Based Code, Mainstreet Waterfront (FBC, MSW).
2. The entire site measures 43 acres. The area requested for a rezoning is approximately six acres.
3. Although an exact use has not been identified at this time, the applicant knows that they would like to utilize this portion of the land for waterfront marine activities.
4. Please see the enclosed copies of the B-2 and WM zoning ordinance excerpts. The uses allowed are fairly similar, with WM allowing more intense marine related activities (engine and hull repair) while B-2 allows more intense non-water related activities (auto repair, amusement facilities).
5. Notices were sent to everyone within 300 feet of this property. At the time of this writing, staff had not received any comments from the public.

560 Mart St



Zoning Map



Aerial Map



CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN
ORDINANCE NO. _____

**An ordinance to amend the zoning map of the City to provide for a zone change for a portion of 560 Mart
St from B-2 to WM**

THE CITY COMMISSION OF THE CITY OF MUSKEGON HEREBY ORDAINS:

The zoning map of the City of Muskegon is hereby amended to change the portion of 560 Mart St zoned B-2, Convenience & Comparison Business to WM, Waterfront Marine.

CITY OF MUSKEGON REVISED PLAT OF 1903 LOT 9 BLK 563 ALSO THAT PART OF CENTRAL WARF LYING NLY OF SLY LN OF SD LOT 9 EXTD WLY ALSO PART OF LOT 2 BLK 567 LYING NWLY OF A LN BEG ON WLY LN THIRD ST 965.75 FT NWLY OF NE COR BLK 566 & RUNNING TH S 24D 27M W TO SW LN BLK 567 TO CENTER OF MUSKEGON LAKE ALSO PART OF LOT 2 BLK 567 BEG ON WLY LN THIRD ST 858.25 FT NWLY OF NELY COR BLK 566 NLY ALG THIRD ST 107.5 FT TH S 24D 27M W 378.8 FT TH S 41D 45M E 132.4 FT NELY ALG CURVE PAR TO GRAND TRUNK TRACKS TO POB ALSO ENTIRE BLK 569 SUBJ TO ESMTS/COVENANTS L/P 3609/137

This ordinance adopted:

Ayes: _____

Nayes: _____

Adoption Date: _____

Effective Date: _____

First Reading: _____

Second Reading: _____

CITY OF MUSKEGON

By: _____

Ann Meisch, MMC

City Clerk

CERTIFICATE (Rezoning a portion of 560 Mart St from B-2 to WM)

The undersigned, being the duly qualified clerk of the City of Muskegon, Muskegon County, Michigan, does hereby certify that the foregoing is a true and complete copy of an ordinance adopted by the City Commission of the City of Muskegon, at a regular meeting of the City Commission on the 25th day of April, at which meeting a quorum was present and remained throughout, and that the original of said ordinance is on file in the records of the City of Muskegon. I further certify that the meeting was conducted and public notice was given pursuant to and in full compliance with the Michigan Zoning Enabling Act, Public Acts of Michigan No. 33 of 2006, and that minutes were kept and will be or have been made available as required thereby.

DATED: _____, 2023 _____

Ann Meisch, MMC
Clerk, City of Muskegon

Publish Notice of Adoption to be published once within ten (10) days of final adoption.

CITY OF MUSKEGON
NOTICE OF ADOPTION

Please take notice that on April 25, 2023, the City Commission of the City of Muskegon adopted an ordinance amending the zoning map to provide for the change of zoning for a portion of 560 Mart St from B-2 to WM:

CITY OF MUSKEGON REVISED PLAT OF 1903 LOT 9 BLK 563 ALSO THAT PART OF CENTRAL WARF LYING NLY OF SLY LN OF SD LOT 9 EXTD WLY ALSO PART OF LOT 2 BLK 567 LYING NWLY OF A LN BEG ON WLY LN THIRD ST 965.75 FT NWLY OF NE COR BLK 566 & RUNNING TH S 24D 27M W TO SW LN BLK 567 TO CENTER OF MUSKEGON LAKE ALSO PART OF LOT 2 BLK 567 BEG ON WLY LN THIRD ST 858.25 FT NWLY OF NELY COR BLK 566 NLY ALG THIRD ST 107.5 FT TH S 24D 27M W 378.8 FT TH S 41D 45M E 132.4 FT NELY ALG CURVE PAR TO GRAND TRUNK TRACKS TO POB ALSO ENTIRE BLK 569 SUBJ TO ESMTS/COVENANTS L/P 3609/137

Copies of the ordinance may be viewed and purchased at reasonable cost at the Office of the City Clerk in the City Hall, 933 Terrace Street, Muskegon, Michigan, during regular business hours.

This ordinance amendment is effective ten days from the date of this publication.

Published _____, 2023

By _____

Ann Meisch, MMC

City Clerk

PUBLISH ONCE WITHIN TEN (10) DAYS OF FINAL PASSAGE.

Account No. 101-80400-5354

WATCH MUSKEGON

Agenda Item Review Form

Muskegon City Commission

Commission Meeting Date: April 25, 2023		Title: Rezoning of 1163 Terrace St – 2nd Reading	
Submitted By: Mike Franzak		Department: Planning	
Brief Summary: Request to rezone the property at 1163 Terrace St from R-3 Residence to B-2, Convenience & Comparison Business, by Ryan Burns.			
Detailed Summary & Background: The Planning Commission recommended approval of the rezoning by a 7-0 vote at their March 16 meeting.			
Goal/Focus Area/Action Item Addressed:			
Amount Requested:		Amount Budgeted:	
Fund(s) or Account(s):		Fund(s) or Account(s):	
Recommended Motion: To approve the rezoning of 1163 Terrace St from R-3 to B-2.			
Approvals: <i>Get approval from division head at a minimum prior to sending to the Clerk.</i> Immediate Division Head ☒ Information Technology ☐ Other Division Heads ☒ Communication ☐ Legal Review ☐		Guest(s) Invited / Presenting Yes ☐ No ☐	
For City Clerk Use Only: Commission Action:			

PLANNING COMMISSION PACKET EXCERPT

March 16, 2023

Hearing, Case 2023-06: Request to rezone the property at 1163 Terrace St from R-3 Residence to B-2, Convenience & Comparison Business, by Ryan Burns.

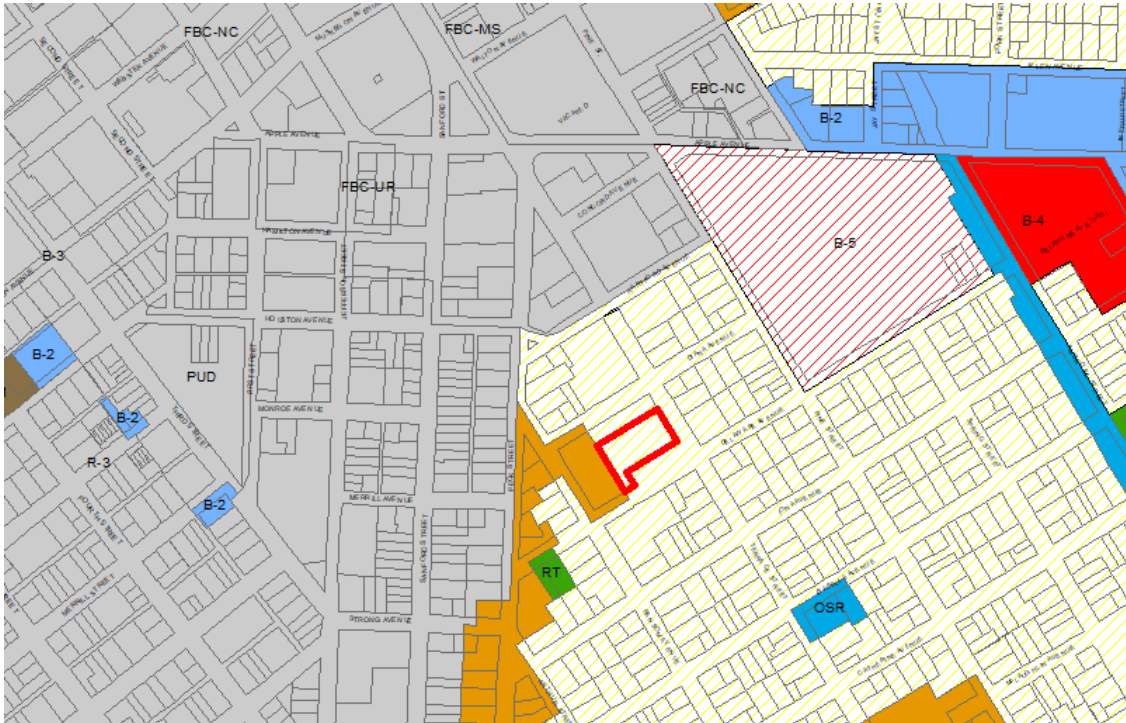
SUMMARY

1. The property is zoned R-3, Single-Family High-Density Residential and has historically been used as a church. It has been vacant for the past few years.
2. The property measures just under an acre and the existing building measures 8,500 sf.
3. The applicant is seeking to reutilize the building for a commercial catering business (existing kitchen in basement), offices and a rental hall. These uses are all very similar as to the uses of a church.
4. The B-2, Convenience and Comparison Business district allows these types of uses, while limiting most uses that a heavily residential area may find intrusive. Please see the enclosed zoning ordinance excerpt for B-2 districts.
5. There is room for about 65 parking spaces in the existing lot. Parking is also allowed on all three streets the property borders.
6. Notices were sent to everyone within 300 feet of this property. At the time of this writing, staff had not received any comments from the public.

1163 Terrace St



Zoning Map



Aerial Map



CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN
ORDINANCE NO. _____

**An ordinance to amend the zoning map of the City to provide for a zone change for 1163 Terrace St from
R-3 to B-2**

THE CITY COMMISSION OF THE CITY OF MUSKEGON HEREBY ORDAINS:

The zoning map of the City of Muskegon is hereby amended to change the zoning for 1163 Terrace St from R-3 to B-2.

CITY OF MUSKEGON REVISED PLAT OF 1903 LOTS 5-9 INCL LOTS 11& 12 EXC NWLY 1/2 OF SD
LOTS 11 & 12 BLK 229

This ordinance adopted:

Ayes: _____

Nays: _____

Adoption Date: _____

Effective Date: _____

First Reading: _____

Second Reading: _____

CITY OF MUSKEGON

By: _____

Ann Meisch, MMC

City Clerk

CERTIFICATE (Rezoning 1163 Terrace St from R-3 to B-4)

The undersigned, being the duly qualified clerk of the City of Muskegon, Muskegon County, Michigan, does hereby certify that the foregoing is a true and complete copy of an ordinance adopted by the City Commission of the City of Muskegon, at a regular meeting of the City Commission on the 25th day of April, 2023 at which meeting a quorum was present and remained throughout, and that the original of said ordinance is on file in the records of the City of Muskegon. I further certify that the meeting was conducted and public notice was given pursuant to and in full compliance with the Michigan Zoning Enabling Act, Public Acts of Michigan No. 33 of 2006, and that minutes were kept and will be or have been made available as required thereby.

DATED: _____, 2023 _____

Ann Meisch, MMC

Clerk, City of Muskegon

Publish Notice of Adoption to be published once within ten (10) days of final adoption.

CITY OF MUSKEGON
NOTICE OF ADOPTION

Please take notice that on April 25, 2023, the City Commission of the City of Muskegon adopted an ordinance amending the zoning map to provide for the change of zoning for 1163 Terrace St from R-3 to B-2:

CITY OF MUSKEGON REVISED PLAT OF 1903 LOTS 5-9 INCL LOTS 11& 12 EXC NWLY 1/2 OF SD
LOTS 11 & 12 BLK 229

Copies of the ordinance may be viewed and purchased at reasonable cost at the Office of the City Clerk in the City Hall, 933 Terrace Street, Muskegon, Michigan, during regular business hours.

This ordinance amendment is effective ten days from the date of this publication.

Published _____, 2023

By _____

Ann Meisch, MMC

City Clerk

PUBLISH ONCE WITHIN TEN (10) DAYS OF FINAL PASSAGE.

Account No. 101-80400-5354

WATCH MUSKEGON

Agenda Item Review Form

Muskegon City Commission

Commission Meeting Date: April 25, 2023		Title: Amendment to the zoning ordinance, carriage house requirements – 2nd Reading	
Submitted By: Mike Franzak		Department: Planning	
Brief Summary: Staff initiated request to amend the form-based code section of the zoning ordinance to allow carriage houses with only a one-story minimum requirement and only a 20-foot depth requirement.			
Detailed Summary & Background: Carriage houses are currently required to be two stories and have a minimum depth of 30 feet. The Planning Commission recommended approval of the amendments by a 6-1 vote at their March 16 meeting.			
Goal/Focus Area/Action Item Addressed: Economic Development, Housing and Business/ Diverse Housing Types/Increase Variety of Housing Types			
Amount Requested:		Amount Budgeted:	
Fund(s) or Account(s):		Fund(s) or Account(s):	
Recommended Motion: To approve the requested amendments to allow carriage houses with only a one-story minimum requirement and only a 20-foot depth requirement.			
Approvals: <i>Get approval from division head at a minimum prior to sending to the Clerk.</i>		Guest(s) Invited / Presenting	
Immediate Division Head	☐	Information Technology	☐
Other Division Heads	☐	Communication	☐
Legal Review	☐		
For City Clerk Use Only: Commission Action:			

Planning Commission Packet Excerpt:

March 16, 2023

Hearing, Case 2023-07: Staff initiated request to amend the form-based code section of the zoning ordinance to allow carriage houses with only a one-story minimum requirement and only a 20-foot depth requirement.

SUMMARY

1. A carriage house is an accessory structure that provides either a small residential unit or home office space behind the principal structure.
2. Carriage houses are allowed in Form Based Code, Urban Residential zones, but they are required to be at least two stories.
3. They are considered accessory structures and are only allowed on properties that have an existing house. Properties are only allowed to have one accessory structure, so a detached garage and a separate carriage house would not be allowed. You are allowed to have a carriage house unit above a detached garage.
4. The proposed amendment would allow carriage houses that are only one story tall, but still allowing for a two story maximum. It would essentially allow carriage houses without a garage beneath them. It would not allow for a separate carriage house and a detached garage.
5. Most existing garages in the City are only one story tall. The amendment would allow the conversion of these garages to carriage houses, as long as they meet all other zoning requirements.
6. The house and carriage house may not cover more than 50% of the property.
7. A carriage house may not have a larger footprint than the house.
8. The minimum size required for a carriage house is 375 sf.
9. The ordinance currently states that a carriage house cant exceed 36 feet in width and must be a minimum of 30 feet deep. Staff is also proposing to amend the minimum depth requirement to 20 feet. The current depth requirement is too large for someone that wants a small sized carriage house.

Existing Conforming Carriage Houses



Existing Legally, Non-Conforming Carriage Houses



Existing Ordinance

CONTEXT AREAS AND USE

SECTION 2005

2005.10 URBAN RESIDENTIAL (UR) CONTEXT AREA

3.0 PERMITTED BUILDING TYPES, BUILDING TYPE HEIGHTS, AND BUILDING TYPE LOT SIZES

BUILDING TYPE WITH FRONTAGE OPTION		URBAN RESIDENTIAL (UR) CONTEXT AREA		
		PERMITTED IN CONTEXT AREA	BUILDING HEIGHT	BUILDING LOT SIZE
MIXED-USE BUILDING TYPE	with STOREFRONT			
	with BALCONY			
	with TERRACE			
	with FORECOURT			
	with DRIVE-THROUGH			
RETAIL BUILDING TYPE	with STOREFRONT			
	with TERRACE			
	with DRIVE-THROUGH			
FLEX BUILDING TYPE	with STOREFRONT			
	with TERRACE			
	with FORECOURT			
	with DOORYARD			
COTTAGE RETAIL BUILDING TYPE	with STOREFRONT			
	with DOORYARD			
	with STOOP			
LIVE / WORK BUILDING TYPE	with STOREFRONT			
	with DOORYARD	Conditional*	2 story building required	Lot Width: 18' min. / 35' max. Lot Depth: 80' min.
	with LIGHTWELL			
	with STOOP	Conditional*	2 story building required	Lot Width: 18' min. / 35' max. Lot Depth: 80' min.
LARGE MULTI-PLEX BUILDING TYPE	with FORECOURT			
	with DOORYARD			
	with STOOP			
	with PROJECTING PORCH			
SMALL MULTI-PLEX BUILDING TYPE	with STOOP	4 unit max. By Right	3 story max. / 2 story min.	Lot Width: 50' min. / 80' max. Lot Depth: 100' min.
	with PROJECTING PORCH	4 unit max. By Right	3 story max. / 2 story min.	Lot Width: 50' min. / 80' max. Lot Depth: 100' min.
	with ENGAGED PORCH	4 unit max. By Right	3 story max. / 2 story min.	Lot Width: 50' min. / 80' max. Lot Depth: 100' min.
ROWHOUSE BUILDING TYPE	with LIGHTWELL			
	with STOOP	By Right	2 story building required	Lot Width: 18' min. / 30' max. Lot Depth: 100' min.
	with PROJECTING PORCH	By Right	2 story building required	Lot Width: 18' min. / 30' max. Lot Depth: 100' min.
DUPLEX BUILDING TYPE	with STOOP	By Right	2 story building required	Lot Width: 40' min. / 60' max. Lot Depth: 100' min.
	with PROJECTING PORCH	By Right	2 story building required	Lot Width: 40' min. / 60' max. Lot Depth: 100' min.
	with ENGAGED PORCH	By Right	2 story building required	Lot Width: 40' min. / 60' max. Lot Depth: 100' min.
DETACHED HOUSE BUILDING TYPE	with STOOP	By Right	2 story max. / 1 story min.	Lot Width: 30' min. / 60' max. Lot Depth: 100' min.
	with PROJECTING PORCH	By Right	2 story max. / 1 story min.	Lot Width: 30' min. / 60' max. Lot Depth: 100' min.
	with ENGAGED PORCH	By Right	2 story max. / 1 story min.	Lot Width: 30' min. / 60' max. Lot Depth: 100' min.
CARRIAGE HOUSE BUILDING TYPE		By Right	2 story building required	Not Applicable - Carriage House Building Type must be used as an accessory building to another building type (refer to Section 2006)
CIVIC BUILDING TYPE		By Right	3 story max. / 2 story min.	Lot Width: 25' min. / 150' max. Lot Depth: 100' min.

Shaded areas represent Building Types and / or frontages that are not permitted in specified Context Area.

* Refer to the Building Type with specific frontage option in Section 2006 for buildings and frontages labeled as Conditional.

Proposed Amendment

CONTEXT AREAS AND USE

SECTION 2005

2005.10 URBAN RESIDENTIAL (UR) CONTEXT AREA

3.0 PERMITTED BUILDING TYPES, BUILDING TYPE HEIGHTS, AND BUILDING TYPE LOT SIZES				
BUILDING TYPE WITH FRONTAGE OPTION		URBAN RESIDENTIAL (UR) CONTEXT AREA		
		PERMITTED IN CONTEXT AREA	BUILDING HEIGHT	BUILDING LOT SIZE
MIXED-USE BUILDING TYPE	with STOREFRONT			
	with BALCONY			
	with TERRACE			
	with FORECOURT			
	with DRIVE-THROUGH			
RETAIL BUILDING TYPE	with STOREFRONT			
	with TERRACE			
	with DRIVE-THROUGH			
FLEX BUILDING TYPE	with STOREFRONT			
	with TERRACE			
	with FORECOURT			
	with DOORYARD			
COTTAGE RETAIL BUILDING	with STOREFRONT			
	with DOORYARD			
	with STOOP			
LIVE / WORK BUILDING TYPE	with STOREFRONT			
	with DOORYARD	Conditional*	2 story building required	Lot Width: 18' min. / 35' max. Lot Depth: 80' min.
	with LIGHTWELL			
	with STOOP	Conditional*	2 story building required	Lot Width: 18' min. / 35' max. Lot Depth: 80' min.
LARGE MULTI-PLEX BUILDING TYPE	with FORECOURT			
	with DOORYARD			
	with STOOP			
	with PROJECTING PORCH			
SMALL MULTI-PLEX BUILDING TYPE	with STOOP	By Right	3 story max. / 2 story min.	Lot Width: 50' min. / 80' max. Lot Depth: 100' min.
	with PROJECTING PORCH	By Right	3 story max. / 2 story min.	Lot Width: 50' min. / 80' max. Lot Depth: 100' min.
	with ENGAGED PORCH	By Right	3 story max. / 2 story min.	Lot Width: 50' min. / 80' max. Lot Depth: 100' min.
ROWHOUSE BUILDING TYPE	with LIGHTWELL			
	with STOOP	By Right	2 story building required	Lot Width: 18' min. / 30' max. Lot Depth: 100' min.
	with PROJECTING PORCH	By Right	2 story building required	Lot Width: 18' min. / 30' max. Lot Depth: 100' min.
DUPLEX BUILDING TYPE	with STOOP	By Right	2 story building required	Lot Width: 40' min. / 60' max. Lot Depth: 100' min.
	with PROJECTING PORCH	By Right	2 story building required	Lot Width: 40' min. / 60' max. Lot Depth: 100' min.
	with ENGAGED PORCH	By Right	2 story building required	Lot Width: 40' min. / 60' max. Lot Depth: 100' min.
DETACHED HOUSE BUILDING TYPE	with STOOP	By Right	2 story max. / 1 story min.	Lot Width: 30' min. / 60' max. Lot Area: 3000 SF min.
	with PROJECTING PORCH	By Right	2 story max. / 1 story min.	Lot Width: 30' min. / 60' max. Lot Area: 3000 SF min.
	with ENGAGED PORCH	By Right	2 story max. / 1 story min.	Lot Width: 30' min. / 60' max. Lot Area: 3000 SF min.
CARRIAGE HOUSE BUILDING TYPE		By Right	2 story max. / 1 story min.	Not Applicable - Carriage House Building Type must be used as an accessory building to another building type (refer to Section 2006).
CIVIC BUILDING TYPE		By Right	3 story max. / 2 story min.	Lot Width: 25' min. / 150' max. Lot Depth: 100' min.

Shaded areas represent Building Types and / or frontages that are not permitted in specified Context Area.

* Refer to the Building Type with specific frontage option in Section 2006 for buildings and frontages labeled as Conditional.

Existing Ordinance

BUILDING TYPE STANDARDS

SECTION 2006

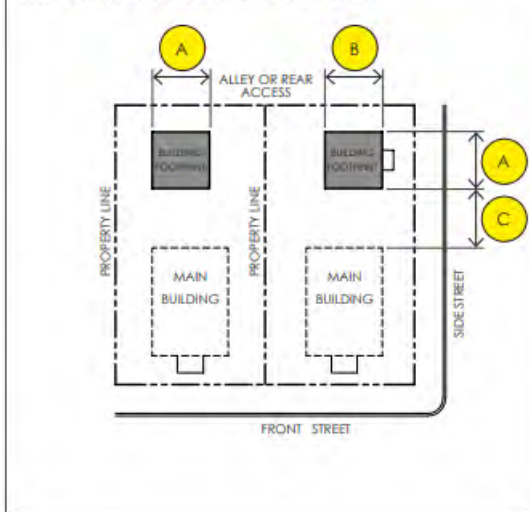
2006.18 CARRIAGE HOUSE BUILDING TYPE

3.0 BUILDING SIZE AND MASSING

Refer to Illustration 6.110 for Building Type size and massing graphic representation.

- A. Building width (side facing street): 36 feet maximum.
- B. Building depth: **30 feet minimum.**
- C. Separation from main building: 10 feet minimum. Carriage house may be connected to the main building with an uninhabitable space such as a breezeway.
- D. Carriage House Building Type is only allowed on lots where the main building has a residential use and is one of the following building types:
 1. Small Multi-plex Building Type
 2. Live / Work Building Type
 3. Rowhouse Building Type
 4. Duplex Building Type
 5. Detached House Building Type
- E. Maximum site coverage: Lot coverage of carriage house shall be included in the lot coverage requirements of the main building.
- F. Building footprint shall not exceed the footprint of the main building on the lot.

ILLUSTRATION 6.110 BUILDING SIZE AND MASS



Proposed Amendment

BUILDING TYPE STANDARDS

SECTION 2006

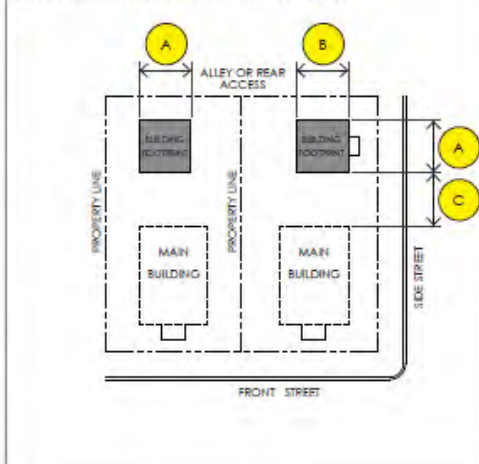
2006.18 CARRIAGE HOUSE BUILDING TYPE

3.0 BUILDING SIZE AND MASSING

Refer to Illustration 6.110 for Building Type size and massing graphic representation.

- A. Building width (side facing street): 36 feet maximum.
- B. Building depth: **20 feet minimum.**
- C. Separation from main building: 10 feet minimum. Carriage house may be connected to the main building with an uninhabitable space such as a breezeway.
- D. Carriage House Building Type is only allowed on lots where the main building has a residential use and is one of the following building types:
 1. Small Multi-plex Building Type
 2. Live / Work Building Type
 3. Rowhouse Building Type
 4. Duplex Building Type
 5. Detached House Building Type
- E. Maximum site coverage: Lot coverage of carriage house shall be included in the lot coverage requirements of the main building.
- F. Building footprint shall not exceed the footprint of the main building on the lot.

ILLUSTRATION 6.110 BUILDING SIZE AND MASS



CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN

ORDINANCE NO. _____

An ordinance to amend the form based code section of the zoning ordinance to allow carriage houses with only a one-story minimum requirement and only a 20-foot depth requirement

THE CITY COMMISSION OF THE CITY OF MUSKEGON HEREBY ORDAINS:

Carriages houses shall be a minimum of one story and a maximum of two stories.

Carriage houses shall have a minimum depth of at least 20 feet.

This ordinance adopted:

Ayes: _____

Nayes: _____

Adoption Date: _____

Effective Date: _____

First Reading: _____

Second Reading: _____

CITY OF MUSKEGON

By: _____
Ann Meisch, MMC, City Clerk

CERTIFICATE

The undersigned, being the duly qualified clerk of the City of Muskegon, Muskegon County, Michigan, does hereby certify that the foregoing is a true and complete copy of an ordinance adopted by the City Commission of the City of Muskegon, at a regular meeting of the City Commission on the 11th day of April 2023, at which meeting a quorum was present and remained throughout, and that the original of said ordinance is on file in the records of the City of Muskegon. I further certify that the meeting was conducted and public notice was given pursuant to and in full compliance with the Michigan Zoning Enabling Act, Public Acts of Michigan No. 33 of 2006, and that minutes were kept and will be or have been made available as required thereby.

DATED: _____, 2022.

Ann Meisch, MMC

Clerk, City of Muskegon

Publish: Notice of Adoption to be published once within ten (10) days of final adoption.

CITY OF MUSKEGON

NOTICE OF ADOPTION

Please take notice that on April 11, 2023, the City Commission of the City of Muskegon adopted an ordinance to allow carriage houses with only a one-story minimum requirement and only a 20-foot depth requirement.

Copies of the ordinance may be viewed and purchased at reasonable cost at the Office of the City Clerk in the City Hall, 933 Terrace Street, Muskegon, Michigan, during regular business hours.

This ordinance amendment is effective ten days from the date of this publication.

Published _____, 2023.

CITY OF MUSKEGON

By _____

Ann Meisch, MMC

City Clerk

PUBLISH ONCE WITHIN TEN (10) DAYS OF FINAL PASSAGE.

Account No. 101-80400-5354

WATCH MUSKEGON

Agenda Item Review Form Muskegon City Commission

Commission Meeting Date: April 25, 2023	Title: Public Hearing Brownfield Plan Amendment, The Meadows at Harbor 31, Harbor 31 LLC
Submitted By: Contessa Alexander	Department: Development Services
Brief Summary: Harbor 31 LLC has submitted a Brownfield Plan Amendment for the Meadows at Harbor 31 Redevelopment Project - a residential development on 2.5 acres located at 177 Viridian Drive along the south shore of Muskegon Lake.	
Detailed Summary & Background: The Harbor 31 project is a 31-acre mixed use development that will include 155 market-rate apartments and townhouses, as well as a hotel, retail and office space, marina, boat sales rentals, and senior living. The Meadows at Harbor 31 is located on 2.5-acres along Muskegon Lake. The proposed redevelopment activities will include a 21 two-story multi-family dupe style residential homes with surrounding grass lawn areas, sidewalks and roadways creating a walkable community that provides access to Muskegon Lake, greenspace areas in downtown Muskegon. Sustainable development concepts are proposed throughout the project including green building techniques and low-impact development and stormwater management. The Total private investment, not including property acquisition, is approximately \$7MM. Development is expected to begin this fall through 2024. Staff comments: • The Meadows at Harbor 31 is the third brownfield plan amendment for Harbor 31 LLC which includes Trilogy and Viridian Shores. • The original property has been utilized for industrial use which has resulted in a widespread of contamination across the property. The developer is in the process of completing a phase ESA and will complete a BEA in the near future. The property is considered an eligible property as defined by act 381 due to the known soil contamination. • The plan includes a total eligible activity costs of \$530,700 which includes department specific activities- \$50,700, due care activities- \$400,000, contingency (15%)- \$60,000, brownfield plan amendment/ act 381 work plan preparation- \$15,000, and brownfield plan amendment implementation- \$5,000. • The total cost for the local only MSF Non-Environmental Eligible activities is \$1,430,435 which includes a contingency of 15% and 2.5% interest. The total Developer EGLE and local only MSF eligible activities costs is \$1,961,135.	

WATCH MUSKEGON

- Additional eligible fees include the local only City of Muskegon eligible activities with a total cost of \$644,586.
- The 2023 taxable value of the eligible property is \$136,500. After completion of the development, the taxable value is estimated at \$2,800,000. This Plan Amendment assumes a 1% annual increase in the taxable value of the eligible property. Initial capture is anticipated to begin in 2026 (after the sunset of the Smart Zone tax abatement for the property).
- Capture of tax increment revenues for Developer reimbursement is anticipated to commence in 2026 and end in 2045, a total of 22 years. This Plan Amendment assumes approximately three years of additional capture of tax increment revenues (following Developer reimbursement) for deposit into a Local Brownfield Revolving Fund, if available.
- The Brownfield Redevelopment Authority approved and signed the resolution for the BPA on April 11, 2023.

Goal/Focus Area/Action Item Addressed:

Focus Area: improved access to the waterfront, blight cleanup, progress toward completion of ongoing economic development projects.

Amount Requested: N/A

Amount Budgeted: N/A

Fund(s) or Account(s): N/A

Fund(s) or Account(s): N/A

Recommended Motion: Motion to close the public hearing and to approve the resolution for the Brownfield Plan Amendment, for The Meadows at Harbor 31 authorizing the Mayor and City Clerk to sign.

Approvals:

Guest(s) Invited / Presenting

Immediate Division Head ☒ Information Technology ☐
Other Division Heads ☒ Communication ☒
Legal Review ☐

Yes ☒
No ☐

For City Clerk Use Only:

Commission Action:

RESOLUTION APPROVING THE BROWNFIELD PLAN AMENDMENT

Harbor 31 LLC (170 Viridian Drive)

The Meadows at Harbor 31

County of Muskegon, Michigan

2023- April 25

Minutes of a Regular Meeting of the City Commission of the City of Muskegon, County of Muskegon, Michigan (the "City"), held in the City Commission Chambers on the 25th day of April, 2023 at 5:30 p.m., prevailing Eastern Time.

PRESENT:

ABSENT:

The following preamble and resolution were offered by _____ and supported by _____.

WHEREAS, in accordance with the provisions of Act 381, Public Acts of Michigan, 1996, as amended ("Act 381"), the City of Muskegon Brownfield Redevelopment Authority (the "Authority") has prepared and approved a Brownfield Plan Amendment; and

WHEREAS, the Authority has forwarded the Brownfield Plan Amendment, to the City Commission requesting its approval of the Brownfield Plan Amendment; and

NOW, THEREFORE, BE IT RESOLVED THAT:

1. That the Brownfield Plan constitutes a public purpose under Act 381.
2. That the Brownfield Plan meets all the requirements of Section 13(1) of Act 381.
3. That the proposed method of financing the costs of the eligible activities, as identified in the Brownfield Plan and defined in Act 381, is feasible and the Authority has the authority to arrange the financing.
4. That the costs of the eligible activities proposed in the Brownfield Plan are reasonable and necessary to carry out the purposes of Act 381.

5. That the amount of captured taxable value estimated to result from the adoption of the Brownfield Plan is reasonable.
6. That the Brownfield Plan in the form presented is approved and is effective immediately.
7. That all resolutions or parts of resolutions in conflict herewith shall be and the same are hereby rescinded.

Be it Further Resolved that the Mayor and City Clerk are hereby authorized to execute all documents necessary or appropriate to implement the provisions of the Brownfield Plan.

AYES:

NAYS:

ABSENT:

RESOLUTION DECLARED APPROVED.

Ann Marie Meisch, City Clerk

Kenneth D. Johnson, Mayor

I hereby certify that the foregoing is a true and complete copy of a resolution adopted by the City Commission of the City of Muskegon, County of Muskegon, State of Michigan, at a regular meeting held on April 25, 2023 and that said meeting was conducted and public notice of said meeting was given pursuant to and in full compliance with the Open Meetings Act, being Act 267, Public Acts of Michigan, 1976, as amended, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.

Ann Marie Meisch, City Clerk

**City of Muskegon
Brownfield Redevelopment Authority
County of Muskegon, State of Michigan**

RESOLUTION APPROVING BROWNFIELD PLAN AMENDMENT

The Meadows at Harbor 31 (170 Viridian Drive)

Minutes of a regular meeting of the Board of the City of Muskegon Brownfield Redevelopment Authority, County of Muskegon, State of Michigan, held on the 11th day of April 2023 at 10:30 a.m., prevailing Eastern Time.

PRESENT: Members: B. Tarrant, K. Reid, Mc. Kleaveland, H. Sytsema, J. Wallace, Jr., M. Johnson, Sr, M. Bottomley, B. Hastings, J. Moore, J. Riegler, J. Seyferth

ABSENT: Members: S. Black, D. Pollock

The following preamble and resolution were offered by Member M. Kleaveland and supported by Member H. Sytsema:

WHEREAS, a Brownfield Plan has been adopted pursuant to Act 381, Public Acts of Michigan, 1996, as amended ("Act 381"), a copy of which is on file with the Secretary of the City of Muskegon Brownfield Redevelopment Authority (the "Authority"); and

WHEREAS, the Authority is authorized to approve amendments to the Brownfield Plan and recommends the Amendment to add eligible properties within the Meadows at Harbor 31 for approval to the City of Muskegon, County of Muskegon, State of Michigan (the "City").

NOW, THEREFORE, BE IT RESOLVED AS FOLLOWS:

1. Approval of Brownfield Plan. The Board hereby adopts and approves the Brownfield Plan Amendment for the Meadows at Harbor 31 and recommends the approval of the Brownfield Plan Amendments by the Muskegon City Commission.
2. Public Hearing. The Board hereby requests city personnel to provide a notice of Public Hearing on the proposed Brownfield Plan Amendments, and further requests that

such hearing notice be provided to all taxing jurisdictions. Notice of the time and place of the hearing shall be given pursuant to Act 267, Public Acts of Michigan, 1976, as amended ("Open Meetings Act").

3. Deliver Resolution and Brownfield Plan to City. The Chair of the Authority is directed to deliver a certified copy of this resolution and the Brownfield Plan Amendments to the City Clerk.

4. Disclaimer. By adoption of this resolution and approval of the Brownfield Plan Amendments, the Authority assumes no obligation or liability to the owner, developer or lessor of the Eligible Property for any loss or damage that may result to such persons from the adoption of this resolution and Brownfield Plan Amendments.

5. Work Plan Transmittal. The Chair of the Authority shall be authorized to transmit to the Michigan Strategic Fund, the Michigan Economic Development Corporation and/or the Michigan Department of Environmental Quality, on behalf of the Authority, a final Act 381 Work Plan that has been reviewed and approved by the Authority.

6. Repealer. All resolutions and parts of resolution in conflict with the provisions of this resolution are hereby repealed or amended to the extent of such conflict.

AYES: Members: B. Tarrant, Mc. Kleaveland, H. Sytsema, J. Wallace, Jr., M. Johnson, Sr, M. Bottomley, B. Hastings, J. Moore, J. Riegler, J. Seyferth

NAYS: K. Reid

RESOLUTION DECLARED ADOPTED.



Martha Bottomley, Chair
City of Muskegon Brownfield Redevelopment Authority

I hereby certify that the foregoing is a true and complete copy of a resolution adopted by the Board of the City of Muskegon Brownfield Redevelopment Authority, County of Muskegon, State of Michigan, at a regular meeting held on April 11, 2023, and that said meeting was conducted and public notice of said meeting was given pursuant to and in full compliance with the Open Meetings Act, being Act 267, Public Acts of Michigan, 1976, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.



Martha Bottomley, Chair
City of Muskegon Brownfield Redevelopment Authority

**City of Muskegon
Brownfield Redevelopment Authority**

**Brownfield Plan Amendment for the
The Meadows at Harbor 31
170 Viridian Drive
Muskegon, Michigan**

Approved by the City of Muskegon Brownfield Redevelopment Authority

Approved by the City of Muskegon Board of Commissioners

Prepared with the assistance of:

Fishbeck

1515 Arboretum Drive SE

Grand Rapids, Michigan 49546

616-464-3876

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Attachment B Conceptual Renderings

Attachment C Environmental Data Tables and Map

Attachment D Reimbursement Agreement

1.0 Introduction

The City of Muskegon Brownfield Redevelopment Authority (the “Authority” or MBRA) was established by the City of Muskegon pursuant to the Brownfield Redevelopment Financing Act, Michigan Public Act 381 of 1996, as amended (“Act 381”). The primary purpose of Act 381 is to encourage the redevelopment of eligible property by providing economic development incentives through tax increment financing for certain eligible properties.

This Brownfield Plan Amendment (“Plan Amendment”) serves as an amendment to the City of Muskegon’s existing Brownfield Plan, allowing the inclusion of the eligible property described in Sections 1.1 and 1.2 below. Incorporation of eligible property into the City’s Brownfield Plan permits the use of tax increment financing to reimburse The Meadows at Harbor 31, LLC (“Developer”) for the cost of eligible activities required to redevelop the eligible property. See Attachment A for copies of Plan Amendment resolutions.

1.1 Proposed Redevelopment and Future Use for the Eligible Property

The Developer is proposing to redevelop a portion of the former Continental Motors industrial site located at 170 Viridian Drive, Muskegon, Michigan (the “Property”). Proposed redevelopment activities include the construction of 21 two-story multi-family duplex style residential homes with surrounding grass lawn areas, sidewalks and roadways (the “Project”). The Project will create a walkable community that provides access to Muskegon Lake, greenspace areas, and downtown Muskegon. Sustainable development concepts are proposed throughout the Project including green building techniques and low-impact development stormwater management. Total private investment, not including property acquisition, is approximately \$7,000,000. Project renderings are provided in Attachment B.

The development is expected to start in Fall 2023 and continue through 2024.

1.2 Eligible Property Information

The 2.51-acre Property is located in downtown Muskegon along the south shore of Muskegon Lake. The Property has been historically utilized for industrial purposes dating back to the 1800s. Based on historical environmental investigations conducted over the past 25 years, these past industrial uses have resulted in widespread contamination across the Property. Known contaminants in the soil with concentrations exceeding Michigan Department of Environment, Great Lakes, and Energy (EGLE) Part 201 Generic Residential Cleanup Criteria (GRCC) include benzo(a)pyrene, fluoranthene, naphthalene, phenanthrene, arsenic, cadmium, chromium (total), copper, lead, selenium, zinc, and nickel.

The Developer is not a liable party and is in the process of completing a Phase I ESA and will be completing a Baseline Environmental Assessment (BEA) in accordance with Part 201 of the Natural Resources and Environmental Protection Act, 1995 PA 451, as amended (NREPA) associated with the anticipated purchase in Spring 2023.

Given the known soil contamination, the Property is a “facility” pursuant to Part 201 of NREPA. As such, it is considered an “eligible property” as defined by the Michigan Redevelopment Financing Act, Act 381 of 1996.

Maps depicting the location and layout of the Property are attached as Figures 1 and 2. Historic environmental data tables and associated sample location maps are provided in Attachment C.

2.0 Information Required by Section 13(2) of the Statute

2.1 Description of Costs to Be Paid for With Tax Increment Revenues

Act 381 provides pre-approval for certain activities that have been conducted at the Property. Additional activities require BRA approval for reimbursement from local, school operating, and state education taxes. Tax increment revenues will be used to reimburse the Developer for the following eligible activities.

The tables below provide an eligible activity cost summary for the Project.

Summary of Eligible Activity Costs	
EGLE Eligible Activities	Estimated Cost
<u>Department Specific Activities</u>	
Site Assessment and BEA Activities	\$5,000
Due Care Planning	\$30,000
Documentation of Due Care Compliance	\$12,000
Health and Safety Plan/Soil Management Plan	\$3,700
<u>Due Care</u>	
Volatilization to Indoor Air Exposure Pathway Mitigation	\$350,000
Due Care Assessment Sampling	\$50,000
EGLE Eligible Activities Sub-Total	\$450,700
Contingency (15%)	\$60,000
Brownfield Plan Amendment/Act 381 Work Plan Preparation	\$15,000
Brownfield Plan Amendment Implementation	\$5,000
EGLE ELIGIBLE ACTIVITIES TOTAL COST	\$530,700

Summary of Eligible Activity Costs	
Local Only MSF Non-Environmental Eligible Activities	Estimated Cost
Public Infrastructure Improvement (Sub-Total)	\$685,000
<i>Water Main</i>	\$170,000
<i>Sanitary Sewer</i>	\$115,000
<i>Storm Sewer</i>	\$200,000
<i>Public Roads/Sidewalks</i>	\$200,000
Site Preparation (Sub-Total)	\$280,000
<i>Clearing and Grubbing</i>	\$20,000
<i>Geotechnical Engineering & Investigation</i>	\$10,000
<i>Grading and Land Balancing</i>	\$150,000
<i>Engineered Fill Import and Placement</i>	\$100,000
Local only MSF Eligible Activities Sub-Total	\$965,000
Contingency (15%)	\$144,750
Interest (2.5%)*	\$320,685
LOCAL ONLY MSF ELIGIBLE ACTIVITIES TOTAL COST	\$1,430,435

*Interest is calculated yearly based on eligible activity costs accrued

Total Developer EGLE and local only MSF eligible activities costs is \$1,961,135.

Additional Eligible Activities	
City of Muskegon BRA Administration Fee	\$110,000
City of Muskegon BRA Local Brownfield Revolving Fund	\$534,586
LOCAL ONLY CITY OF MUSKEGON ELIGIBLE ACTIVITIES TOTAL COST	\$644,586

2.2 Summary of Eligible Activities

Eligible activities as defined by Act 381 and included in this Plan Amendment consist of the following:

Pre-Approved Department Specific Activities: These activities are permitted to occur prior to Plan Amendment approval. Preparation of a Phase I ESA, BEA, and due care documents are necessary to protect the new Property owner/Developer from liability for environmental contamination. Additional due care assessment and/or planning activities are anticipated, including but not limited to the preparation of a soil management plan and health and safety plan. Pre-approved activities can be reimbursed from state school and local tax increment revenues.

Due Care Activities: Due care activities will include additional investigative sampling and implementation of vapor intrusion mitigation systems, as applicable, to prevent unacceptable exposures to potential indoor air inhalation

concerns. Due care costs will include environmental consultant oversight and management. It is anticipated that an EGLE Act 381 Work Plan will be pursued, and upon approval, these costs will be reimbursed with school and local tax increment revenues.

Public Infrastructure Improvements: Infrastructure improvements include water, storm and sanitary sewer main upgrades, and the construction of new roads and sidewalks. Costs will include oversight, management, and professional fees associated with these activities.

Site Preparation: Site preparation is expected to include clearing and grubbing, geotechnical engineering, grading, land-balancing, and engineered fill import and placement. Costs will include oversight, management, and professional fees associated with these activities.

Contingency: A 15% is included for all eligible activities not already completed to accommodate unexpected conditions encountered during the project.

Plan Amendment and Act 381 Work Plan (if necessary) Preparation: This Plan Amendment was required for authorization of reimbursement to the Developer from tax increment revenues under Public Act 381 of 1996, as amended. It is anticipated that an Act 381 Work Plan will be prepared in the future to allow for the capture of state taxes for reimbursement of due care activities.

Interest: 2.5% interest is included for all accrued and unreimbursed eligible activity on a yearly basis.

2.3 Estimate of Captured Taxable Value and Tax Increment Revenues

For the purposes of this Plan Amendment, the taxable value base year is 2023. The 2023 taxable value of the eligible property is \$136,500. After completion of the development, the taxable value is estimated at \$2,800,000. This Plan Amendment assumes a 1% annual increase in the taxable value of the eligible property. Initial capture is anticipated to begin in 2026 (after the sunset of the Smart Zone tax abatement for the property).

The estimated captured taxable value for the redevelopment by year and in aggregate for each taxing jurisdiction is depicted in tabular form (Table 1: Tax Increment Revenue Capture). Actual taxable values and tax increment revenues may vary year to year based on economic and market conditions, tax incentives, building additions, and property improvements, among other factors. The Plan also includes a flat fee of \$5,000 of the local tax increment for administrative and operating expenses of the City of Muskegon Brownfield Redevelopment Authority.

A summary of the estimated reimbursement schedule by year and in aggregate is presented as Table 2: Tax Increment Revenue Reimbursement Allocation.

2.4 Method of Financing and Description of Advances Made by the Municipality

The cost of the eligible activities included in this Plan Amendment will be paid for by the Developer. The Developer will seek reimbursement for eligible activity costs through the capture of available local and state (as applicable) tax increment revenues as permitted by Act 381. Refer to Attachment D for a copy of the Reimbursement Agreement.

2.5 Maximum Amount of Note or Bonded Indebtedness

Bonds will not be issued for this Project.

2.6 Duration of Brownfield Plan

Capture of tax increment revenues for Developer reimbursement is anticipated to commence in 2026 and end in 2045, a total of 22 years. This Plan Amendment assumes approximately three years of additional capture of tax

increment revenues (following Developer reimbursement) for deposit into a Local Brownfield Revolving Fund, if available.

2.7 Estimated Impact of Tax Increment Financing on Revenues of Taxing Jurisdiction

The estimated amount of tax increment revenues to be captured for this redevelopment from each taxing jurisdiction by year and in aggregate is presented in Tables 1 and 2.

2.8 Legal Description, Property Map, Statement of Qualifying Characteristics and Personal Property

The Property subject to this plan consists of one parcel that is approximately 2.51 acres in size and is located at 170 Viridian Drive in the City of Muskegon, Michigan. The parcel ID for Property is 61-24-607-000-0004-00. A map showing eligible property dimensions is attached in Figure 2. The legal description is as follows:

170 Viridian Drive

CITY OF MUSKEGON MUSKEGON LAKESHORE SMARTZONE UNIT D FIFTH AMEND TO MASTER DEED L/P 4292/128 SUBJ TO ELECTRIC ESMT REC L/P 3591/578 SUBJ TO ELECTRIC EASEMENT RECORD'D L/P 3630/646 SUBJ TO DRAIN & ACCESS ESMT REC L/P 4311/311

The Property is located in the City of Muskegon (the "City"), a qualified local governmental unit pursuant to Act 381. Contamination on the Property in soil above generic residential cleanup criteria indicates that the Property meets the definition of a "facility" as defined by Part 201 of the NREPA (1994 PA 451). As such, the Property is an "eligible property" under Act 381. Facility verification is included in Attachment C. This Brownfield Plan does intend to capture tax increment revenues associated with personal property tax, if available.

2.9 Estimates of Residents and Displacement of Individuals/Families

No residents or families will be displaced because of the Project.

2.10 Plan for Relocation of Displaced Persons

Not applicable.

2.11 Provisions for Relocation Costs

Not applicable.

2.12 Strategy for Compliance with Michigan's Relocation Assistance Law

Not applicable.

2.13 Other Material that the Authority or Governing Body Considers Pertinent

The Project will significantly improve the Muskegon Lake shoreline through the revitalization of Property once used for industrial purposes. The new multi-family units are part of a larger developer that will increase the City's tax base, bring new permanent residences to the City of Muskegon, create new jobs, and increase the local workforce.

Figure 1

Location Map

Muskegon West, Michigan 7.5 Minute Quadrangle Maps
(Published 2019)



CONTOUR INTERVAL 10 FEET
Site Boundaries Shown are Approximate

Topographic Map

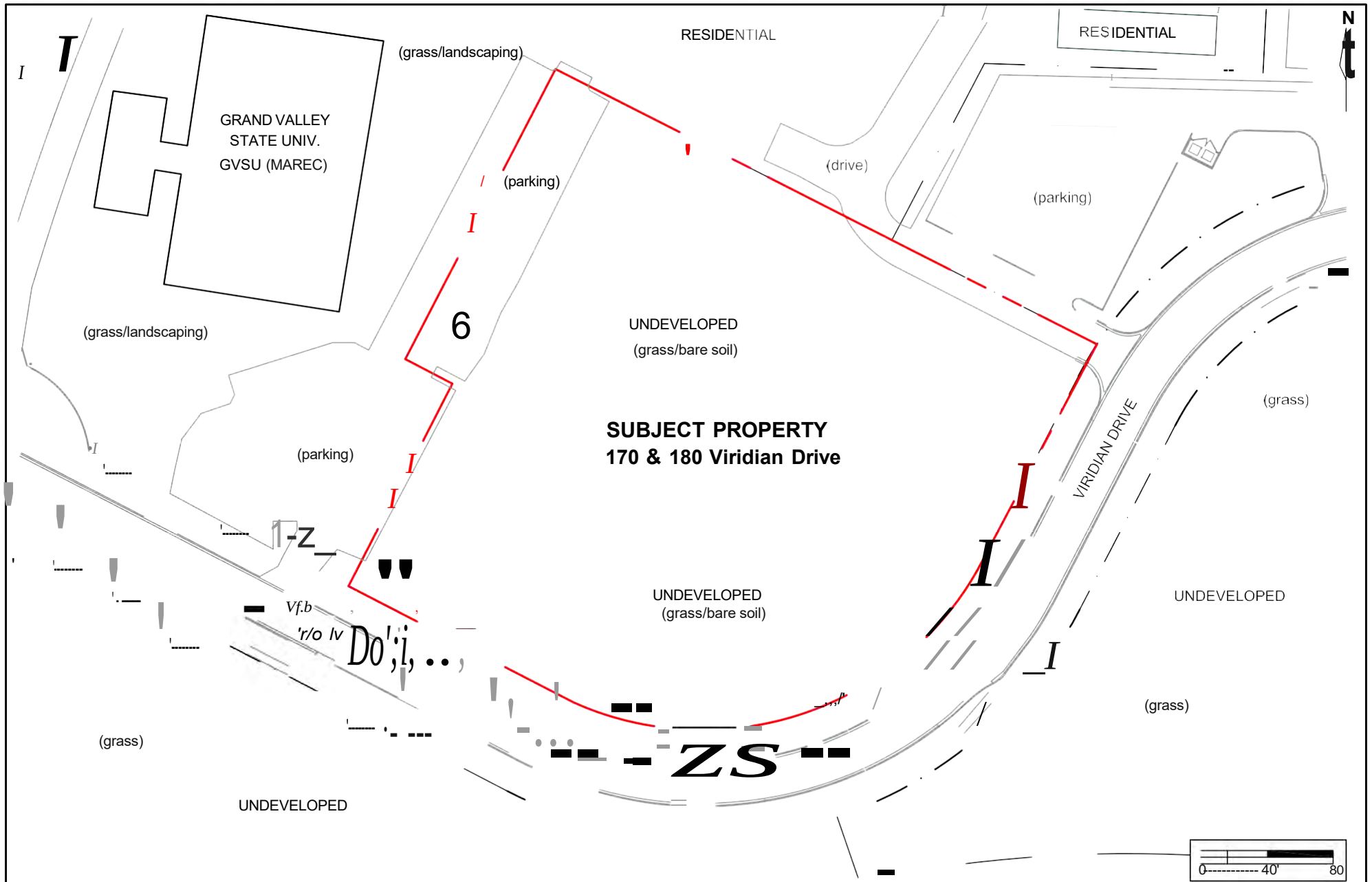
Undeveloped Residential Property
170 & 180 Viridian Drive
Muskegon, Muskegon County, Michigan 49440
SES Project No.: 2023-0137

Figure 1



Figure 2

Site Layout Map



TITLE SITE MAP The Meadows at Harbor 31	LEGEND - - - - - APPROXIMATE SITE BOUNDARY /::_ MONITORING WELL (destroyed)	PROJECT 20230137	
LOCATION Undeveloped Residential Property 170 and 180 Viridian Drive Muskegon, Muskegon County, Michigan		SCALE 1"=80'	DATE 3/30/23
		DRAWN amh	CHECKED
		MODIFIED amh	FIGURE 2

Table 1

Tax Increment Revenue Capture

Table 1 - Estimate of Total Incremental Taxes Available for Capture
Meadows at Harbor 31, Muskegon, Muskegon County, Michigan

Estimated Taxable Value (TV) Increase Rate: 1.0%													
Plan Year	0	1	2	3	4	5	6	7	8	9	10	11	
Calendar Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Base Taxable Value	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500
Estimated New TV	\$ -	\$ 1,400,000	\$ 2,800,000	\$ 2,828,000	\$ 2,856,280	\$ 2,884,843	\$ 2,913,691	\$ 2,942,828	\$ 2,972,256	\$ 3,001,979	\$ 3,031,999	\$ 3,062,319	
Incremental Difference (New TV - Base TV) ¹	\$ -	\$ 1,263,500	\$ 2,663,500	\$ 2,691,500	\$ 2,719,780	\$ 2,748,343	\$ 2,777,191	\$ 2,806,328	\$ 2,835,756	\$ 2,865,479	\$ 2,895,499	\$ 2,925,819	
School Capture													
Millage Rate													
State Education Tax (SET)	6.00000	\$ -	\$ 7,581	\$ 15,981	\$ 16,149	\$ 16,319	\$ 16,490	\$ 16,663	\$ 16,838	\$ 17,015	\$ 17,193	\$ 17,373	\$ 17,555
School Operating Tax	17.37540	\$ -	\$ 21,954	\$ 46,279	\$ 46,766	\$ 47,257	\$ 47,754	\$ 48,255	\$ 48,761	\$ 49,272	\$ 49,789	\$ 50,310	\$ 50,837
School Total	23.3754	\$ -	\$ 29,535	\$ 62,260	\$ 62,915	\$ 63,576	\$ 64,244	\$ 64,918	\$ 65,599	\$ 66,287	\$ 66,982	\$ 67,683	\$ 68,392
Local Capture													
Millage Rate													
County Museum	0.31690	\$ -	\$ 400	\$ 844	\$ 853	\$ 862	\$ 871	\$ 880	\$ 889	\$ 899	\$ 908	\$ 918	\$ 927
County Veterans	0.07390	\$ -	\$ 93	\$ 197	\$ 199	\$ 201	\$ 203	\$ 205	\$ 207	\$ 210	\$ 212	\$ 214	\$ 216
Senior Citizens Services	0.49210	\$ -	\$ 622	\$ 1,311	\$ 1,324	\$ 1,338	\$ 1,352	\$ 1,367	\$ 1,381	\$ 1,395	\$ 1,410	\$ 1,425	\$ 1,440
Central Dispatch	0.29520	\$ -	\$ 373	\$ 786	\$ 795	\$ 803	\$ 811	\$ 820	\$ 828	\$ 837	\$ 846	\$ 855	\$ 864
Community College	2.16930	\$ -	\$ 2,741	\$ 5,778	\$ 5,839	\$ 5,900	\$ 5,962	\$ 6,025	\$ 6,088	\$ 6,152	\$ 6,216	\$ 6,281	\$ 6,347
M.A.I.S.D	4.67730	\$ -	\$ 5,910	\$ 12,458	\$ 12,589	\$ 12,721	\$ 12,855	\$ 12,990	\$ 13,126	\$ 13,264	\$ 13,403	\$ 13,543	\$ 13,685
City Operating	9.86070	\$ -	\$ 12,459	\$ 26,264	\$ 26,540	\$ 26,819	\$ 27,101	\$ 27,385	\$ 27,672	\$ 27,963	\$ 28,256	\$ 28,552	\$ 28,851
City Sanitation	2.93640	\$ -	\$ 3,710	\$ 7,821	\$ 7,903	\$ 7,986	\$ 8,070	\$ 8,155	\$ 8,241	\$ 8,327	\$ 8,414	\$ 8,502	\$ 8,591
Hackley Library	2.35160	\$ -	\$ 2,971	\$ 6,263	\$ 6,329	\$ 6,396	\$ 6,463	\$ 6,531	\$ 6,599	\$ 6,669	\$ 6,738	\$ 6,809	\$ 6,880
MPS Sinking	0.97120	\$ -	\$ 1,227	\$ 2,587	\$ 2,614	\$ 2,641	\$ 2,669	\$ 2,697	\$ 2,726	\$ 2,754	\$ 2,783	\$ 2,812	\$ 2,842
County Operating	5.60970	\$ -	\$ 7,088	\$ 14,941	\$ 15,099	\$ 15,257	\$ 15,417	\$ 15,579	\$ 15,743	\$ 15,908	\$ 16,074	\$ 16,243	\$ 16,413
Local Total	29.7543	\$ -	\$ 37,595	\$ 79,251	\$ 80,084	\$ 80,925	\$ 81,775	\$ 82,633	\$ 83,500	\$ 84,376	\$ 85,260	\$ 86,154	\$ 87,056
Non-Capturable Millages													
Millage Rate													
Community College Debt	0.34000	\$ -	\$ 430	\$ 906	\$ 915	\$ 925	\$ 934	\$ 944	\$ 954	\$ 964	\$ 974	\$ 984	\$ 995
Hackley Debt	0.49990	\$ -	\$ 632	\$ 1,331	\$ 1,345	\$ 1,360	\$ 1,374	\$ 1,388	\$ 1,403	\$ 1,418	\$ 1,432	\$ 1,447	\$ 1,463
MPS Debt - 2020	0.75000	\$ -	\$ 948	\$ 1,998	\$ 2,019	\$ 2,040	\$ 2,061	\$ 2,083	\$ 2,105	\$ 2,127	\$ 2,149	\$ 2,172	\$ 2,194
MPS Debt - 2021	7.25000	\$ -	\$ 9,160	\$ 19,310	\$ 19,513	\$ 19,718	\$ 19,925	\$ 20,135	\$ 20,346	\$ 20,559	\$ 20,775	\$ 20,992	\$ 21,212
Total Non-Capturable Taxes	8.8399	\$ -	\$ 11,169	\$ 23,545	\$ 23,793	\$ 24,043	\$ 24,295	\$ 24,550	\$ 24,808	\$ 25,068	\$ 25,331	\$ 25,596	\$ 25,864

¹Assumes 1% annual increase for inflation

Total Tax Increment Revenue (TIR) Available for Capture	\$ -	\$ -	\$ -	\$ 142,999	\$ 144,501	\$ 146,019	\$ 147,551	\$ 149,099	\$ 150,663	\$ 152,242	\$ 153,837	\$ 155,448	
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Note-

Tables Assumes Summer/Winter 2022 Millages

For the purpose of Table 1 the new taxable value is estimated based on 40% of a total overall investment of \$7,000,000 divided over the two years estimated for construction of the project

Due to the Lakeshore Smart Zone Tax Abatement, no local or state capture is eligible for 2024 and 2025

Table 1 - Estimate of Total Incremental Taxes Available for Capture
Meadows at Harbor 31, Muskegon, Muskegon County, Michigan

Estimated Taxable Value (TV) Increase Rate:

	Plan Year	12	13	14	15	16	17	18	19	20	21	22	23	24
Calendar Year		2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Base Taxable Value	\$	136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500	\$ 136,500
Estimated New TV	\$	3,092,942	\$ 3,123,871	\$ 3,155,110	\$ 3,186,661	\$ 3,218,528	\$ 3,250,713	\$ 3,283,220	\$ 3,316,052	\$ 3,349,213	\$ 3,382,705	\$ 3,416,532	\$ 3,450,697	\$ 3,485,204
Incremental Difference (New TV - Base TV) ¹	\$	2,956,442	\$ 2,987,371	\$ 3,018,610	\$ 3,050,161	\$ 3,082,028	\$ 3,114,213	\$ 3,146,720	\$ 3,179,552	\$ 3,212,713	\$ 3,246,205	\$ 3,280,032	\$ 3,314,197	\$ 3,348,704

School Capture	Millage Rate																										
State Education Tax (SET)	6.00000	\$	17,739	\$	17,924	\$	18,112	\$	18,301	\$	18,492	\$	18,685	\$	18,880	\$	19,077	\$	19,276	\$	19,477	\$	19,680	\$	19,885	\$	20,092
School Operating Tax	17.37540	\$	51,369	\$	51,907	\$	52,450	\$	52,998	\$	53,551	\$	54,111	\$	54,676	\$	55,246	\$	55,822	\$	56,404	\$	56,992	\$	57,586	\$	58,185
School Total	23.3754	\$	69,108	\$	69,831	\$	70,561	\$	71,299	\$	72,044	\$	72,796	\$	73,556	\$	74,323	\$	75,098	\$	75,881	\$	76,672	\$	77,471	\$	78,277

Local Capture	Millage Rate																										
County Museum	0.31690	\$	937	\$	947	\$	957	\$	967	\$	977	\$	987	\$	997	\$	1,008	\$	1,018	\$	1,029	\$	1,039	\$	1,050	\$	1,061
County Veterans	0.07390	\$	218	\$	221	\$	223	\$	225	\$	228	\$	230	\$	233	\$	235	\$	237	\$	240	\$	242	\$	245	\$	247
Senior Citizens Services	0.49210	\$	1,455	\$	1,470	\$	1,485	\$	1,501	\$	1,517	\$	1,533	\$	1,549	\$	1,565	\$	1,581	\$	1,597	\$	1,614	\$	1,631	\$	1,648
Central Dispatch	0.29520	\$	873	\$	882	\$	891	\$	900	\$	910	\$	919	\$	929	\$	939	\$	948	\$	958	\$	968	\$	978	\$	989
Community College	2.16930	\$	6,413	\$	6,481	\$	6,548	\$	6,617	\$	6,686	\$	6,756	\$	6,826	\$	6,897	\$	6,969	\$	7,042	\$	7,115	\$	7,189	\$	7,264
M.A.I.S.D	4.67730	\$	13,828	\$	13,973	\$	14,119	\$	14,267	\$	14,416	\$	14,566	\$	14,718	\$	14,872	\$	15,027	\$	15,183	\$	15,342	\$	15,501	\$	15,663
City Operating	9.86070	\$	29,153	\$	29,458	\$	29,766	\$	30,077	\$	30,391	\$	30,708	\$	31,029	\$	31,353	\$	31,680	\$	32,010	\$	32,343	\$	32,680	\$	33,021
City Sanitation	2.93640	\$	8,681	\$	8,772	\$	8,864	\$	8,956	\$	9,050	\$	9,145	\$	9,240	\$	9,336	\$	9,434	\$	9,532	\$	9,631	\$	9,732	\$	9,833
Hackley Library	2.35160	\$	6,952	\$	7,025	\$	7,099	\$	7,173	\$	7,248	\$	7,323	\$	7,400	\$	7,477	\$	7,555	\$	7,634	\$	7,713	\$	7,794	\$	7,875
MPS Sinking	0.97120	\$	2,871	\$	2,901	\$	2,932	\$	2,962	\$	2,993	\$	3,025	\$	3,056	\$	3,088	\$	3,120	\$	3,153	\$	3,186	\$	3,219	\$	3,252
County Operating	5.60970	\$	16,585	\$	16,758	\$	16,933	\$	17,110	\$	17,289	\$	17,470	\$	17,652	\$	17,836	\$	18,022	\$	18,210	\$	18,400	\$	18,592	\$	18,785
Local Total	29.7543	\$	87,967	\$	88,887	\$	89,817	\$	90,755	\$	91,704	\$	92,661	\$	93,628	\$	94,605	\$	95,592	\$	96,589	\$	97,595	\$	98,612	\$	99,638

Non-Capturable Millages	Millage Rate																										
Community College Debt	0.34000	\$	1,005	\$	1,016	\$	1,026	\$	1,037	\$	1,048	\$	1,059	\$	1,070	\$	1,081	\$	1,092	\$	1,104	\$	1,115	\$	1,127	\$	1,139
Hackley Debt	0.49990	\$	1,478	\$	1,493	\$	1,509	\$	1,525	\$	1,541	\$	1,557	\$	1,573	\$	1,589	\$	1,606	\$	1,623	\$	1,640	\$	1,657	\$	1,674
MPS Debt - 2020	0.75000	\$	2,217	\$	2,241	\$	2,264	\$	2,288	\$	2,312	\$	2,336	\$	2,360	\$	2,385	\$	2,410	\$	2,435	\$	2,460	\$	2,486	\$	2,512
MPS Debt - 2021	7.25000	\$	21,434	\$	21,658	\$	21,885	\$	22,114	\$	22,345	\$	22,578	\$	22,814	\$	23,052	\$	23,292	\$	23,535	\$	23,780	\$	24,028	\$	24,278
Total Non-Capturable Taxes	8.8399	\$	26,135	\$	26,408	\$	26,684	\$	26,963	\$	27,245	\$	27,529	\$	27,817	\$	28,107	\$	28,400	\$	28,696	\$	28,995	\$	29,297	\$	29,602

¹Assumes 1% annual increase for inflation

Total Tax Increment Revenue (TIR) Available for Capture	\$	157,075	\$ 158,718	\$ 160,378	\$ 162,054	\$ 163,747	\$ 165,457	\$ 167,184	\$ 168,929	\$ 170,690	\$ 172,470	\$ 174,267	\$ 176,082	\$ 177,916
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Note-

Tables Assumes Summer/Winter 2022 Millages

For the purpose of Table 1 the new taxable value is estimated based on 40% of a total overall investment of \$7,000,000 divided over the two years estimated for construction of the project

Due to the Lakeshore Smart Zone Tax Abatement, no local or state capture is eligible for 2024 and 2025

Table 1 - Estimate of Total Incremental Taxes Available for Capture
Meadows at Harbor 31, Muskegon, Muskegon County, Michigan

Estimated Taxable Value (TV) Increase Rate:				
	Plan Year	25	26	TOTAL
	Calendar Year	2048	2049	
	Base Taxable Value	\$ 136,500	\$ 136,500	\$ -
	Estimated New TV	\$ 3,520,056	\$ 3,555,257	\$ -
	Incremental Difference (New TV - Base TV) ¹	\$ 3,383,556	\$ 3,418,757	\$ -
School Capture				
	Millage Rate			
State Education Tax (SET)	6.00000	\$ 20,301	\$ 20,513	\$ 461,592
School Operating Tax	17.37540	\$ 58,791	\$ 59,402	\$ 1,336,724
School Total	23.3754	\$ 79,092	\$ 79,915	\$ 1,798,315
Local Capture				
	Millage Rate			
County Museum	0.31690	\$ 1,072	\$ 1,083	\$ 24,380
County Veterans	0.07390	\$ 250	\$ 253	\$ 5,685
Senior Citizens Services	0.49210	\$ 1,665	\$ 1,682	\$ 37,858
Central Dispatch	0.29520	\$ 999	\$ 1,009	\$ 22,710
Community College	2.16930	\$ 7,340	\$ 7,416	\$ 166,888
M.A.I.S.D	4.67730	\$ 15,826	\$ 15,991	\$ 359,834
City Operating	9.86070	\$ 33,364	\$ 33,711	\$ 758,603
City Sanitation	2.93640	\$ 9,935	\$ 10,039	\$ 225,903
Hackley Library	2.35160	\$ 7,957	\$ 8,040	\$ 180,913
MPS Sinking	0.97120	\$ 3,286	\$ 3,320	\$ 74,716
County Operating	5.60970	\$ 18,981	\$ 19,178	\$ 431,565
Local Total	29.7543	\$ 100,675	\$ 101,723	\$ 2,289,057
Non-Capturable Millages				
	Millage Rate			
Community College Debt	0.34000	\$ 1,150	\$ 1,162	\$ 26,157
Hackley Debt	0.49990	\$ 1,691	\$ 1,709	\$ 38,458
MPS Debt - 2020	0.75000	\$ 2,538	\$ 2,564	\$ 57,699
MPS Debt - 2021	7.25000	\$ 24,531	\$ 24,786	\$ 557,757
Total Non-Capturable Taxes	8.8399	\$ 29,910	\$ 30,221	\$ 680,071
¹ Assumes 1% annual increase for inflation				
Total Tax Increment Revenue (TIR) Available for Capture		\$ 179,767	\$ 181,638	\$ 3,878,732

Note-

Tables Assumes Summer/Winter 2022 Millages

For the purpose of Table 1 the new taxable value is estimated based on 40% of a total overall investment of \$7,000,000 divided over the two years estimated for construction of the project

Due to the Lakeshore Smart Zone Tax Abatement, no local or state capture is eligible for 2024 and 2025

Table 2

Tax Increment Revenue Reimbursement Allocation

Table 2 - Estimate of Total Incremental Taxes Available for Reimbursement Meadows at Harbor 31, Muskegon, Muskegon County, Michigan

Developer Maximum Reimbursement		School & Local Taxes	Estimated Years of Capture: 24 years (including 3 years of LBRF capture)															
State	\$ 337,802																	
Local	1,623,333																	
TOTAL	\$ 1,961,135																	
EGL	\$ 337,802																	
MSF	N/A																	
Year of Plan			0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Total State Incremental Revenue		\$	2023	-	\$ 29,535	\$ 62,260	\$ 62,915	\$ 63,576	\$ 64,244	\$ 64,918	\$ 65,599	\$ 66,287	\$ 66,982	\$ 67,683	\$ 68,392	\$ 69,108	\$ 69,831	\$ -
State Brownfield Redevelopment Fund (50% of SET)		\$	-	\$ -	-	\$ -	\$ 8,075	\$ 8,159	\$ 8,245	\$ 8,332	\$ 8,419	\$ 8,507	\$ 8,596	\$ 8,686	\$ 8,777	\$ 8,869	\$ 8,962	\$ -
Lakeshore SmartZone Tax Abatement		\$	-	\$ 29,535	\$ 62,260	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	\$ -
State TIR Available for Reimbursement		\$	-	\$ -	\$ -	\$ 54,840	\$ 55,417	\$ 55,999	\$ 56,586	\$ 57,180	\$ 57,780	\$ 58,385	\$ 58,997	\$ 59,615	\$ 60,239	\$ 60,869	\$ -	\$ -
Total Local Incremental Revenue		\$	-	\$ 37,595	\$ 79,251	\$ 80,084	\$ 80,925	\$ 81,775	\$ 82,633	\$ 83,500	\$ 84,376	\$ 85,260	\$ 86,154	\$ 87,056	\$ 87,967	\$ 88,887	\$ 89,817	\$ 89,817
BRA Administrative Fee		\$	-	\$ -	-	\$ -	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000
Lakeshore SmartZoneTax Abatement		\$	-	\$ 37,595	\$ 79,251	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	\$ -
Local TIR Available for Reimbursement		\$	-	\$ -	\$ -	\$ 75,084	\$ 75,925	\$ 76,775	\$ 77,633	\$ 78,500	\$ 79,376	\$ 80,260	\$ 81,154	\$ 82,056	\$ 82,967	\$ 83,887	\$ 84,817	\$ 84,817
Total State & Local TIR Available		\$	-	\$ -	\$ -	\$ 129,924	\$ 131,342	\$ 132,774	\$ 134,220	\$ 135,680	\$ 137,156	\$ 138,646	\$ 140,150	\$ 141,670	\$ 143,206	\$ 144,756	\$ 84,817	\$ 84,817
DEVELOPER			Beginning Balance															
Developer Reimbursement Balance	\$	-	\$	-	\$ 1,640,450	\$ 1,640,450	\$ 1,640,450	\$ 1,537,331	\$ 1,432,515	\$ 1,325,971	\$ 1,217,666	\$ 1,107,567	\$ 994,672	\$ 937,273	\$ 877,522	\$ 815,352	\$ 750,695	\$ 683,478
Environmental Eligible Costs	\$	530,700	\$	-	\$ 530,700	\$ 530,700	\$ 530,700	\$ 438,318	\$ 344,939	\$ 250,552	\$ 155,149	\$ 58,719	\$	-	\$ -	\$ -	\$ -	\$ -
State Tax Reimbursement	\$	337,802	\$	-	\$ -	\$ -	\$ 54,840	\$ 55,417	\$ 55,999	\$ 56,586	\$ 57,180	\$ 57,780	\$	-	\$ -	\$ -	\$ -	\$ -
Local Tax Reimbursement	\$	192,898	\$	-	\$ -	\$ -	\$ 37,542	\$ 37,963	\$ 38,388	\$ 38,817	\$ 39,250	\$ 940	\$	-	\$ -	\$ -	\$ -	\$ -
Total Environmental Reimbursement Balance			\$	-	\$ 530,700	\$ 530,700	\$ 438,318	\$ 344,939	\$ 250,552	\$ 155,149	\$ 58,719	\$	-	\$ -	\$ -	\$ -	\$ -	\$ -
Local Only Eligible Costs	\$	1,464,805	\$	-	\$ 1,109,750	\$ 1,109,750	\$ 1,109,750	\$ 1,099,013	\$ 1,087,577	\$ 1,075,418	\$ 1,062,516	\$ 1,048,848	\$ 994,672	\$ 937,273	\$ 877,522	\$ 815,352	\$ 750,695	\$ 683,478
Local Tax Reimbursement	\$	1,430,435	\$	-	\$ -	\$ -	\$ 37,542	\$ 37,963	\$ 38,388	\$ 38,817	\$ 39,250	\$ 78,436	\$ 80,260	\$ 81,154	\$ 82,056	\$ 82,967	\$ 83,887	\$ 84,817
Interest (2.5%)	\$	320,685	\$	-	\$ -	\$ -	\$ 26,805	\$ 26,526	\$ 26,230	\$ 25,915	\$ 25,582	\$ 24,260	\$ 22,860	\$ 21,403	\$ 19,887	\$ 18,310	\$ 16,670	\$ 14,967
Total Non Environmental Reimbursement Balance				\$ 1,109,750	\$ 1,109,750	\$ 1,099,013	\$ 1,087,577	\$ 1,075,418	\$ 1,062,516	\$ 1,048,848	\$ 994,672	\$ 937,273	\$ 877,522	\$ 815,352	\$ 750,695	\$ 683,478	\$ 613,628	
Total Annual Developer Reimbursement	\$	1,961,135	\$	-	\$ -	\$ -	\$ 129,924	\$ 131,342	\$ 132,774	\$ 134,220	\$ 135,680	\$ 137,155	\$ 80,260	\$ 81,154	\$ 82,056	\$ 82,967	\$ 83,887	\$ 84,817
LOCAL BROWNFIELD REVOLVING FUND																		
LBRF Deposits *																		
State Tax Capture		\$ 298,105	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 58,385	\$ 58,997	\$ 59,615	\$ 60,239	\$ 60,869	\$ -
Local Tax Capture		\$ 236,481	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total LBRF Capture		\$ 534,586	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

* Up to five years of capture for LBRF Deposits after eligible activities are reimbursed. May be taken from Local TIR only.

**Table 2 - Estimate of Total Incremental Taxes Available for Reimbursement
Meadows at Harbor 31, Muskegon, Muskegon County, Michigan**

												Estimated Developer Capture	\$	2,281,820
												BRA Administrative Fee	\$	110,000
												State Brownfield Redevelopment Fund	\$	93,629
												Local Brownfield Revolving Fund	\$	534,586

	15	16	17	18	19	20	21	22	23	24	
	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	TOTAL
Total State Incremental Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 821,330
State Brownfield Redevelopment Fund (50% of SET)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 93,629
Lakeshore SmartZone Tax Abatement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 91,795
State TIR Available for Reimbursement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 635,906
Total Local Incremental Revenue	\$ 90,755	\$ 91,704	\$ 92,661	\$ 93,628	\$ 94,605	\$ 95,592	\$ 96,589	\$ 97,595	\$ 98,612	\$ 99,638	\$ 2,086,659
BRA Administrative Fee	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 110,000
Lakeshore SmartZone Tax Abatement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 116,845
Local TIR Available for Reimbursement	\$ 85,755	\$ 86,704	\$ 87,661	\$ 88,628	\$ 89,605	\$ 90,592	\$ 91,589	\$ 92,595	\$ 93,612	\$ 94,638	\$ 1,859,813
Total State & Local TIR Available	\$ 85,755	\$ 86,704	\$ 87,661	\$ 88,628	\$ 89,605	\$ 90,592	\$ 91,589	\$ 92,595	\$ 93,612	\$ 94,638	\$ 2,495,720

DEVELOPER											
Developer Reimbursement Balance	\$ 613,628	\$ 541,069	\$ 465,725	\$ 387,515	\$ 306,359	\$ 222,173	\$ 134,871	\$ 44,364			
Environmental Eligible Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
State Tax Reimbursement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 337,802
Local Tax Reimbursement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 192,898
Total Environmental Reimbursement Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Local Only Eligible Costs	\$ 613,628	\$ 541,069	\$ 465,725	\$ 387,515	\$ 306,359	\$ 222,173	\$ 134,871	\$ 44,364	\$ -	\$ -	\$ -
Local Tax Reimbursement	\$ 85,755	\$ 86,704	\$ 87,661	\$ 88,628	\$ 89,605	\$ 90,592	\$ 91,589	\$ 44,364	\$ -	\$ -	\$ 1,430,435
Interest (2.5%)	\$ 13,197	\$ 11,359	\$ 9,452	\$ 7,472	\$ 5,419	\$ 3,290	\$ 1,082	\$ -	\$ -	\$ -	\$ 320,685
Total Non Environmental Reimbursement Balan	\$ 541,069	\$ 465,725	\$ 387,515	\$ 306,359	\$ 222,173	\$ 134,871	\$ 44,364	\$ -	\$ -	\$ -	\$ -
Total Annual Developer Reimbursement	\$ 85,755	\$ 86,704	\$ 87,661	\$ 88,628	\$ 89,605	\$ 90,592	\$ 91,589	\$ 44,364	\$ -	\$ -	\$ 1,961,135

LOCAL BROWNFIELD REVOLVING FUND											
LBRF Deposits *											
State Tax Capture	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 298,105
Local Tax Capture	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 48,231	\$ 93,612	\$ 94,638	\$ 236,481
Total LBRF Capture	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 534,586

* Up to five years of capture for LBRF Deposits after

Attachment A

Resolutions Approving the Brownfield Plan
Amendment

Attachment B

Conceptual Renderings



THE MEADOWS

12.21.2022



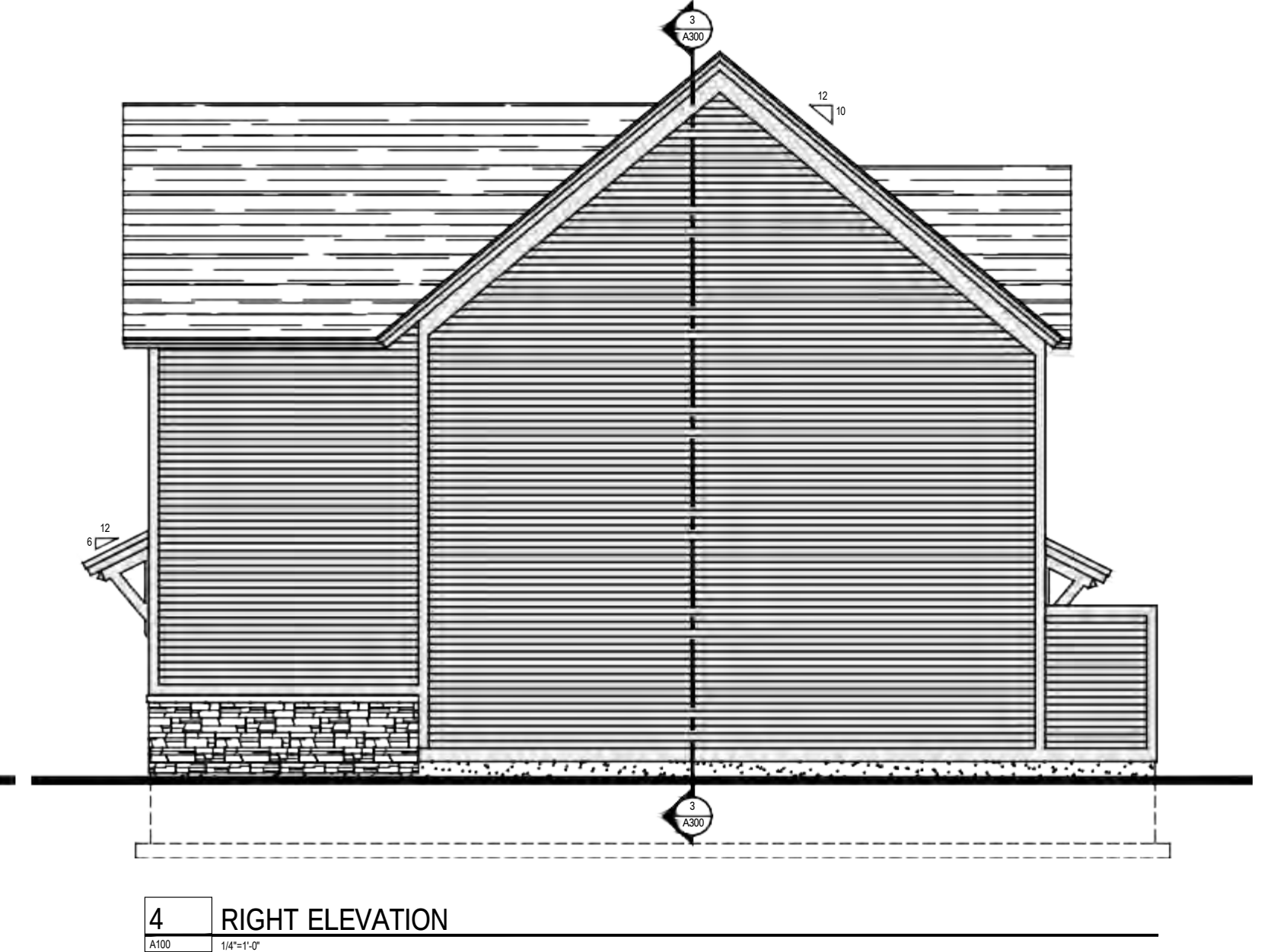
HARBOR 31
MUSKEGON, MICHIGAN



HENRICKSON
ARCHITECTURE + PLANNING



HENRICKSON
ARCHITECTURE + PLANNING
2325 Belmont Center Dr, Suite B
Belmont, Michigan 49306
ph: 616.458.5554



THE MEADOWS
HARBOR 31, MUSKOGEE

CONST.	• 10.10.22
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DRAWN BY:	• JOC
CHECKED:	• DSH
EXTERIOR ELEVATIONS	

PROJECT No. • 220705

A200



VIEW 2



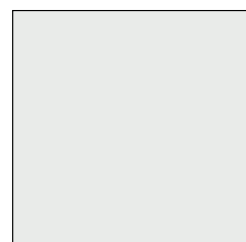
VIEW 1



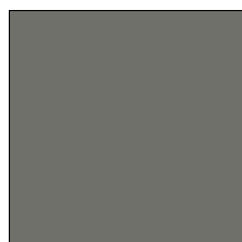
VIEW 3



VIEW 4



CERTAINEED
COLONIAL WHITE



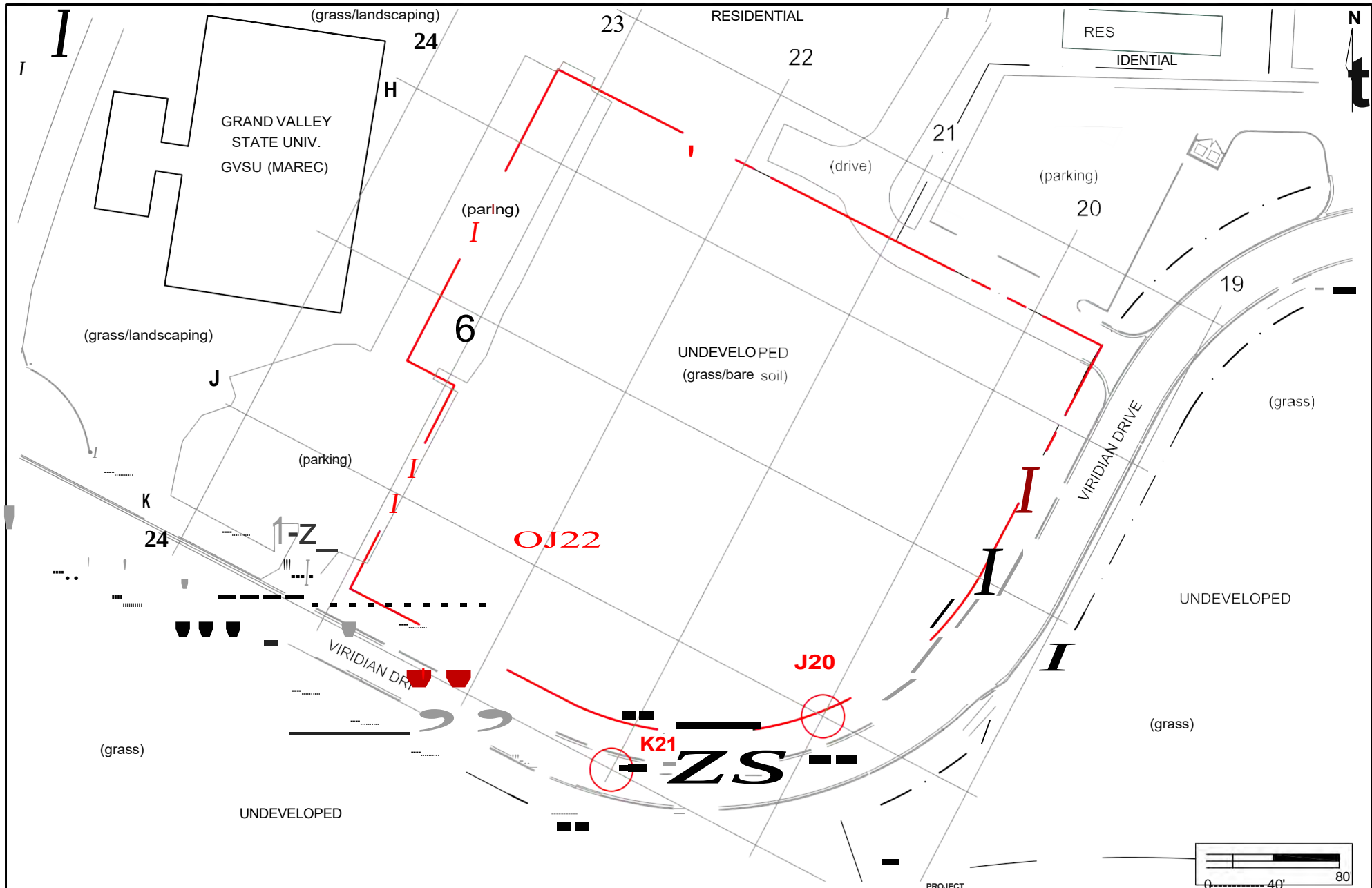
CERTAINEED
CHARCOAL GRAY



THE MEADOWS
HARBOR 31, MUSKEGON

Attachment C

Environmental Data Tables and Map



TITLE SITE MAP SOIL ANALYTICAL DATA EXCEEDING CRITERIA	LEGEND - - - - - APPROXIMATE SITE BOUNDARY /.../ MONITORING WELL (destroyed)
	0 VOCs/PNAs EXCEED RESIDENTIAL VIAP (SOIL) METALS/PNAs EXCEED RESIDENTIAL DIRECT CONTACT (SOIL)
LOCATION Undeveloped Residential Property 170 and 180 Viridian Drive Muskegon, Muskegon County, Michigan	

PROJECT 20230137	
SCALE 1"=80'	DATE 3/30/23
DRAWN amh	CHECKED amh
MODIFIED amh	FIGURE 3

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TABLE 1 (Page 1 of 2)
CLEANUP CRITERIA COMPARISON FOR SOILS
VOCs, PNAs, and METALS
UNIT D - HARBOR 31 MEADOWS
EXISTING LOTS D/E

DRAFT DRAFT DRAFT
DUE CARE PLANNING

Volatile Organic Compounds (VOCs), Polynuclear Aromatic Hydrocarbons (PNAs), and Metals (µg/Kg)			Benzene	Ethylbenzene	Toluene	Xylenes	Other VOCs	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	Other PNAs
Chemical Abstract Service Number (CAS#)			71432	100414	108883	1330207	Various	83329	120127	56553	50328	205992	191242	207089	218019	53703	206440	86737	193395	91576	91203	85018	129000	Various
Unit D - Harbor 31 Meadows (Existing Lots D/E) (RESIDENTIAL)			Unit D - Harbor 31 Meadows (Existing Lots D/E) (RESIDENTIAL)					Unit D - Harbor 31 Meadows (Existing Lots D/E) (RESIDENTIAL)																
Sample ID	Sample Date	Sample Depth (bgs)	VOCs					PNAs																
Approx. Grid H20-K23																								
H-20	1995	1-1.5'	< 10	< 10	< 10	< 30	NA																	
H-21	1994	1-3'																						
H-21	1995	2-4'						< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	-	< 330	< 330	< 330	< 330
H-22	1994	1-3'	< 10	< 10	< 10	< 30	NA	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	-	< 330	< 330	< 330	< 330
I-20	1995	1.5-3'	< 10	< 10	< 10	< 30	NA	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	-	< 330	< 330	5,400	< 330
I-20	1995	2.0'																						
I-22	1995	0.75-1.75'	< 10	< 10	< 10	< 30	NA	< 330	< 330	< 330	< 330	< 330	< 330	< 330	360	< 330	1,100	620	< 330	-	< 330	< 330	990	< 330
I-22	1995	2.0'	< 10	< 10	< 10	< 30	NA																	
J-20	1995	2.5'	< 10	< 10	< 10	< 30	NA	ND	680	3,200	<u>2,500</u>	1,800	1,100	910	3,000	ND	4,100	620	430	-	<u>3,300</u>	1,600	12,000	
J-22	1994	1-3'	< 10	< 10	< 10	< 30	NA	1,100	1,300	1,800	750	1,000	ND	430	1,600	ND	<u>6,200</u>	1,100	ND	-	<u>410</u>	<u>4,800</u>	6,100	ND
K-21 (Viridian ROW)	1994	1.75-2.25'	< 10	< 10	< 10	< 30	NA	1,100	3,200	8,400	<u>7,300</u>	7,600	4,300	3,200	8,300	1,200	<u>17,000</u>	1,000	3,800	-	<u>700</u>	<u>14,000</u>	17,000	ND
K-23 (Viridian ROW)	1994	1-3'	< 10	< 10	47	59	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	< 900	ND	2,100	ND
EGLE Residential Vapor Intrusion Screening Levels (VIAP 2020)			EGLE Residential Vapor Intrusion Screening Levels (VIAP 2020)					EGLE Residential Vapor Intrusion Screening Levels (VIAP 2020)																
			1.7	12	3,700	280	-	2.00E+05	1.30E+07	1.60E+05	-	-	-	-	-	-	-	4.70E+05	-	1,700	67	1,700	2.50E+07	-
EGLE Part 201 Cleanup Criteria, December 30, 2013; Revised June 25, 2018.			EGLE Part 201 Cleanup Criteria, December 30, 2013; Revised June 25, 2018.																					
			Residential (µg/Kg)					Residential (µg/Kg)																
Statewide Default Background Levels			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Drinking Water Protection (DWP)			100	1,500	16,000	5,600	Various	3.00E+05	41,000	NLL	NLL	NLL	NLL	NLL	NLL	NLL	7.30E+05	3.90E+05	NLL	57,000	35,000	56,000	4.80E+05	Various
Groundwater Surface Water Interface Protection (GSIP)			4,000 (X)	360	5,400	980	Various	8,700	ID	NLL	NLL	NLL	NLL	NLL	NLL	NLL	<u>5,500</u>	5,300	NLL	4,200	<u>730</u>	<u>2,100</u>	ID	Various
Soil Volatilization to Indoor Air Inhalation (SVII)			1,600	87,000	3.3E+05	6.30E+06	Various	1.90E+08	1.0E+9 (D)	NLV	NLV	ID	NLV	NLV	ID	NLV	1.0E+9 (D)	5.80E+08	NLV	2.70E+06	2.50E+05	2.80E+06	1.0E+9 (D)	Various
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)			13,000	7.20E+05	2.80E+06	4.60E+07	Various	8.10E+07	1.40E+09	NLV	NLV	ID	NLV	NLV	ID	NLV	7.40E+08	1.30E+08	NLV	1.50E+06	3.00E+05	1.60E+05	6.50E+08	Various
Ambient Air Particulate Soil Inhalation (PSI)			3.80E+08	1.00E+10	2.70E+10	2.90E+11	Various	1.40E+10	6.70E+10	ID	1.50E+06	ID	8.00E+08	ID	ID	ID	9.30E+09	9.30E+09	ID	6.70E+08	2.00E+08	6.70E+06	6.70E+09	Various
Direct Contact (DC)			1.80E+05	2.2E+7 (C)	5.0E+07	4.10E+08	Various	4.10E+07	2.30E+08	20,000	<u>2,000</u>	20,000	2.50E+06	2.00E+05	2.00E+06	2,000	4.60E+07	2.70E+07	20,000	8.10E+06	1.60E+07	1.60E+06	2.90E+07	Various
Soil Saturation Concentration Screening Levels (Csat)			4.00E+05	1.40E+05	250,000	150,000	Various	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Various

ND Not Detected above laboratory Method Detection Limit (MDL) or Minimum Quantitative Level (MQL)

NA / - Not analyzed or Not Available

NLV / NLL Not Likely to Volatilize / Not Likely to Leach

bgs Below Grade Surface (feet)

Identified Part 201 Cleanup Criteria exceeded

Exceeds EGLE VIAP Screening Levels

TABLE 1 (Page 2 of 2)
CLEANUP CRITERIA COMPARISON FOR SOILS
VOCs, PNAs, and METALS
UNIT D - HARBOR 31 MEADOWS
EXISTING LOTS D/E

DRAFT DRAFT DRAFT
DUE CARE PLANNING

Volatile Organic Compounds (VOCs), Polynuclear Aromatic Hydrocarbons (PNAs), and Metals (µg/Kg)			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Selenium	Silver	Zinc	Beryllium	Antimony	Nickel	PCBs
Chemical Abstract Service Number (CAS#)			7440382	7440439	16065831	7440508	7439921	7439976	7782492	7440224	7440666	7440417	7440360	7440020	1336363
Unit D - Harbor 31 Meadows (Existing Lots D/E) (RESIDENTIAL)			Unit D - Harbor 31 Meadows (Existing Lots D/E) (RESIDENTIAL)												
Sample ID	Sample Date	Sample Depth (bgs)	Metals												PCBs
Approx. Grid H20-K23															
H-20	1995	1-1.5'													
H-21	1994	1-3'						< 100							
H-21	1995	2-4'	710	ND	1,200	ND	960	< 100	ND	-	7,300	ND	ND	2,600	
H-22	1994	1-3'	510	54	7,500	3,700	1,300	< 100	ND	-	8,800	ND	ND	17,000	
I-20	1995	1.5-3'													
I-20	1995	2.0'						< 100							
I-22	1995	0.75-1.75'													ND
I-22	1995	2.0'	560	ND	2,000	ND	940	< 100	ND	-	7,100	ND	ND	10,000	
J-20	1995	2.5'	3,900	8,900	8,600	27,000	19,000	< 100	680	ND	170,000	ND	ND	14,000	ND
J-22	1994	1-3'	13,000	590	17,000	1,700,000	390,000	< 100	1,900	-	360,000	ND	3,900	55,000	
K-21 (Viridian ROW)	1994	1.75-2.25'	5,400	370	8,400	56,000	31,000	< 100	620	ND	67,000	ND	ND	530,000	ND
K-23 (Viridian ROW)	1994	1-3'	2,100	ND	2,200	37,000	8,400	< 100	ND	-	16,000	ND	ND	4,600	
EGLE Residential Vapor Intrusion Screening Levels (VIAP 2020)			EGLE Residential Vapor Intrusion Screening Levels (VIAP 2020)												
			-	-	-	-	-	22 (M)	-	-	-	-	-	-	
			EGLE Part 201 Cleanup Criteria, December 30, 2013; Revised June 25, 2018.												
			Residential (µg/Kg)												
Statewide Default Background Levels			5,800	1,200	18,000 (total)	32,000	21,000	130	410	1,000	47,000	NA	NA	20,000	NA
Drinking Water Protection (DWP)			4,600	6,000	30,000	5.80E+06	7.00E+05	1,700	4,000	4,500	2,400,000	5.10E+04	4,300	51,000	NLL
Groundwater Surface Water Interface Protection (GSIP)			4,600	3,600 (G)	3,300	75,000 (G)	5.1E6 (G,X)	50 (M); 1.2	400	100 (M); 27	170,000 (G)	85,000 (G)	94,000 (X)	76,000 (G)	NLL
Soil Volatilization to Indoor Air Inhalation (SVII)			NLV	NLV	NLV	NLV	NLV	48,000	NLV	NLV	NLV	NLV	NLV	NLV	3.00E+6
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)			NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV				2.40E+5
Ambient Air Particulate Soil Inhalation (PSI)			7.20E+05	1.70E+06	2.60E+05	1.30E+08	1.00E+08	2.00E+07	1.30E+08	6.70E+06	ID				5.20E+6
Direct Contact (DC)			7,600	5.50E+05	2.50E+06	2.00E+07	4.00E+05	1.60E+05	2.60E+06	2.50E+06	170,000,000	4.10E+05	1.80E+05	4.00E+07	4,000
Soil Saturation Concentration Screening Levels (Csat)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

ND Not Detected above laboratory Method Detection Limit
(MDL) or Minimum Quantitative Level (MQL)
NA / - Not analyzed or Not Available
NLV / NLL Not Likely to Volatilize / Not Likely to Leach
bgs Below Grade Surface (feet)

Identified Part 201 Cleanup Criteria exceeded

Exceeds EGLE VIAP Screening Levels

TABLE 1 (Page 1 of 2)
CLEANUP CRITERIA COMPARISON FOR SOILS
VOCs, PNAs, and METALS
UNIT D - HARBOR 31 MEADOWS
EXISTING LOTS D/E

DRAFT DRAFT DRAFT
DUE CARE PLANNING

Volatile Organic Compounds (VOCs), Polynuclear Aromatic Hydrocarbons (PNAs), and Metals (µg/Kg)			Benzene	Ethylbenzene	Toluene	Xylenes	Other VOCs	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	Other PNAs
Chemical Abstract Service Number (CAS#)			71432	100414	108883	1330207	Various	83329	120127	56553	50328	205992	191242	207089	218019	53703	206440	86737	193395	91576	91203	85018	129000	Various
Unit D - Harbor 31 Meadows (Existing Lots D/E) (RESIDENTIAL)			Unit D - Harbor 31 Meadows (Existing Lots D/E) (RESIDENTIAL)					Unit D - Harbor 31 Meadows (Existing Lots D/E) (RESIDENTIAL)																
Sample ID	Sample Date	Sample Depth (bgs)	VOCs					PNAs																
Approx. Grid H20-K23																								
H-20	1995	1-1.5'	< 10	< 10	< 10	< 30	NA																	
H-21	1994	1-3'																						
H-21	1995	2-4'						< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	-	< 330	< 330	< 330	< 330
H-22	1994	1-3'	< 10	< 10	< 10	< 30	NA	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	-	< 330	< 330	< 330	< 330
I-20	1995	1.5-3'	< 10	< 10	< 10	< 30	NA	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	< 330	-	< 330	< 330	5,400	< 330
I-20	1995	2.0'																						
I-22	1995	0.75-1.75'	< 10	< 10	< 10	< 30	NA	< 330	< 330	< 330	< 330	< 330	< 330	< 330	360	< 330	1,100	620	< 330	-	< 330	< 330	990	< 330
I-22	1995	2.0'	< 10	< 10	< 10	< 30	NA																	
J-20	1995	2.5'	< 10	< 10	< 10	< 30	NA	ND	680	3,200	<u>2,500</u>	1,800	1,100	910	3,000	ND	4,100	620	430	-	<u>3,300</u>	1,600	12,000	
J-22	1994	1-3'	< 10	< 10	< 10	< 30	NA	1,100	1,300	1,800	750	1,000	ND	430	1,600	ND	<u>6,200</u>	1,100	ND	-	410	<u>4,800</u>	6,100	ND
K-21 (Viridian ROW)	1994	1.75-2.25'	< 10	< 10	< 10	< 30	NA	1,100	3,200	8,400	<u>7,300</u>	7,600	4,300	3,200	8,300	1,200	<u>17,000</u>	1,000	3,800	-	700	<u>14,000</u>	17,000	ND
K-23 (Viridian ROW)	1994	1-3'	< 10	< 10	47	59	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	< 900	ND	2,100	ND
EGLE Residential Vapor Intrusion Screening Levels (VIAP 2020)			EGLE Residential Vapor Intrusion Screening Levels (VIAP 2020)					EGLE Residential Vapor Intrusion Screening Levels (VIAP 2020)																
			1.7	12	3,700	280	-	2.00E+05	1.30E+07	1.60E+05	-	-	-	-	-	-	-	4.70E+05	-	1,700	67	1,700	2.50E+07	-
EGLE Part 201 Cleanup Criteria, December 30, 2013; Revised June 25, 2018.			EGLE Part 201 Cleanup Criteria, December 30, 2013; Revised June 25, 2018.																					
			Residential (µg/Kg)					Residential (µg/Kg)																
Statewide Default Background Levels			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Drinking Water Protection (DWP)			100	1,500	16,000	5,600	Various	3.00E+05	41,000	NLL	NLL	NLL	NLL	NLL	NLL	NLL	7.30E+05	3.90E+05	NLL	57,000	35,000	56,000	4.80E+05	Various
Groundwater Surface Water Interface Protection (GSIP)			4,000 (X)	360	5,400	980	Various	8,700	ID	NLL	NLL	NLL	NLL	NLL	NLL	NLL	<u>5,500</u>	5,300	NLL	4,200	<u>730</u>	<u>2,100</u>	ID	Various
Soil Volatilization to Indoor Air Inhalation (SVII)			1,600	87,000	3.3E+05	6.30E+06	Various	1.90E+08	1.0E+9 (D)	NLV	NLV	ID	NLV	NLV	ID	NLV	1.0E+9 (D)	5.80E+08	NLV	2.70E+06	2.50E+05	2.80E+06	1.0E+9 (D)	Various
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)			13,000	7.20E+05	2.80E+06	4.60E+07	Various	8.10E+07	1.40E+09	NLV	NLV	ID	NLV	NLV	ID	NLV	7.40E+08	1.30E+08	NLV	1.50E+06	3.00E+05	1.60E+05	6.50E+08	Various
Ambient Air Particulate Soil Inhalation (PSI)			3.80E+08	1.00E+10	2.70E+10	2.90E+11	Various	1.40E+10	6.70E+10	ID	1.50E+06	ID	8.00E+08	ID	ID	ID	9.30E+09	9.30E+09	ID	6.70E+08	2.00E+08	6.70E+06	6.70E+09	Various
Direct Contact (DC)			1.80E+05	2.2E+7 (C)	5.0E+07	4.10E+08	Various	4.10E+07	2.30E+08	20,000	<u>2,000</u>	20,000	2.50E+06	2.00E+05	2.00E+06	2,000	4.60E+07	2.70E+07	20,000	8.10E+06	1.60E+07	1.60E+06	2.90E+07	Various
Soil Saturation Concentration Screening Levels (Csat)			4.00E+05	1.40E+05	250,000	150,000	Various	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Various

ND Not Detected above laboratory Method Detection Limit (MDL) or Minimum Quantitative Level (MQL)

NA / - Not analyzed or Not Available

NLV / NLL Not Likely to Volatilize / Not Likely to Leach

bgs Below Grade Surface (feet)

Identified Part 201 Cleanup Criteria exceeded

Exceeds EGLE VIAP Screening Levels

TABLE 1 (Page 2 of 2)
CLEANUP CRITERIA COMPARISON FOR SOILS
VOCs, PNAs, and METALS
UNIT D - HARBOR 31 MEADOWS
EXISTING LOTS D/E

DRAFT DRAFT DRAFT
DUE CARE PLANNING

Volatile Organic Compounds (VOCs), Polynuclear Aromatic Hydrocarbons (PNAs), and Metals (µg/Kg)			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Selenium	Silver	Zinc	Beryllium	Antimony	Nickel	PCBs
Chemical Abstract Service Number (CAS#)			7440382	7440439	16065831	7440508	7439921	7439976	7782492	7440224	7440666	7440417	7440360	7440020	1336363
Unit D - Harbor 31 Meadows (Existing Lots D/E) (RESIDENTIAL)			Unit D - Harbor 31 Meadows (Existing Lots D/E) (RESIDENTIAL)												
Sample ID	Sample Date	Sample Depth (bgs)	Metals												PCBs
Approx. Grid H20-K23															
H-20	1995	1-1.5'													
H-21	1994	1-3'						< 100							
H-21	1995	2-4'	710	ND	1,200	ND	960	< 100	ND	-	7,300	ND	ND	2,600	
H-22	1994	1-3'	510	54	7,500	3,700	1,300	< 100	ND	-	8,800	ND	ND	17,000	
I-20	1995	1.5-3'													
I-20	1995	2.0'						< 100							
I-22	1995	0.75-1.75'													ND
I-22	1995	2.0'	560	ND	2,000	ND	940	< 100	ND	-	7,100	ND	ND	10,000	
J-20	1995	2.5'	3,900	8,900	8,600	27,000	19,000	< 100	680	ND	170,000	ND	ND	14,000	ND
J-22	1994	1-3'	13,000	590	17,000	1,700,000	390,000	< 100	1,900	-	360,000	ND	3,900	55,000	
K-21 (Viridian ROW)	1994	1.75-2.25'	5,400	370	8,400	56,000	31,000	< 100	620	ND	67,000	ND	ND	530,000	ND
K-23 (Viridian ROW)	1994	1-3'	2,100	ND	2,200	37,000	8,400	< 100	ND	-	16,000	ND	ND	4,600	
EGLE Residential Vapor Intrusion Screening Levels (VIAP 2020)			EGLE Residential Vapor Intrusion Screening Levels (VIAP 2020)												
			-	-	-	-	-	22 (M)	-	-	-	-	-	-	
			EGLE Part 201 Cleanup Criteria, December 30, 2013; Revised June 25, 2018.												
			Residential (µg/Kg)												
Statewide Default Background Levels			5,800	1,200	18,000 (total)	32,000	21,000	130	410	1,000	47,000	NA	NA	20,000	NA
Drinking Water Protection (DWP)			4,600	6,000	30,000	5.80E+06	7.00E+05	1,700	4,000	4,500	2,400,000	5.10E+04	4,300	51,000	NLL
Groundwater Surface Water Interface Protection (GSIP)			4,600	3,600 (G)	3,300	75,000 (G)	5.1E6 (G,X)	50 (M); 1.2	400	100 (M); 27	170,000 (G)	85,000 (G)	94,000 (X)	76,000 (G)	NLL
Soil Volatilization to Indoor Air Inhalation (SVII)			NLV	NLV	NLV	NLV	NLV	48,000	NLV	NLV	NLV	NLV	NLV	NLV	3.00E+6
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)			NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV				2.40E+5
Ambient Air Particulate Soil Inhalation (PSI)			7.20E+05	1.70E+06	2.60E+05	1.30E+08	1.00E+08	2.00E+07	1.30E+08	6.70E+06	ID				5.20E+6
Direct Contact (DC)			7,600	5.50E+05	2.50E+06	2.00E+07	4.00E+05	1.60E+05	2.60E+06	2.50E+06	170,000,000	4.10E+05	1.80E+05	4.00E+07	4,000
Soil Saturation Concentration Screening Levels (Csat)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

ND Not Detected above laboratory Method Detection Limit
(MDL) or Minimum Quantitative Level (MQL)
NA / - Not analyzed or Not Available
NLV / NLL Not Likely to Volatilize / Not Likely to Leach
bgs Below Grade Surface (feet)

Identified Part 201 Cleanup Criteria exceeded

Exceeds EGLE VIAP Screening Levels

Attachment D

Reimbursement Agreement

WATCH MUSKEGON

Agenda Item Review Form

Muskegon City Commission

Commission Meeting Date: April 25, 2023		Title: 2023 Consolidated Annual Action Plan	
Submitted By: Sharonda Carson		Department: CNS	
Brief Summary: The Annual Action Plan is available on our website for citizen review and comment period of 30 days from April 16 -May 16, 2023. A public Hearing is another opportunity to comment about the Federal CDBG and HOME program activities performed during the fiscal year 2023 (July 1, 2023 - June 30, 2024). Click on the link to view the Annual Action Plan https://muskegon-mi.gov/2023-annual-action-plan/			
Detailed Summary & Background: <i>Citizen input is a necessary process of program activities for the CDBG/HOME annual allocations. The 2023 Annual Action Plan comment period is another opportunity to comment on the programs and activities proposed during the Hearing.</i>			
Goal/Focus Area/Action Item Addressed: <i>Refer to the 2022-2027 Long Term Goals document.</i>			
Amount Requested:		Amount Budgeted:	
		<i>Contact Finance if your item does not fit into the current budget.</i>	
Fund(s) or Account(s):		Fund(s) or Account(s):	
Recommended Motion: To conduct a Public Hearing for the 2023 Annual Action Plan review.			
Approvals: <i>Get approval from division head at a minimum prior to sending to the Clerk.</i> Immediate Division Head ☐ Information Technology ☐ Other Division Heads ☐ Communication ☐ Legal Review ☐		Guest(s) Invited / Presenting Yes ☐ No ☐	
For City Clerk Use Only: Commission Action:			

Executive Summary

AP-05 Executive Summary - 24 CFR 91.200(c), 91.220(b)

1. Introduction

The City of Muskegon is the lead agency for a unique partnership with other HUD grantee municipalities: Muskegon Heights and Norton Shores. Our Regional Consolidated Plan is used to encompass communities that use CDBG funds for specific National Objectives to accomplish the goals set by each city Annual Action Plan for the next 3 years. The city of Muskegon is the only recipient of the HOME Partnership funds however, the HOME ARP funds are not specifically limited to our city limits.

Our Action plan for 2023 will be supported with CDBG, HOME and HOME ARP funds through the department of Community and Neighborhood Services of the City of Muskegon from the Department of Housing and Urban Development. The City also utilizes other funding secured through other funding to leverage funding for our community that may expand outside of the City of Muskegon to include surrounding communities. These other grants include, Medicaid Chip funding to support Lead Abatement, Senior millage to assist low income seniors with health and safety concerns and Healthy Homes which also provides health and safety home repairs to families who are either elderly or have children in their home under 5 years of age. Leveraging these dollars helps to offset cost or provide more assistance to families who need multiple repairs.

*The activities and budget for the Annual Action Plan is proposed and subject to change due to funding amounts for the new year and commission approval.

2. Summarize the objectives and outcomes identified in the Plan

This could be a restatement of items or a table listed elsewhere in the plan or a reference to another location. It may also contain any essential items from the housing and homeless needs assessment, the housing market analysis or the strategic plan.

This could be a restatement of items or a table listed elsewhere in the plan or a reference to another location. It may also contain any essential items from the housing and homeless needs assessment, the housing market analysis or the strategic plan.

Our Annual Action plan objectives and outcomes for 2022 are staple programs that produce results that benefit community members through a variety of activities;

Community Development Block Grant (C D B G):

The programs that are proposed utilizing this funding are the following:

Priority Home Repair- \$200,000 to provides emergency home repairs in the form of Foundation repair, electrical updates, plumbing, roofing and more. The services also promote healthier and safer living environments for City residents, creates opportunity for the elderly population to potentially age at home and prevents homeowners from losing insurance policies due to not being able to afford the upkeep of the home.

Residential Facade- \$70,000 will be committed for vinyl siding replacement on homes with wood siding that has peeling and chipped paint.

Fire Station Bond- \$236,759.58 has been committed for the upcoming year to secure repayment for the fire station bond. The Fire Station has served as a great asset in the community and access to emergency services has improved significantly.

Service delivery- \$60,000 will be committed to serving the public in office, answering phones, making copies etc.

Admin- \$182,578.80 will be committed to salaries.

the remaining \$163,559.62 will be committed to subrecipients and youth services.

HOME:

Rental Rehabilitation- \$52,342.00 will be committed to 50/50 match program utilized to encourage landlords to update home and repair items that would improve the living conditions for tenants.

Homebuyers Assistance- Down payment Assistance provided to low income families who desire to become homeowners. Funding is determined by the sale of housing developed through the Rehabilitation Program.

Rehabilitation Program- \$202,395.00 will be committed to renovations on dilapidated housing to improve housing stock for potential low income families who would like to become homeowners.

3. Evaluation of past performance

This is an evaluation of past performance that helped lead the grantee to choose its goals or projects.

There is currently a huge need for home repair services as reflected in the summary of accomplishments for the past year. There was a total of 149 households served through our programs and 18 of which were homebuyers and there continues to be a huge waitlist of families waiting for services in every program offered. Completion of a housing study conducted throughout the entire county has concluded that there is not enough affordable housing throw-out the area for renters or homeowners. All of our efforts will be committed to improving these conditions with a mean to offer many types of housing that is considered affordable, safe and appropriate for our community.

4. Summary of Citizen Participation Process and consultation process

Summary from citizen participation section of plan.

The Citizen District Counsel was consulted to assist the city with selecting budget for the upcoming year, determining necessary activities to continue and subrecipients to receive funding for the upcoming year. The group was given all eligible applications, process, regulations and ranking sheet to create informed consent for agencies to fund.

5. Summary of public comments

This could be a brief narrative summary or reference an attached document from the Citizen Participation section of the Con Plan.

Will update when comments are received.

6. Summary of comments or views not accepted and the reasons for not accepting them

We will not accept vulgar and unproductive comments that demean staff or others.

7. Summary

The purpose of the 2023 Annual Action Plan is to propose a plan of where federal funds will be invested and how these activities can impact the lives of citizens in our community. We will continue to shift efforts toward housing, assisting those experiencing homelessness and veterans. We plan to be more intentional by creating versions of applications for our non-English speaking families as well as ensure that there is a translator available for public hearings and other public forums.

PR-05 Lead & Responsible Agencies - 91.200(b)

1. Agency/entity responsible for preparing/administering the Consolidated Plan

The following are the agencies/entities responsible for preparing the Consolidated Plan and those responsible for administration of each grant program and funding source.

Agency Role	Name	Department/Agency
CDBG Administrator		City of Muskegon
HOME Administrator	MUSKEGON	City of Muskegon

Table 1 – Responsible Agencies

Narrative

The cities of Muskegon, Muskegon Heights and Norton Shores collaborated and prepared the Consolidated Plan as a Regional Plan to provide Strategic Goals. Each municipality has its own Annual Plan that represents their community's focus and plan of action through programs. The Muskegon county region is made of grantees with a concentrated vision and mission that will assist families with services that meet specific needs of our cities.

There is a collective effort to create programs that meet the needs of our citizens.

Consolidated Plan Public Contact Information

AP-10 Consultation - 91.100, 91.200(b), 91.215(l)

1. Introduction

The city is required to consult with the community regarding funding and execution to ensure funding is properly disbursed throughout the community has contributed valuable input. We ensure that our Citizen's District Council is reflective of our community by ensuring that there is representation of all areas on present on the board. The council is responsible for understanding the language, national objectives and goals of funding administered through CDBG and HOME in order to make an informed advisory committee. We offer a 30 day comment period and 2 hearing to generate feedback on present, current and future programing and activities are reflective of the needs of the community.

Provide a concise summary of the jurisdiction's activities to enhance coordination between public and assisted housing providers and private and governmental health, mental health and service agencies (91.215(l)).

Our jurisdiction is multi-partnered and coordinated through the Continuum of Care's contribution to hold a meeting of service agencies associated with public health, mental and other resource providers. The city participates on several boards and meeting circuits that add financial and social benefit to our citizens. The level of coordination is monthly, quarterly and sometimes annually.

Describe coordination with the Continuum of Care and efforts to address the needs of homeless persons (particularly chronically homeless individuals and families, families with children, veterans, and unaccompanied youth) and persons at risk of homelessness.

The city of Muskegon and our partnering grantees are represented with the Continuum of Care (CoC) for Muskegon county. We have a coordinated effort to support the needs of homeless and to create ways to avoid homelessness in our community by identifying those *most* at risk. We meet quarterly and as often as needed to provide resources and information that address the needs of these vulnerable categories. COC's steering counsel has representation for homeless families, veterans, seniors, disability agencies, public health and housing authorities. Together the group collaborates to ensure that all persons has adequate access to services that align with needs. Although, some individuals are not directly served through our agencies, our partnership and collaboration ensure that none is left behind.

Describe consultation with the Continuum(s) of Care that serves the jurisdiction's area in determining how to allocate ESG funds, develop performance standards for and evaluate outcomes of projects and activities assisted by ESG funds, and develop funding, policies and procedures for the operation and administration of HMIS

The Continuum of Care has secured a steering council that meets monthly and reviews ESG funding requirements and ensures that any Agency receiving ESG funding has the ability to adhere to guidelines

and carry out functions outlined and applications The COC also sets policies and procedures into practice and ensure that all aspects of funding is tracked and reported on and inputted into HMIS on a regular basis.

2. Agencies, groups, organizations and others who participated in the process and consultations

Table 2 – Agencies, groups, organizations who participated

1	Agency/Group/Organization	Muskegon County Health Department
	Agency/Group/Organization Type	Housing Services-Children Services-homeless Health Agency Other government - County Other government - Local Planning organization
	What section of the Plan was addressed by Consultation?	Public Housing Needs Homeless Needs - Chronically homeless Homeless Needs - Families with children Lead-based Paint Strategy
	Briefly describe how the Agency/Group/Organization was consulted. What are the anticipated outcomes of the consultation or areas for improved coordination?	The Agency was consulted through regular scheduled meeting scheduled meetings to determine how to best serve families who with exposure to chipped and peeling paint. The agency serves as an educator for the public.
2	Agency/Group/Organization	MUSKEGON HEIGHTS
	Agency/Group/Organization Type	Housing Services - Housing Services-Children Services-Elderly Persons Services-Persons with Disabilities Other government - County Planning organization

	What section of the Plan was addressed by Consultation?	Housing Need Assessment Homeless Needs - Chronically homeless Homeless Needs - Families with children Homelessness Strategy
	Briefly describe how the Agency/Group/Organization was consulted. What are the anticipated outcomes of the consultation or areas for improved coordination?	Agency was consulted through regular scheduled meeting to ensure that we are improving access to services.
3	Agency/Group/Organization	Muskegon County United Way
	Agency/Group/Organization Type	Housing Services - Housing Services-Health Services-Employment Regional organization Planning organization Business Leaders Foundation
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Public Housing Needs Homeless Needs - Chronically homeless Homeless Needs - Families with children Homelessness Needs - Veterans Homelessness Needs - Unaccompanied youth Homelessness Strategy Anti-poverty Strategy

	Briefly describe how the Agency/Group/Organization was consulted. What are the anticipated outcomes of the consultation or areas for improved coordination?	The agency was consulted through regularly scheduled meetings where discussion surrounded improving the lives of homeless individuals and families. The anticipate outcomes is to have find fewer families needing assistance or connected to resources.
4	Agency/Group/Organization	FAIR HOUSING
	Agency/Group/Organization Type	Housing Services - Housing Services-homeless Services-Education Service-Fair Housing
	What section of the Plan was addressed by Consultation?	Public Housing Needs Homelessness Strategy
	Briefly describe how the Agency/Group/Organization was consulted. What are the anticipated outcomes of the consultation or areas for improved coordination?	Fair housing was consulted through various trainings offered throughout the year. They were also contacted via email to express views surrounding access to housing in the community.

Identify any Agency Types not consulted and provide rationale for not consulting

No agency is ousted from comment of consultation or excluded from participating through the this process.

Other local/regional/state/federal planning efforts considered when preparing the Plan

Name of Plan	Lead Organization	How do the goals of your Strategic Plan overlap with the goals of each plan?
Continuum of Care		

Table 3 – Other local / regional / federal planning efforts

Narrative

Throughout the planning process, we have used surveys, regular scheduled meetings, and outside events to garner comments, suggestions, support and overall information from local agencies working in our community.

AP-12 Participation - 91.105, 91.200(c)

1. Summary of citizen participation process/Efforts made to broaden citizen participation Summarize citizen participation process and how it impacted goal-setting

The Citizen Participation process involves representation from various neighborhoods in the City of Muskegon to assist in advising city activities and programs proposed in the Annual Action Plan, ConPlan and CAPER.

The objectives are as follows:

- The City will provide citizens with reasonable and timely access to all of its committee meetings, in person or virtually.
- The City will offer technical assistance from the City's Community Neighborhood Services Department to residents and eligible nonprofit in developing proposals, conducting research, etc.
- The City's Community Neighborhood Services department will respond to all formal complaints submitted to the Community Neighborhood Services department in writing within 15 days of receipt with a written response.
- If and when notified the City will supply assistance to residents with mobility problems, hearing and visual impediments that wish to participate in the City meetings concerning its CDBG/HOME activities and process and or any other related meeting.
- The City will consult with local Public Housing authorities when developing any studies related to housing development, neighborhood revitalization (i.e. Consolidated Plan, Action Plan, CAPER etc.) In order so that the local Public Housing Authority can submit any related information to be included in the plan and make the information available to their tenants and or board members.

At minimum, there is 2 public hearings per year that will be published in various locations prior to meeting. CDC members and community has access to anticipated funding, programs offered and amounts committed to those programs.

Citizen Participation Outreach

Sort Order	Mode of Outreach	Target of Outreach	Summary of response/attendance	Summary of comments received	Summary of comments not accepted and reasons	URL (If applicable)
1	Public Hearing	Citizens				

Table 4 – Citizen Participation Outreach

Expected Resources

AP-15 Expected Resources - 91.220(c)(1,2)

Introduction

The anticipated resources are based on past allocations. All numbers below are provided by HUD given the current review of funds without prior year expended. Allocations have been awarded so our plan is proposed to address the goals of our coming year.

Anticipated Resources

Program	Source of Funds	Uses of Funds	Expected Amount Available Year 1				Expected Amount Available Reminder of ConPlan \$	Narrative Description
			Annual Allocation: \$	Program Income: \$	Prior Year Resources: \$	Total: \$		
CDBG	public - federal	Acquisition Admin and Planning Economic Development Housing Public Improvements Public Services	912,894	0	0	912,894	0	2023 Annual allocation of \$912,894

Program	Source of Funds	Uses of Funds	Expected Amount Available Year 1				Expected Amount Available Reminder of ConPlan \$	Narrative Description
			Annual Allocation: \$	Program Income: \$	Prior Year Resources: \$	Total: \$		
HOME	public - federal	Acquisition Homebuyer assistance Homeowner rehab Multifamily rental new construction Multifamily rental rehab New construction for ownership TBRA	339,650	0	0	339,650	0	2023 Allocation of \$339,650

Table 5 - Expected Resources – Priority Table

Explain how federal funds will leverage those additional resources (private, state and local funds), including a description of how matching requirements will be satisfied

Funds have been used to accomplish the needs of our set programs/projects and strategies to meet the needs of our community. Through a multitude of sources, staff has been able to satisfy the requests of citizens. Our community does not have to match requirement but we can offset higher costs through the leveraging of dollars from other grants. Our Federal funding has increased and we anticipate that we will receive additional dollars this plan year. Fortunately, the city will be granted 1.5 Million from another department of HUD to serve county residents who need Healthy Homes. In addition, our local funding of Muskegon County Senior Millage and Municipal grants offer assistance to seniors 60 and older. Our DTE program is adding resources to our budget to cover homes in need of furnaces, water heaters, insulation with added health and safety improvements as necessary.

In our last 2 decades, the city has been involved in Lead Hazard remediation and abatement housing repairs for homebuyers and owners. We currently are assisting the county through this State funded program that supports Medicaid families who are vulnerable households with children under the age of 6 with elevated Lead Blood Levels.

If appropriate, describe publically owned land or property located within the jurisdiction that may be used to address the needs identified in the plan

N/A

Discussion

Our allocations for CDBG and HOME are \$912,894/339,650 for the 2023 fiscal year- July 1 through June 30, 2024.

Annual Goals and Objectives

AP-20 Annual Goals and Objectives - 91.220(c)(3)&(e)

Goals Summary Information

Sort Order	Goal Name	Start Year	End Year	Category	Geographic Area	Needs Addressed	Funding	Goal Outcome Indicator
1	Rental Rehabilitation Program	2021	2025	Affordable Housing	Muskegon	Code Enforcement Housing Neighborhood Enhancement Rental Rehabilitation Strong Neighborhoods Improved Neighborhoods		Rental units rehabilitated: 2 Household Housing Unit Housing for Homeless added: 2 Household Housing Unit
2	Home Repairs - Moderate Repairs	2021	2025	Home Repairs	Muskegon	Housing Neighborhood Enhancement Strong Neighborhoods Improved Neighborhoods		Homeowner Housing Rehabilitated: 15 Household Housing Unit
3	Homebuyer Assistance/Education	2021	2025	Affordable Housing	Muskegon	Housing		Homeowner Housing Added: 5 Household Housing Unit

Sort Order	Goal Name	Start Year	End Year	Category	Geographic Area	Needs Addressed	Funding	Goal Outcome Indicator
4	Exterior Paint/Siding Housing	2021	2025	Neighborhood Stabilization, Enhancement, Code Enforcement, Preserving of Existing Housing Stock	Muskegon	Housing Neighborhood Enhancement Improved Neighborhoods		Facade treatment/business building rehabilitation: 3 Business
5	Fire Station Bond	2021	2025	Non-Housing Community Development	Muskegon	Strong Neighborhoods Community Safety Improved Neighborhoods		Other: 200 Other
6	Community Housing Development Organizations	2021	2025	Affordable Housing	Muskegon	Housing		Rental units constructed: 1 Household Housing Unit Rental units rehabilitated: 1 Household Housing Unit
7	Youth Opportunities	2021	2025	Non-Housing Community Development Youth Experiences	Muskegon	Housing Youth Opportunities		Rental units rehabilitated: 2 Household Housing Unit
8	Senior Assistance	2021	2025	Non-Homeless Special Needs	Muskegon	Housing Neighborhood Enhancement		Homeowner Housing Rehabilitated: 5 Household Housing Unit

Sort Order	Goal Name	Start Year	End Year	Category	Geographic Area	Needs Addressed	Funding	Goal Outcome Indicator
9	Acquisition Development Resale	2021	2025	Affordable Housing	Muskegon	Housing Neighborhood Enhancement		Homeowner Housing Added: 2 Household Housing Unit Homeowner Housing Rehabilitated: 2 Household Housing Unit
10	Fair Housing	2021	2025	Non-Housing Community Development Fair Housing Activities		Code Enforcement Fair Housing Initiatives Housing Resource Information Strong Neighborhoods		
11	Economic Development Opportunity	2021	2021	Non-Housing Community Development	Muskegon	Acquisition Development Resale Housing Rental Rehabilitation Homeless Opportunities Parks and Playground Improvements Strong Neighborhoods		Rental units rehabilitated: 2 Household Housing Unit Homeowner Housing Added: 2 Household Housing Unit Homeowner Housing Rehabilitated: 2 Household Housing Unit

Sort Order	Goal Name	Start Year	End Year	Category	Geographic Area	Needs Addressed	Funding	Goal Outcome Indicator
12	Service Delivery	2021	2025	Housing Services	Muskegon	Program Administration / Service Delivery		
13	General Administration	2021	2026	Program Services and Assistance	Muskegon	Program Administration / Service Delivery		
14	Owner Occupied Rehabilitation - Priority Repairs	2021	2025	Home Repairs	Muskegon	Homebuyer Assistance and/or Education Housing Neighborhood Enhancement		Homeowner Housing Rehabilitated: 10 Household Housing Unit

Table 6 – Goals Summary

Goal Descriptions

1	Goal Name	Rental Rehabilitation Program
	Goal Description	Match assistance provided to landlords with property located in City of Muskegon to remodel homes that are rentals for low income families.
2	Goal Name	Home Repairs - Moderate Repairs
	Goal Description	Home repair program for low income homeowners within the City of Muskegon

3	Goal Name	Homebuyer Assistance/Education
	Goal Description	Down payment homebuyers assistance to low income families.
4	Goal Name	Exterior Paint/Siding Housing
	Goal Description	Residential facade program to assist low-income homeowners with peeling and chipping wood painted siding.
5	Goal Name	Fire Station Bond
	Goal Description	
6	Goal Name	Community Housing Development Organizations
	Goal Description	
7	Goal Name	Youth Opportunities
	Goal Description	To create a partnership with general contractors to mentor local high school students in construction to promote growth in trades and construction of affordable homes.
8	Goal Name	Senior Assistance
	Goal Description	
9	Goal Name	Acquisition Development Resale
	Goal Description	
10	Goal Name	Fair Housing
	Goal Description	

11	Goal Name	Economic Development Opportunity
	Goal Description	
12	Goal Name	Service Delivery
	Goal Description	
13	Goal Name	General Administration
	Goal Description	
14	Goal Name	Owner Occupied Rehabilitation - Priority Repairs
	Goal Description	

AP-35 Projects - 91.220(d)

Introduction

Proposed CDBG activities designed to meet the needs of this year's Action Plan Projects are listed below and amounts are subject to change with release of funding.

#	Project Name

Table 7 – Project Information

Describe the reasons for allocation priorities and any obstacles to addressing underserved needs

Home Repairs are key to our community. Families need to have safe and decent living environments in our community as well as where they reside. A large number of our citizens are senior (60+) and the need for home repairs have been noted by longer waiting lists. The focus of allocations are based on past practice programs that address the needs of those underserved with low income which has been the greatest obstacles.

AP-38 Project Summary

Project Summary Information

Project Name	Target Area	Goals Supported	Needs Addressed	Funding	Description	Target Date	Estimated and tha from acti
<TYPE=[pivot_table] REPORT_GUID=[54A4ED67473EDAEE248792836A1D83B0]>							

AP-50 Geographic Distribution - 91.220(f)

Description of the geographic areas of the entitlement (including areas of low-income and minority concentration) where assistance will be directed

Muskegon is made up of more than 15 neighborhoods that offer a variety of races, socio-economic backgrounds and ratios of household demographics. This entitlement community is aware of where the concentration of low-income and minority citizens reside. Our geographic areas of concern have produced programs called Blight Fight initiatives, Neighborhood Associations, and intentional engagement with citizens to improve the look and feel of safety, homeownership, improvements and enhancements requested by the residents.

Geographic Distribution

Target Area	Percentage of Funds
Muskegon	100
Norton Shores	
Muskegon Heights	

Table 8 - Geographic Distribution

Rationale for the priorities for allocating investments geographically

Our geographic investments are always for our citizens within our city limits. 100% of our public services and public facilities invest in this community. The residents of low-moderate incomes receive a multitude of services through the funding of CDBG and HOME funded programs but also because of a variety of county and state grants.

We find that our citizens are the priority as community development investments increase in our downtown development. Other local funding awards can assist county residents and our citizens are now able to access additional help.

Discussion

The Regional Consolidated Plan will provide a structure of how each entitlement community will derive actions to create a safe, decent and affordable options for its citizens. Our collaborative events and agreed upon strategies provide each community with options to address our own citizens accordingly.

Affordable Housing

AP-55 Affordable Housing - 91.220(g)

Introduction

Affordable housing continues to be the forefront of our planning efforts within the City limits. The goal this year is to work with the Continuum of Care to coordinate housing for homeless families. The city has acquired 4 units that will be available to families to lease for one year, up to two years to support permanent housing.

In addition to this, our HOME Investment Partnership Program (HOME) funds are used to offer Rental Rehabilitation to existing Landlords, produce Homeownership homes and support the purchase of housing within Muskegon city limits to qualifying buyers.

We continue to reach out to organizations to create more opportunity for Community Housing Development Organizations (CHDO) for rental and homebuyer. This partnership is essential to the development of housing in the community.

One Year Goals for the Number of Households to be Supported	
Homeless	4
Non-Homeless	2
Special-Needs	0
Total	6

Table 9 - One Year Goals for Affordable Housing by Support Requirement

One Year Goals for the Number of Households Supported Through	
Rental Assistance	1
The Production of New Units	0
Rehab of Existing Units	2
Acquisition of Existing Units	2
Total	5

Table 10 - One Year Goals for Affordable Housing by Support Type

Discussion

The City can look forward to opportunities to renovate current existing housing stock that will be made available to families looking to become homeowners. There are also opportunities for Landlords to improve housing with a 505 match program to support home repairs to renters.

AP-60 Public Housing - 91.220(h)

Introduction

The Muskegon Housing Commission is a Public Housing Authority that has been approved to begin a Rental Assistance Demonstration (RAD) project. RAD is an alternative program that will give Management oversight as the property managers of rental units and removing HUD from a fiduciary position. The city of Muskegon has been an active support to MHC through Board appointments.

Actions planned during the next year to address the needs to public housing

The Housing Commission has an active Resident Advisory Council (RAC)! Management has been involved with the reinstatement of the advisory council because of the upcoming changes (renovations) to happen through the RAD process. The residents have been included in the selection of flooring, colors, and overall updates. Tenant involvement will continue until the construction is complete.

In addition to RAC, staff reports that another organized group shares and supports the RAC with special events and monitoring through floor captains. Monthly events, movie nights, and personal care for neighbors is at an all-time high.

Actions to encourage public housing residents to become more involved in management and participate in homeownership

The current tenancy is not leaning towards homeownership. As of right now, the RAD project will require that management reviews the interest of the residents to verify if they will remain occupants of the Hartford Terrace building prior to the start of construction. Homeownership and other rental opportunities will be discussed as needed. The city of Muskegon will assist if Homeownership is requested.

If the PHA is designated as troubled, describe the manner in which financial assistance will be provided or other assistance

A troubled status has not been assigned to this housing authority.

Discussion

The Housing Commission has stabilized its opportunity to offer affordable housing that is both decent and safe. Programs and outside resources are now present in the building on a regular basis. Tenant participation is welcomed and received at monthly board meetings which has been a desired outcome with new management.

AP-65 Homeless and Other Special Needs Activities - 91.220(i)

Introduction

Special needs and homeless activities are supported through the efforts of our HOME ARP (American Rescue Plan) allocation for 2021. Through this funding, HUD has allowed the city of Muskegon to lead housing, shelter and services programs for vulnerable people experiencing these needs. Substantial amendments itemizing these new resources will be identified in specific terms to describe the qualifying population, programs providing services/resources, and affordable housing opportunities.

Describe the jurisdictions one-year goals and actions for reducing and ending homelessness including

Reaching out to homeless persons (especially unsheltered persons) and assessing their individual needs

Homelessness and ending homelessness continues to be a priority with the City of Muskegon and the community as a whole. The Continuum of Care coordinates the Point in Time counts that happen quarterly to contact those who may be living in homelessness. Other efforts include coordinating with local agencies with services that align with the housing first model.

Addressing the emergency shelter and transitional housing needs of homeless persons

The City of Muskegon has four apartment style homes available to rent to low income families for transitional housing. We have partnered with CoC and Community enCompass to use the housing first model to house families on first come first serve basis.

Helping homeless persons (especially chronically homeless individuals and families, families with children, veterans and their families, and unaccompanied youth) make the transition to permanent housing and independent living, including shortening the period of time that individuals and families experience homelessness, facilitating access for homeless individuals and families to affordable housing units, and preventing individuals and families who were recently homeless from becoming homeless again

Our staff is preparing to produce affordable housing units for homeless, veterans, families with transitional, permanent or independent living situations. Affordable housing purchases will create housing units specific to the CoC families. This new opportunity will purchase existing properties for affordable housing to this population only. The city will utilize HOME ARP funding to develop 1-4 multi-family housing that will become homes to up to four families per development.

Helping low-income individuals and families avoid becoming homeless, especially extremely low-income individuals and families and those who are: being discharged from publicly funded institutions and systems of care (such as health care facilities, mental health facilities, foster care and other youth facilities, and corrections programs and institutions); or, receiving assistance from public or private agencies that address housing, health, social services, employment, education, or youth needs.

Yes, we will help low-income households avoid homeless situations by addressing their needs where they are by using local agency resources. Community Health, Rescue Mission, and other connected agencies that refer families for assistance. We work with our schools and social service agencies to collectively meet the needs of our citizens.

Discussion

The city's initiatives are geared to addressing the housing crisis in our area. Recently, the city conducted a Housing Needs Assessment that assessed many aspects of housing in our area and it was determined that there are not sufficient vacant units available to support the current size of our community. the data supports the need to increase housing by creating 300+ units of affordable housing throughout the area to ensure there is housing for all. This will not be an easy or small task and will take us many years to successfully respond and address this issue. We have begun to strategize methods to properly respond to this issue.

AP-75 Action Plan Barriers to Affordable Housing - 91.220(j)

Introduction

Barriers to affordable housing is that there is not affordable and safe housing available to all city residents. Affordable housing is very limited and the cost of rent continues to sore as need grows. The city has provided a number of avenues to create housing choice- market rate, affordable and approval of multifamily housing construction projects. Choice is the ultimate vision of a viable and inclusive city.

Actions it planned to remove or ameliorate the negative effects of public policies that serve as barriers to affordable housing such as land use controls, tax policies affecting land, zoning ordinances, building codes, fees and charges, growth limitations, and policies affecting the return on residential investment

Current barriers to zoning ordinance updates are present within neighborhoods that resist change. The neighbors that see the positive effects of change have seen an increase in quality, new homes of varied types of housing: duplexes, row-housing units, multifamily, and new constructions.

Discussion

The city continues to research the housing market to identify the gaps and assess the need for housing in our community. The research will be turned into actionable items to impact the housing situation for all of the community.

AP-85 Other Actions - 91.220(k)

Introduction

An Analysis of Impediment study is underway.

Actions planned to address obstacles to meeting underserved needs

Actions planned to address obstacles to meeting underserved needs are to continue to meet and identify agencies to assist the underserved. The community has been in communication regarding the need for a central location that all agencies would have access to individuals to help navigate and connect with services and resources. This way will help encourage communication from one agency to the next and ensure that people who could benefit from services are not slipping through the cracks.

Actions planned to foster and maintain affordable housing

Actions reviewed to maintain affordable housing are to continue rehabbing properties for sale to income eligible families and creating affordable rental property opportunities.

Actions planned to reduce lead-based paint hazards

The City of Muskegon has a Lead Safe program that is diligently working to remedy lead based pain in homes that are pre 1978 and have Medicaid families living in them. Any home that is in the City of Muskegon and receives a home repair will also have water tested to ensure water quality is free from lead. Other actions the City has taken is to encourage citizens who are participating in home repair programs that have young children to participate in the lead abatement program.

Actions planned to reduce the number of poverty-level families

The plan to reduce the number of poverty-level families is always a collaborative effort of the City, local agencies, Public Housing Authorities, Continuum of Care and the communities. Everyone together is actively looking for innovative ways to fight this fight on poverty.

Actions planned to develop institutional structure

Institutional structures in our city require investment in education, strong neighborhoods, and stable housing.

Actions planned to enhance coordination between public and private housing and social service agencies

Social Service organizations have been able to partner with the city as we review opportunities to

remove barriers to public and private housing access. The coordination of a unified focus to reduce homelessness in youth and provide affordable housing in the middle of a burst of new housing creation.

Discussion

The city of Muskegon will always look for other actions/options that make sense for housing choice. These options are intended to grow safe, affordable and decent housing for our citizens.

Program Specific Requirements

AP-90 Program Specific Requirements - 91.220(l)(1,2,4)

Introduction

Community Development Block Grant Program (CDBG)

Reference 24 CFR 91.220(l)(1)

Projects planned with all CDBG funds expected to be available during the year are identified in the Projects Table. The following identifies program income that is available for use that is included in projects to be carried out.

1. The total amount of program income that will have been received before the start of the next program year and that has not yet been reprogrammed
2. The amount of proceeds from section 108 loan guarantees that will be used during the year to address the priority needs and specific objectives identified in the grantee's strategic plan
3. The amount of surplus funds from urban renewal settlements
4. The amount of any grant funds returned to the line of credit for which the planned use has not been included in a prior statement or plan.
5. The amount of income from float-funded activities

Total Program Income

Other CDBG Requirements

1. The amount of urgent need activities

HOME Investment Partnership Program (HOME)

Reference 24 CFR 91.220(l)(2)

1. A description of other forms of investment being used beyond those identified in Section 92.205 is as follows:
2. A description of the guidelines that will be used for resale or recapture of HOME funds when used for homebuyer activities as required in 92.254, is as follows:
3. A description of the guidelines for resale or recapture that ensures the affordability of units acquired with HOME funds? See 24 CFR 92.254(a)(4) are as follows:
4. Plans for using HOME funds to refinance existing debt secured by multifamily housing that is rehabilitated with HOME funds along with a description of the refinancing guidelines required that will be used under 24 CFR 92.206(b), are as follows:

Discussion

WATCH MUSKEGON

Agenda Item Review Form Muskegon City Commission

Commission Meeting Date: April 25, 2023	Title: Parkland Marina Agreement Amendment
Submitted By: Jonathan Seyferth	Department: City Manager
Brief Summary: This Amendment to the Parkland Marina Agreement seeks to make clear what public access will look like once Parkland Marina has developed the property. The amendment also further defines how public access will be maintained and what type of activities are allowed on the pier. This language has also been updated following the Commission work session discussion on Monday, April 10.	
Detailed Summary & Background: In early 2021 the City took action to sell a parking lot adjacent to Terrace Point Marina. The parking lot was encumbered by an easement which gave the easement holder (the owner of Terrace Point Marina) extensive rights over the property including the ability move drives and access and no structures could be built by the City without the permission of the adjacent property owner/easement holder. Parkland approached the City to purchase the property so they could develop the area with the understanding that public access would be maintained. This would have the additional benefit of creating additional taxable value for the City. Earlier this year the City Commission requested staff work to get better detail on what public access would be at the pier following development by Parkland Marina LLC. The updated Amendment to the Development Agreement defines the following: - Provides handicapped Parking near the Terrace Point Marina Clubhouse - Provides two access points for pedestrians (see purple paths on the map in Exhibit A) - Allows for fishing in dedicated areas - Allows wagons/strollers on pier, allows bikes along the southerly access point - Parkland agrees to make \$250,000 worth of improvements to public access - With the approval of the amendment, Parkland immediately grants the public the right and a license to use the area in the same way as the former agreement. - Parkland may only close public access for up to 30 days during construction to provide for construction of its improvements (this may be extended with the permission of the City Manager) - A site plan (Exhibit A) of the final layout with public access noted is also included	
Goal/Focus Area/Action Item Addressed: Goal 1 Destination Community & Quality of Life, Key focus Improved Access to the Waterfront; Goal 2 Economic Development (business)	
Amount Requested: None	Amount Budgeted:

Fund(s) or Account(s):	Fund(s) or Account(s):
Recommended Motion: I motion to approve the First Amendment to the Development Agreement between the City of Muskegon and Parkland Marina LLC and authorize the Mayor and Clerk to sign.	
Approvals: <i>Get approval from division head at a minimum prior to sending to the Clerk.</i> Immediate Division Head ☒ Information Technology ☐ Other Division Heads ☒ Communication ☐ Legal Review ☒	Guest(s) Invited / Presenting Yes ☐ No ☒
For City Clerk Use Only: Commission Action:	

FIRST AMENDMENT TO DEVELOPMENT AGREEMENT

THIS FIRST AMENDMENT TO DEVELOPMENT AGREEMENT (the “First Amendment”) is made as of April ____, 2023, by and between the **CITY OF MUSKEGON**, a Michigan municipal corporation of 933 Terrace St. (the “City”); and **PARKLAND MARINA, LLC**, a Michigan limited liability company of 75 W. Walton, Ste A, Muskegon, MI 49440 (“Parkland”) (the City and Parkland are sometimes collectively referred to as “Parties”).

RECITALS:

WHEREAS, Parkland and its affiliates are the successor owner of the property formerly owned by SPX Development Corporation located on Terrace Point Drive in Muskegon, Michigan;

WHEREAS, the Parties entered into that certain Development Agreement dated March 25, 2021 (the “Agreement”), for the development of certain property in the City of Muskegon known generally as Parkland Marina and identified on Exhibit A of the Agreement (the “Property”); and

WHEREAS, the Parties desire to enter into this First Amendment for the mutual benefit of the Parties to address the provision of a Public Access and to extend the time for Parkland’s performance of the Agreement in order to facilitate disruptions to the schedule from a circuit court lawsuit initiated by a neighboring property owner against the City.

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

A. **DEFINITIONS.** Except as otherwise defined herein, all capitalized terms used herein shall have the meanings ascribed thereto in the Agreement.

B. **CONSIDERATION.** The Agreement is amended to provide that Parkland shall pay the City of Muskegon the sum of twenty-five thousand dollars (\$25,000) as consideration for the Property and the termination of the dedications associated with portions of the Property, within five (5) days of execution of this First Amendment.

This amount is adequate consideration for the Property due to the following facts:

1. The Property’s parking lot was burdened with a parking easement for the benefit of SPX Development Corporation, and later Parkland and its affiliates as successors. Parkland’s guests and employees were the only parties permitted to use or park on the Property’s parking lot.
2. The Property is heavily contaminated by hazardous materials due to its historical use as a manufacturing facility. The Property is costly to develop and its market value is diminished by the presence of contaminants. The Property’s parking lot was installed to encapsulate volatile organic compounds within the soils. Monitoring wells dot the site. Parkland’s proposed indoor boat storage concept allows for the safe use of the Property with minimal disruption of contaminated soils.

3. Parkland is obligated to continue to provide public ingress and egress access to the existing boardwalk located on the former SPX waterfront peninsula (the "Boardwalk").
4. Parkland has spent over \$100,000 on planning, designs and permits for the Project.
5. Parkland is obligated to make a minimum of \$2 million worth of improvements to the Property of which at least \$250,000 of these improvements will be accessible to the general public. Productive use of the privately owned real estate will allow the City, County and local school system to capture tens of thousands of tax dollars annually that have never been captured while the Property was City owned. The new facility will also create dozens of well-paying jobs.

C. **PUBLIC ACCESS.**

1. At the time Parkland commences construction of its minimum \$2 million worth of improvements to the Property, Parkland agrees at least \$250,000 worth of these improvements will be to property that is accessible to the general public. This may include, but is not limited to, improvements to the Boardwalk; construction of the new means of "public access" described in paragraph 2 below, a gas dock, and/or construction of a community shopper's dock.

2. At the time Parkland commences construction of its improvements to the Property, Parkland shall provide a five foot wide pedestrian "public access" for ingress and egress to the Boardwalk. Parkland shall also provide a five foot wide pedestrian "public access" for ingress and egress to the proposed fishing pier location. The paths of these new public accesses shall be the paths delineated in purple on the plan attached as **Exhibit A**. These public accesses will be limited to the same permitted activities as the Dedication dated February 27, 1991, and recorded March 12, 1991 in Liber 1557, Pages 416-425, Muskegon County Records (the "Dedication"), except Parkland shall also expand the permitted uses to permit the pushing and pulling of strollers and wagons on both public accesses, the riding of bicycles on the public access along the southern border of the Property, and fishing in designated areas. Parkland shall be granted the same rights that SPX reserved in the Dedication relative to dedicated areas, as well as the right to briefly limit public access to the kidney shaped concrete patio at the far end of the peninsula during summer wedding ceremonies and events for the adjacent hotel and restaurant. Parkland with the City may impose safety limitations on the public access that minimize the likelihood of injury or death, if they do not unreasonably impair public access. Parkland may also impose other rules approved by the City Manager. The City Manager shall notify the City Commission of any new rules relating to the public access. No building permit will be issued for the Project until a new public access instrument is approved by the City and executed and recorded.

3. Parkland immediately grants the public the right and a license to use the same areas of the Property which were formerly authorized to be used under the Dedication in the same manner previously allowed by the terminated Dedication, until Parkland commences construction of its improvements to the Property. These licensed areas are depicted on **Exhibit B**. Parkland also agrees to allow the pushing and pulling of strollers and wagons as permitted uses under the license.

Once Parkland commences construction, the public access shall be moved to the areas described in paragraph 2 above.

4. Parkland may close the public access for up to 30 consecutive days to provide for the construction of its improvements to the Property, and the maintenance, repair, and/or replacement of the improvements situated within the public access. With the permission of the City Manager, this period may be extended by a reasonable time to complete work which is being diligently pursued.

D. **EXTENSION**. Paragraph 2 of the Agreement is amended to replace the reference to “2 years” with “2 years from a final decision or dismissal of Muskegon Circuit Court Case No. 22-3962-CZ, including any related appellate proceedings”.

E. **VACATION OF ALLEGED PUBLIC STREET** The Agreement is amended to provide that the City of Muskegon shall cause all areas of the Property which are alleged to be public streets in Muskegon Circuit Court Case No. 22-3962-CZ, to be vacated within ninety (90) days from the date of this amendment in accordance with City Ordinances and applicable law.

F. **COUNTERPARTS, BINDING EFFECT, AND DELIVERY** This First Amendment may be executed in one or more counterparts, each of which shall be deemed an original and all of which combined shall constitute one and the same instrument. This First Amendment shall inure to the benefit of and be binding upon the Parties and their successors and permitted assigns. A facsimile or electronic transmission of this First Amendment, as executed, shall constitute delivery and shall be valid and enforceable against the party providing the facsimile or electronic signature.

G. **RATIFICATION**. Except as specifically amended hereby, all other conditions and covenants of the Agreement shall remain in full force and effect and are hereby ratified and confirmed.

[SIGNATURES ON THE NEXT PAGES]

CITY OF MUSKEGON

Dated: _____, 20__

By: _____
Ken Johnson, its Mayor

Dated: _____, 20__

By: _____
Ann Marie Meisch, its Clerk

STATE OF MICHIGAN)

)

COUNTY OF MUSKEGON) ss

The foregoing signatories, Ken Johnson and Ann Marie Meisch, are known to me, respectively, as the Mayor and Clerk the City of Muskegon, and they acknowledged the foregoing instrument on behalf of the City this _____ day of _____, 20__.

_____, Notary Public
My Commission expires: _____

PARKLAND MARINA, LLC
a Michigan Limited Liability Company

Dated: _____, 2022

By: _____
Jonathan L. Rooks, Manager

STATE OF MICHIGAN)
)
COUNTY OF MUSKEGON) ss

The foregoing signatory, Jonathan L. Rooks is known to me, as the Manager of PARKLAND MARINA, LLC, a Michigan limited liability company, and acknowledged the foregoing instrument on behalf of the Company this _____ day of _____, 20__.

_____, Notary Public
My Commission expires: _____

EXHIBIT A

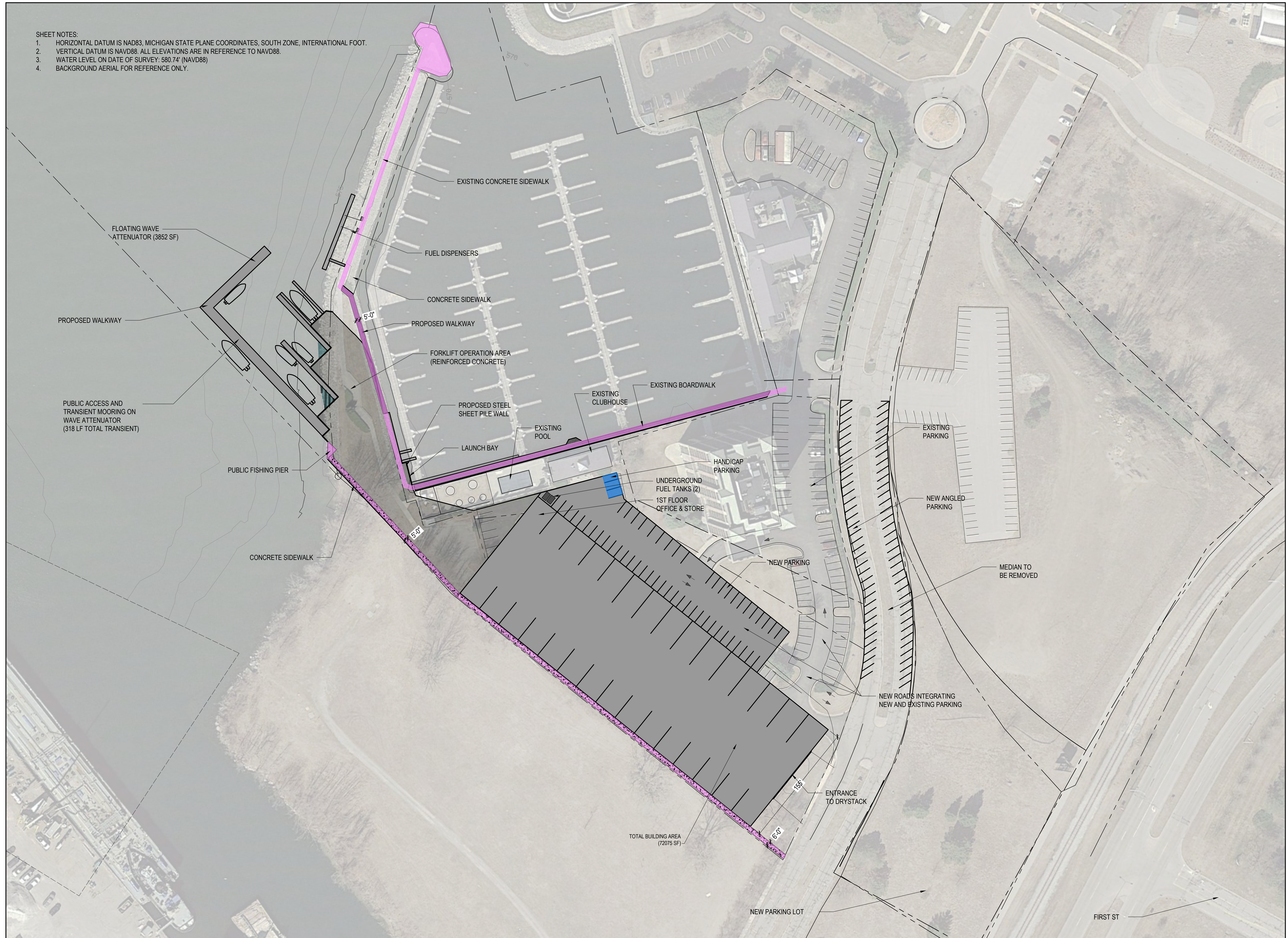
Public Accesses

EXHIBIT B

Licensed Areas

SHEET NOTES:

1. HORIZONTAL DATUM IS NAD83, MICHIGAN STATE PLANE COORDINATES, SOUTH ZONE, INTERNATIONAL FOOT.
2. VERTICAL DATUM IS NAVD88. ALL ELEVATIONS ARE IN REFERENCE TO NAVD88.
3. WATER LEVEL ON DATE OF SURVEY: 580.74' (NAVD88)
4. BACKGROUND AERIAL FOR REFERENCE ONLY.



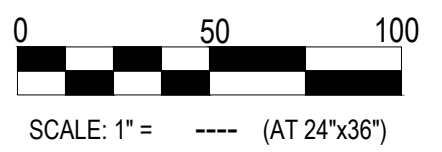
PROJECT TITLE: **PARKLAND DRTSTACK**
PEDESTRIAN ACCESS ALTERNATES
MUSKOGON, MI
SHEET TITLE: **JOINT WALKWAYS WITH AERIAL**

[illegible]

ISSUED FOR:

ISSUED FOR

DATE:	x/xx/20xx	 NORTH
PROJ NO.:	22-011	



DESIGNED BY: ----
DRAWN BY: ----
REVIEWED BY: ----

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SHEET NUMBER:

3.02

EXHIBIT B

Licensed Areas



Shoreline Inn & Conferen

WATCH MUSKEGON

Agenda Item Review Form

Muskegon City Commission

Commission Meeting Date: April 25, 2023		Title: Lumberjacks Renovations to Trinity Health Arena	
Submitted By: Jake Laime		Department: Arena	
Brief Summary: Seek approval to develop conceptual designs, establish a project budget and complete a feasibility study to construct new team space at Trinity Health Arena. In exchange, the Lumberjacks would like to add 2 additional renewal options to Lumberjacks Shared Use Agreement.			
Detailed Summary & Background: Muskegon Lumberjacks Organization LLC, parent company of the USHL's Muskegon Lumberjacks, are seeking approval to construct a second story office suite above their existing players' lounge and coaches' offices with access to and a presence on the arena concourse. The proposed space would be built into the necessary locker room and supporting medical space to provide the Lumberjacks the best amenities and continued success in player recruitment. All construction would be fully funded by the Muskegon Lumberjacks Organization LLC. Due to the nature of the cost to build, the Muskegon Lumberjacks Organization LLC is requesting 2 additional 5yr renewal options added to their shared use agreement. Attached is the proposed sixth amendment as well as a general concept of construction.			
Goal/Focus Area/Action Item Addressed: Destination, Community and Quality of Life (Enhanced Recreation and Services)			
Amount Requested: \$0		Amount Budgeted: \$0	
Fund(s) or Account(s):		Fund(s) or Account(s):	
Recommended Motion: To direct staff to continue working with the Lumberjacks regarding the exploration of the building renovation and amendment to the shared use agreement.			
Approvals: Immediate Division Head X Information Technology Other Division Heads X Communication Legal Review		Guest(s) Invited / Presenting Yes x No	
For City Clerk Use Only: Commission Action:			

Sixth Amendment to Shared Use Agreement

This Sixth Amendment to Shared Use Agreement ("Sixth Amendment") dated effective April ___, 2023 ("Effective Date"), is entered into between the **City of Muskegon**, a municipal corporation, of 933 Terrace Street, Muskegon, Michigan 49440 ("City") and **Muskegon Lumberjacks Organization, LLC**, a Michigan limited liability company, of 470 W. Western Avenue, Muskegon, Michigan 49440 ("Lumberjacks") (collectively, the "Parties") with reference to the following facts:

Background

A. The City and Lumberjacks, as assignee of predecessor shared use parties, entered into a certain Shared Use Agreement dated effective July 1, 2019, as amended (together, the "Agreement").

B. Pursuant to the Fifth Amendment, effective July 1, 2021, the Lumberjacks exercised their first of three five-year options to extend the term through July 1, 2026. In addition to the two remaining five-year options, the Fifth Amendment provided the Lumberjacks three additional five-year options to extend the term beginning on the expiration of the third five-year option in July 2036.

C. The Parties desire to enter this Sixth Amendment to provide the Lumberjacks additional options to extend the term beyond the expiration of the three additional five-year options provided in the Fifth Amendment in July 2051.

Therefore, the Agreement is amended as follows:

1. **Paragraph 3. Term.** Upon the expiration of the third five-year extension option in 2051, City grants Lumberjacks the option to extend the term for an additional ten-year term ending on July 2061.
2. **Full Force and Effect.** Except as set forth in this Sixth Amendment, the terms and conditions of the Agreement shall remain in full force and effect.
3. **Counterparts/Electronic Signature.** This Sixth Amendment may be executed in any number of counterparts and by different parties to this Amendment on separate counterparts, each of which, when so executed, will be deemed an original, but all such counterparts will constitute one and the same amendment. Any signature delivered by a party by fax or email will be deemed to be an original signature.
4. **Full Execution.** This Sixth Amendment requires the signature of both parties. Until fully executed, on a sign copy or in counterparts, this Sixth Amendment is of no binding or effect and if not fully executed, this Sixth Amendment is void.

The Parties hereto have executed this Sixth Amendment as of the Effective Date.

Lumberjacks -

City -

Muskegon Lumberjacks Organization, LLC

City of Muskegon

By: _____

By: _____

Name: Andrea Rose

Name: _____

Title: President

Title: City Manager

By: _____

Name: _____

Title: City Clerk



Re: Proposed Renovation and Addition at Trinity Health Arena

Why: The Muskegon Lumberjacks are interested in being Muskegon's home hockey team for decades to come. The team is committed to a partnership with Trinity Health Arena that allows them to flourish and create opportunities for the City to generate additional revenue within the Arena.

What: The Muskegon Lumberjacks are interested in renovating and possibly building a small addition on the north side of Trinity Health Arena. The current locker rooms, athletic medicine and equipment spaces are too small, disjointed, outdated and do not meet the current standards of the League. Existing facilities also do not comply with the Americans with Disabilities Act (2010 Standard). The team offices are located on the sub-concourse and are not along an accessible route. This presents operational and security issues for both the team and arena management.

The current locker room footprint is constrained by low ceilings and structural walls what will make a cohesive renovation in the existing location difficult and cost prohibitive. Existing mechanical systems are outdated and currently push air from the locker room into the rest of the sub-concourse instead of ventilating it out of the building leading to smelly air inundating adjacent spaces. Additionally, there is a concern that contaminated building materials could be uncovered during an extensive renovation of existing spaces.

The team currently shares toilets, sinks and a large gang shower (pictured in the attached document) with a high school hockey team – for several reasons, this is a major concern. Neither team locker room is truly secure from the other at this point, and operationally, two teams of varying age groups sharing toilet and shower facilities is a considerable issue. Additionally, the Lumberjacks Athletic medicine and equipment spaces are scattered into multiple, small rooms which is not ideal from an athlete health and wellness standpoint or from a team management perspective.

Renovating team spaces on the north side of the building will not only help the Lumberjacks streamline their operations and attract top talent, it will also free up spaces that could be reallocated back to the Arena and generate additional revenue for the building and the City. As proposed, the renovation would allow the arena management team to be located in an office suite together and provide additional meeting and locker room space not currently available in the building.

A retail store is proposed to be located in the old box office location and would allow the concourse level to be opened up for spectator circulation. This would include removing the existing bank of access control doors that became obsolete when the box office was relocated to the Convention Center.

The project has the ability to address vertical circulation issues within the building and would address outstanding barrier free issues that exist between the concourse, sub-concourse and ice level of the arena as well. The elevator could be renovated in a way that it becomes useful for the team and the arena both.

Moving the Lumberjack office and team spaces to the north side of the building would allow for a new and secure entrance into the team's facilities. This would not only provide a public face for the team but would also alleviate access control issues to the remainder of the building during off hours. At the same time, a facelift on the north façade of the building would enhance what is currently very much a back-of-house aesthetic and bring the arena more in line with the contemporary architecture of the Convention Center.



Connecting the main arena concourse to the team spaces provides a unique opportunity to enhance the spectator experience, elevate the visibility of the team and will create opportunities for additional shared amenities between the team and arena operator. The ability to create daylight office spaces and provide views to Muskegon Lake are an added bonus that not only benefit the team but will also add to the value of the building.

A small investment into the existing facility will position the team to attract top tier athletes, coaches and staff for decades to come. In turn, this likely will lead to delivering an exciting spectator experience and will continue to draw spectators to downtown Muskegon for games and events. A renovated space creates new and exciting programming opportunities for the arena, and overall a refreshed building ends up being a more valuable physical and community asset for Muskegon.

Purpose: Seek approval to develop conceptual design(s), establish a project budget and complete a feasibility study to construct new locker rooms, team amenities and front offices for the Lumberjacks. This includes renovating existing spaces and constructing a new second story addition on the north side of Trinity Health Arena along Shoreline Drive.

Value Add Opportunities:

Locker Rooms:

- The present locker rooms at the Arena are aging and lack amenities that attract and keep players.
- The toilets, lavatories and gang shower room are shared with the Reeth's Puffer High School Hockey Team which is a security concern as well as an athlete wellbeing issue.
- The current locker room does not meet the minimum requirements prescribed by the American's with Disabilities Act (2010).
- Renovating the locker rooms to meet or exceed the league standards is desirable to keep talent as well as attract additional talent.
- Desired features that would be included/considered are: Oval Shape, ceiling logos, state of the art media centers, better flow that accounts for the needs of players, new medical, dry rooms, changing rooms, lockers, recovery solutions, etc.
- Planning that incorporates the right number of lockers and space for the current and future team members.
- Closer locker rooms to the ice for increased speed and player experience.

Offices:

- A second story addition would create a desirable office location with lakefront views.
- The office addition would provide a dedicated exterior door to the Lumberjacks office and locker rooms.
 - o This would also create a desirable entry exit scenario that could be isolated from the rest of the arena, allowing for private events and meetings scheduled during off hours.
 - o The Concourse level offices would not impact the arena concourse circulation during events but it would allow direct access to the offices.
- The second story would expand the footprint, leaving the existing locker room spaces for the other leagues to continue using. Additional renovation to the existing home team locker rooms would be optional.
- Adding an addition would provide long lasting desirable space to the Arena, increasing the potential



property value.

Concourse:

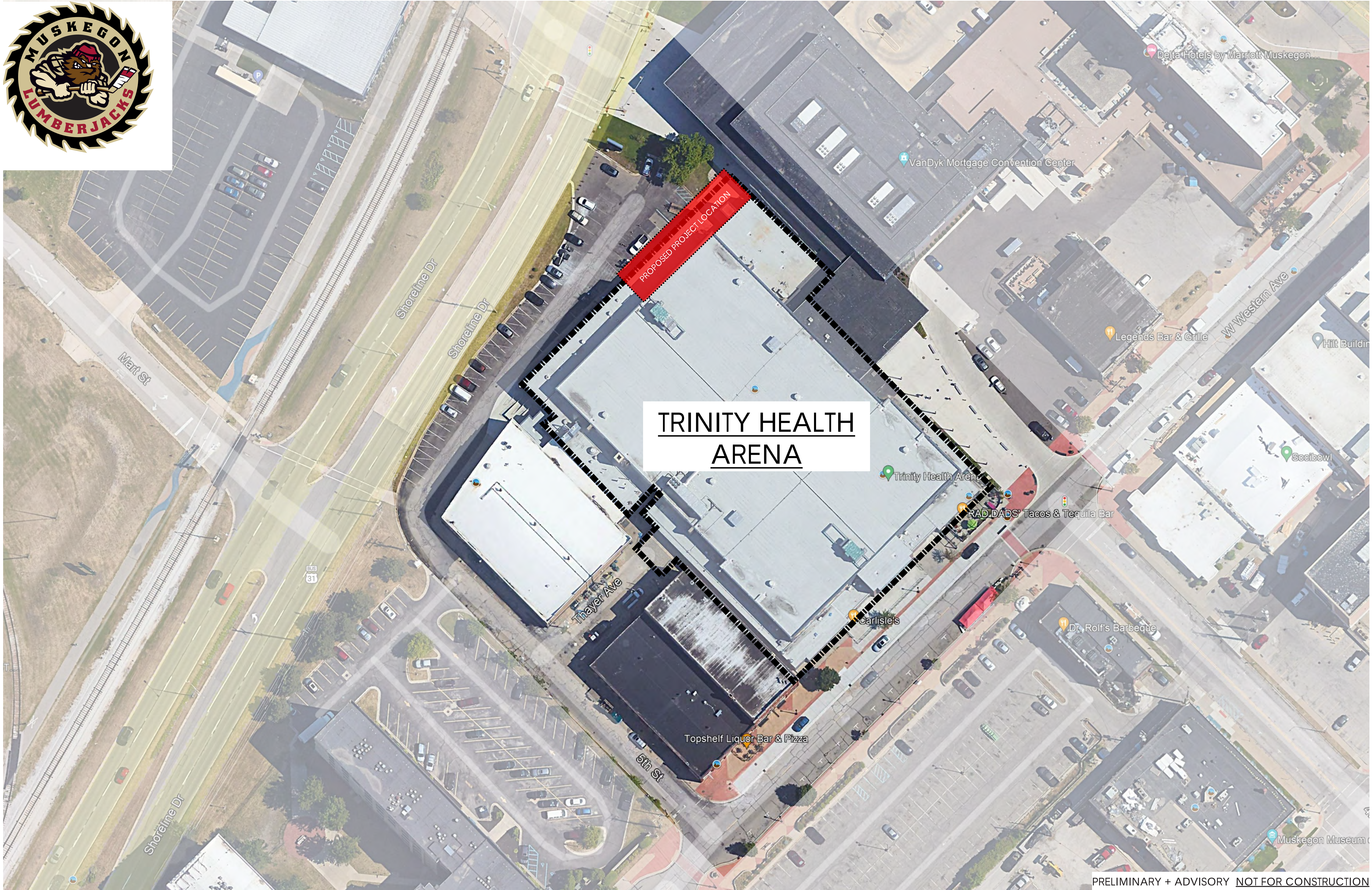
- There is an opportunity to renovate the old box office into new areas that would be desirable concession or office space. We would expand the interior space to allow for deeper rooms, as well as to create more visibility.
- The doors that separate the former box office from the concourse could be removed to allow more direct access to the elevator, back stairs, and to the new concession/office area. This would allow for better flow of traffic.

Accessibility/Elevator:

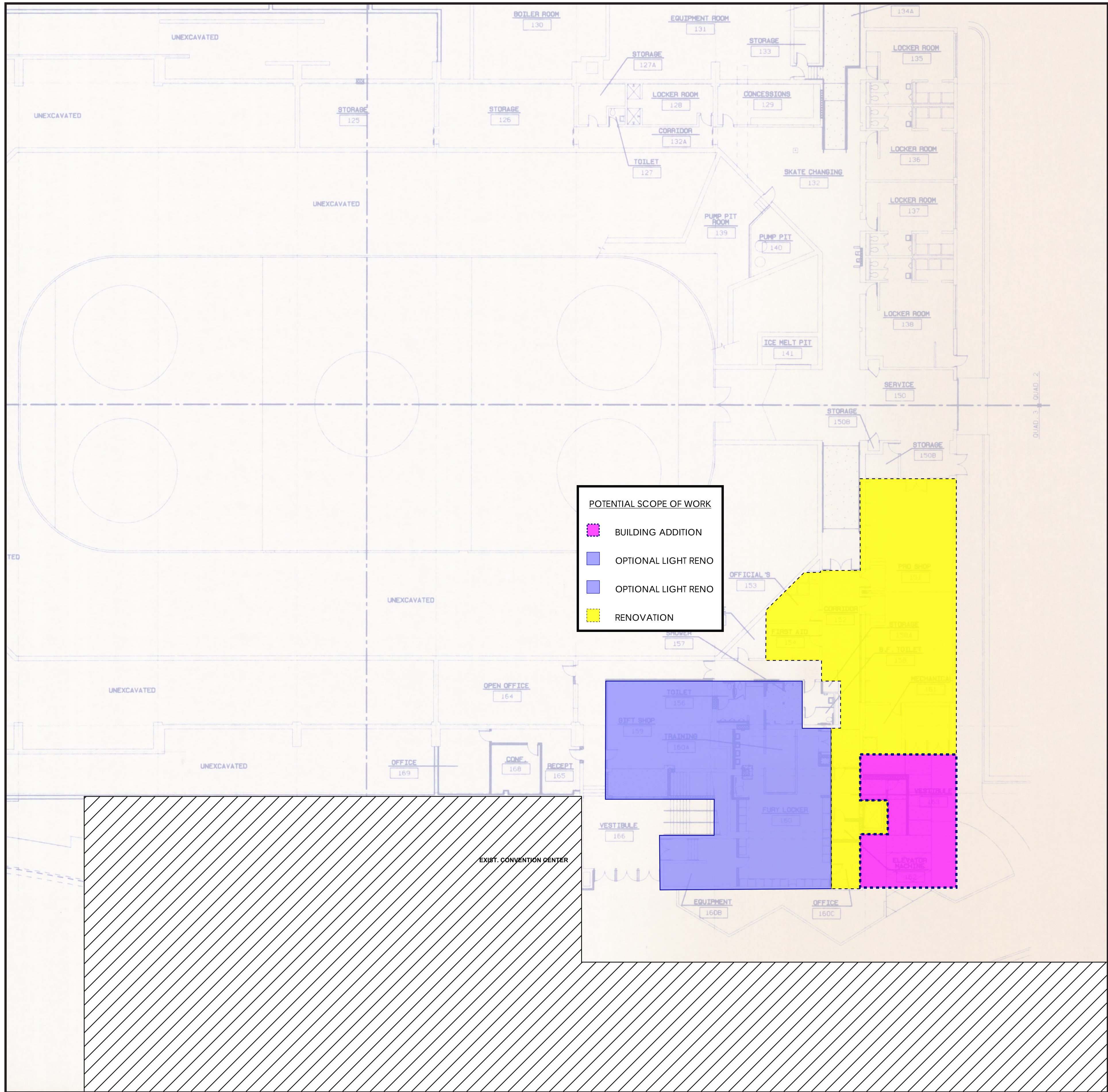
- Updating the spaces would allow the opportunity to upgrade and improve the accessibility features of the facility in this North corner of the facility.
- The elevator, while presently operational, would undergo a refresh. Additionally, we would explore adding a door to the elevator cab to allow access from Shoreline. Adding a door would enhance both the accessibility and VIP entrances, eliminating a long approach through the basement and instead have an immediate vestibule entry.

The following documents illustrate the existing spaces as they are currently being used, scope of proposed renovations and building addition, and photographs that document the existing conditions.

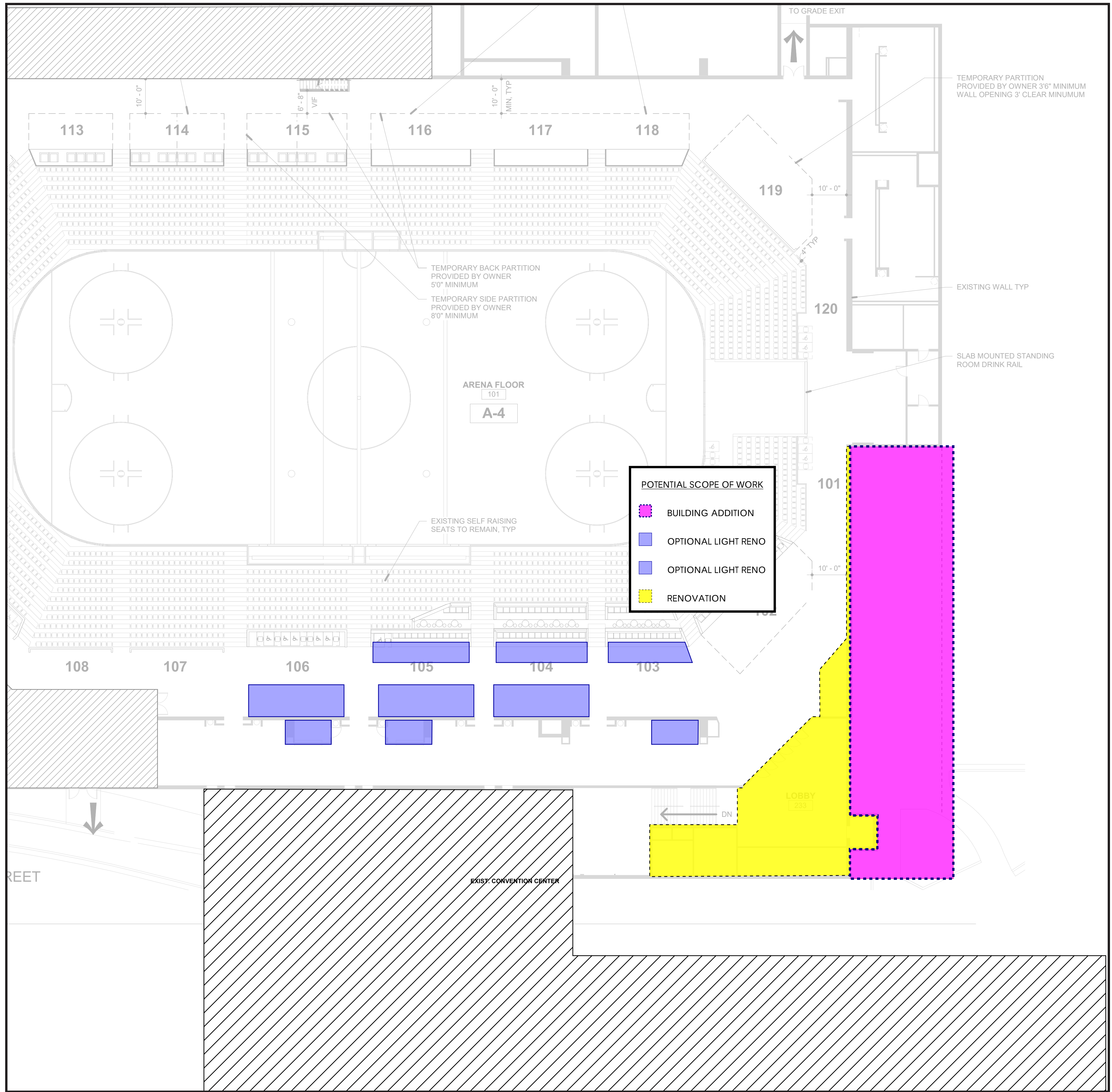
Please note that this is a high-level assessment and does not include any formal testing or engineering.



PRELIMINARY + ADVISORY NOT FOR CONSTRUCTION

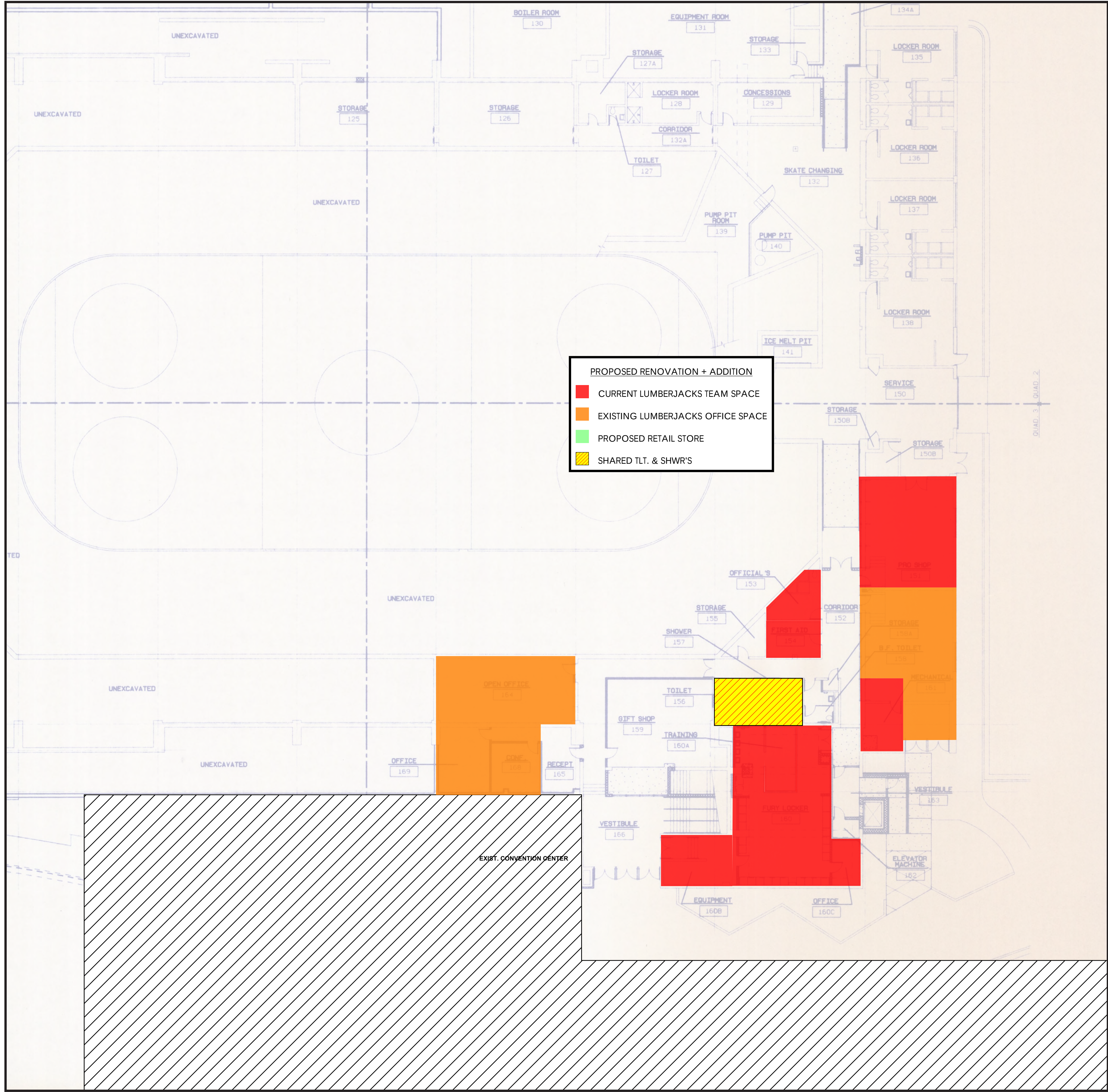


ANTICIPATED ICE LEVEL SCOPE OF WORK PLAN

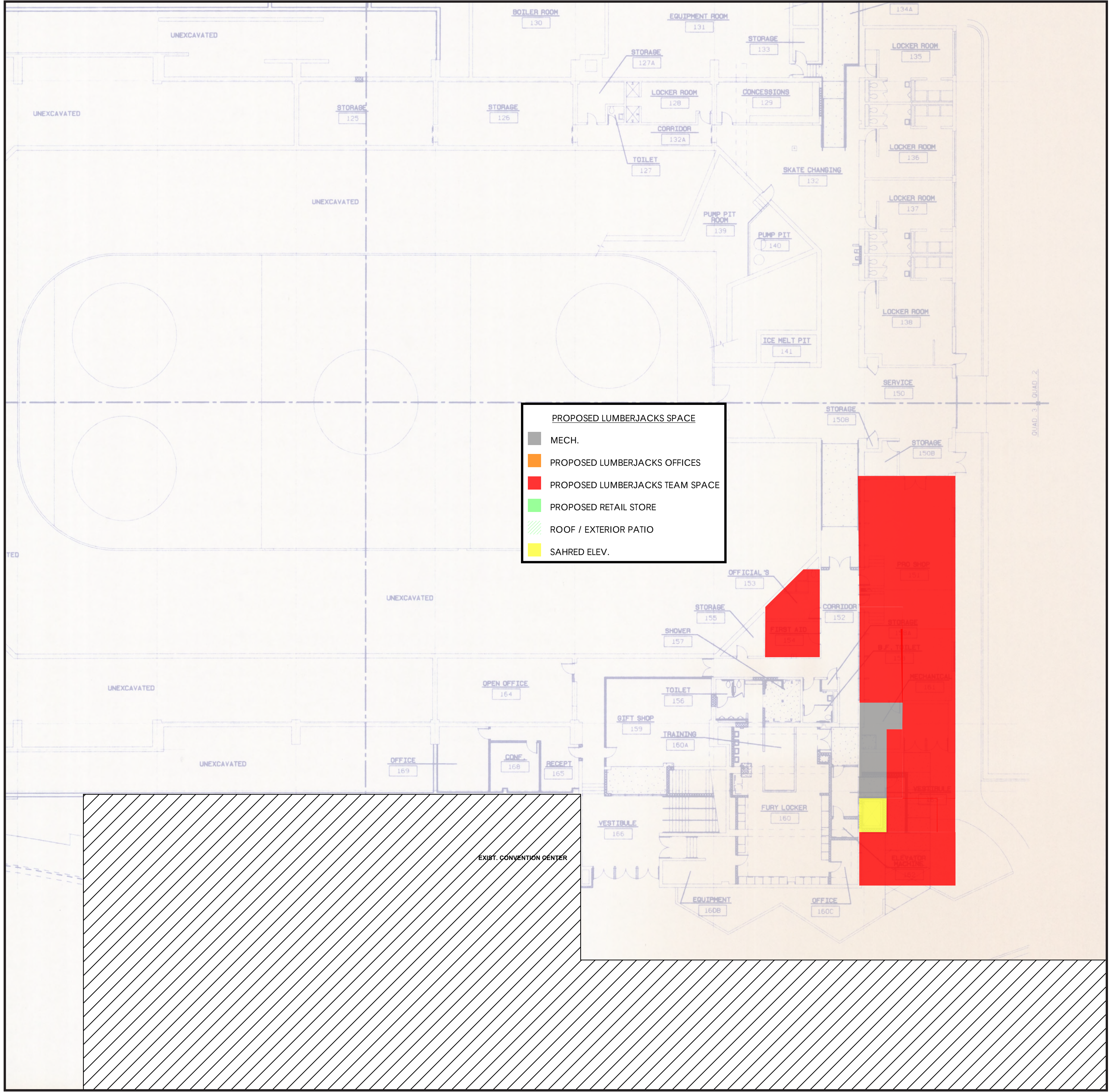


ANTICIPATED CONCOURSE LEVEL SCOPE OF WORK PLAN

PRELIMINARY + ADVISORY NOT FOR CONSTRUCTION

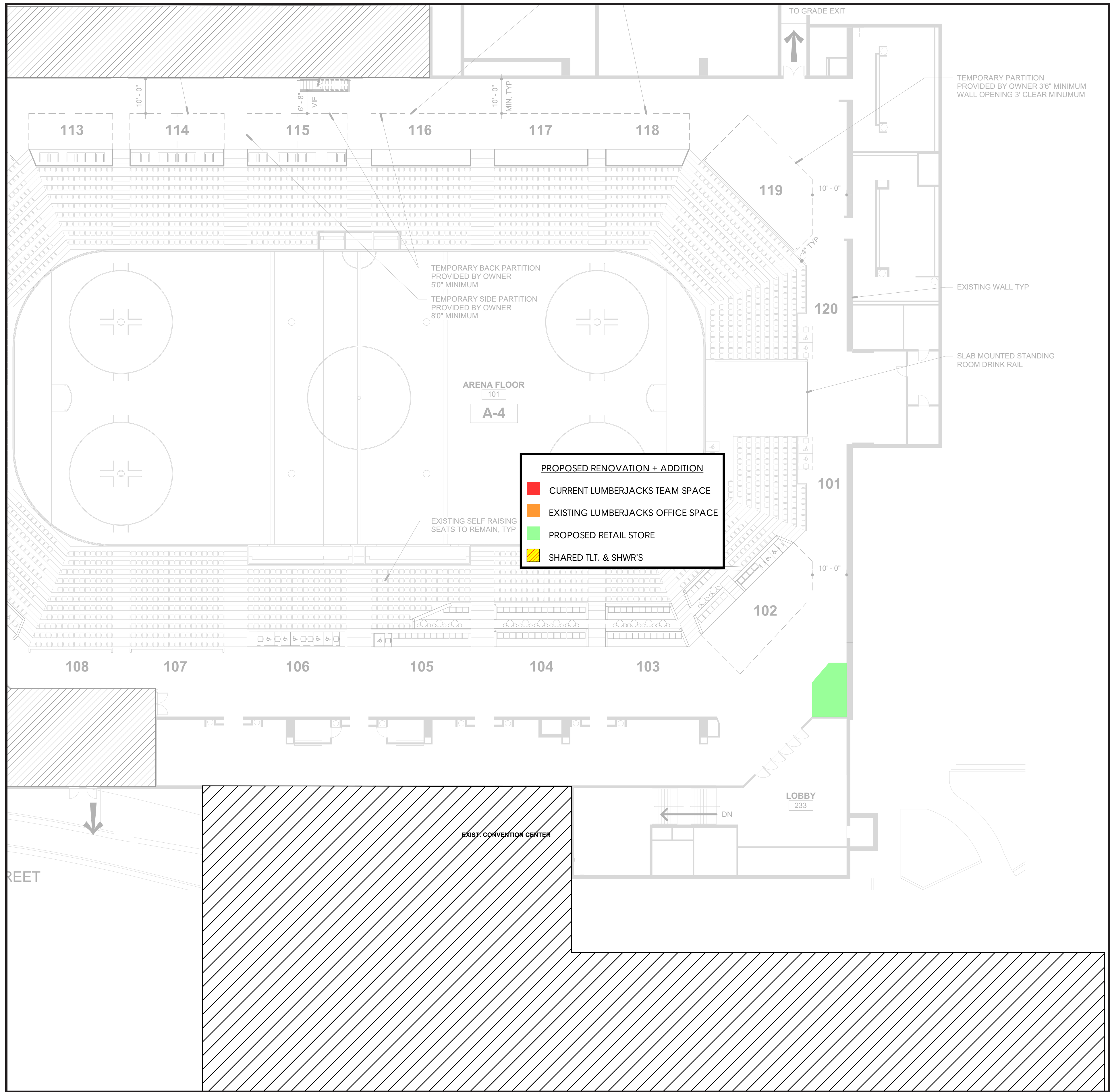


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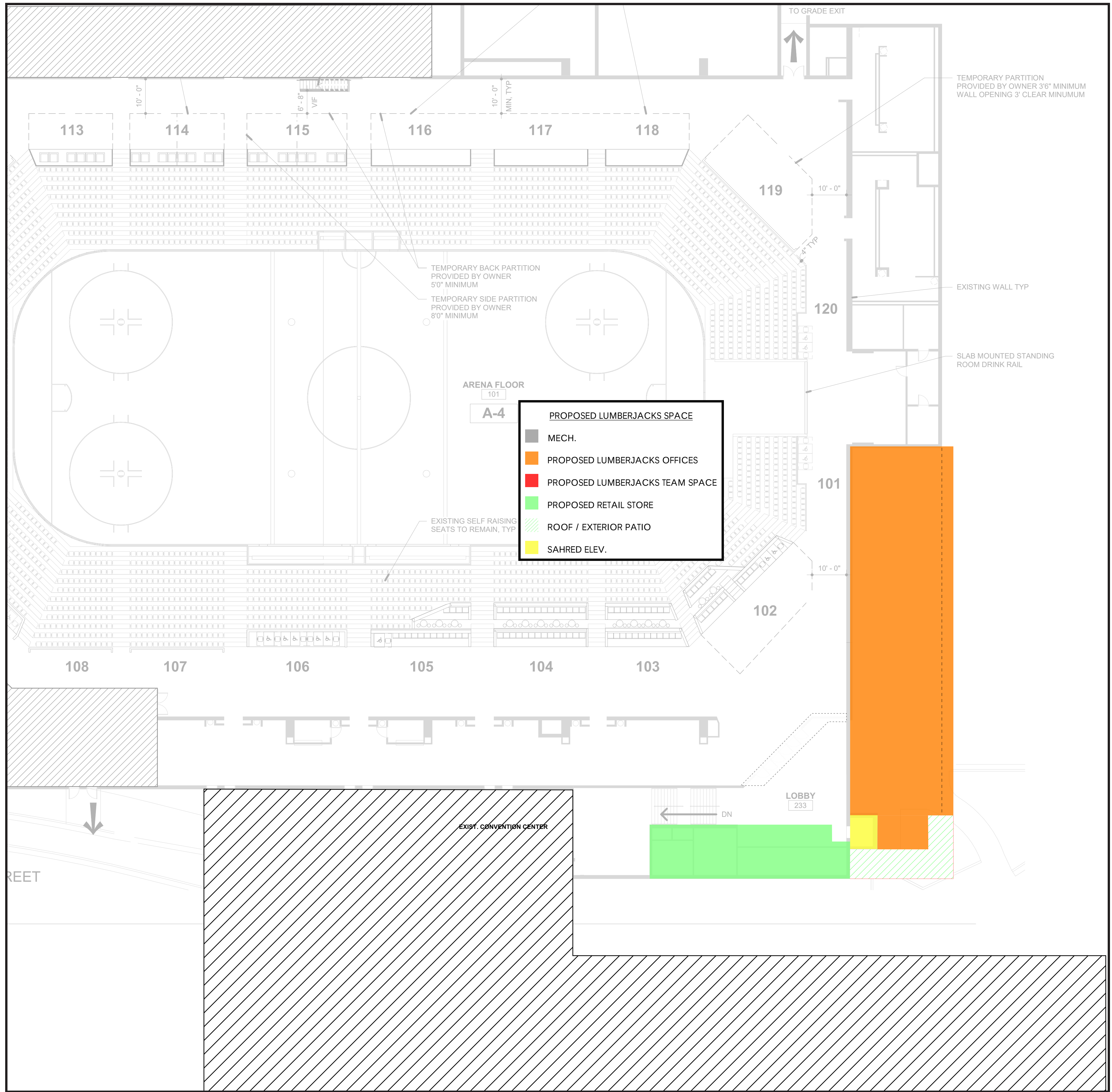


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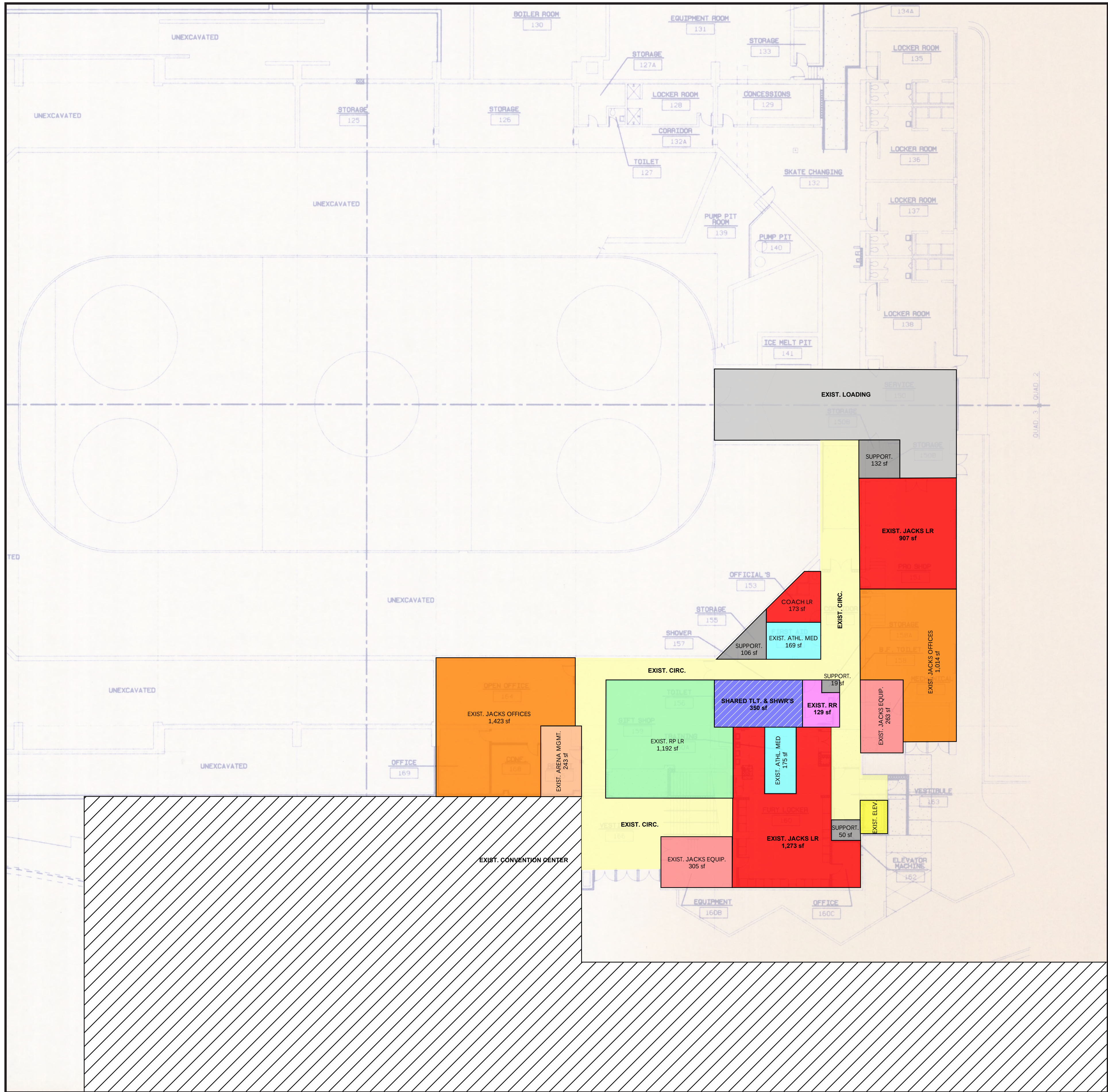


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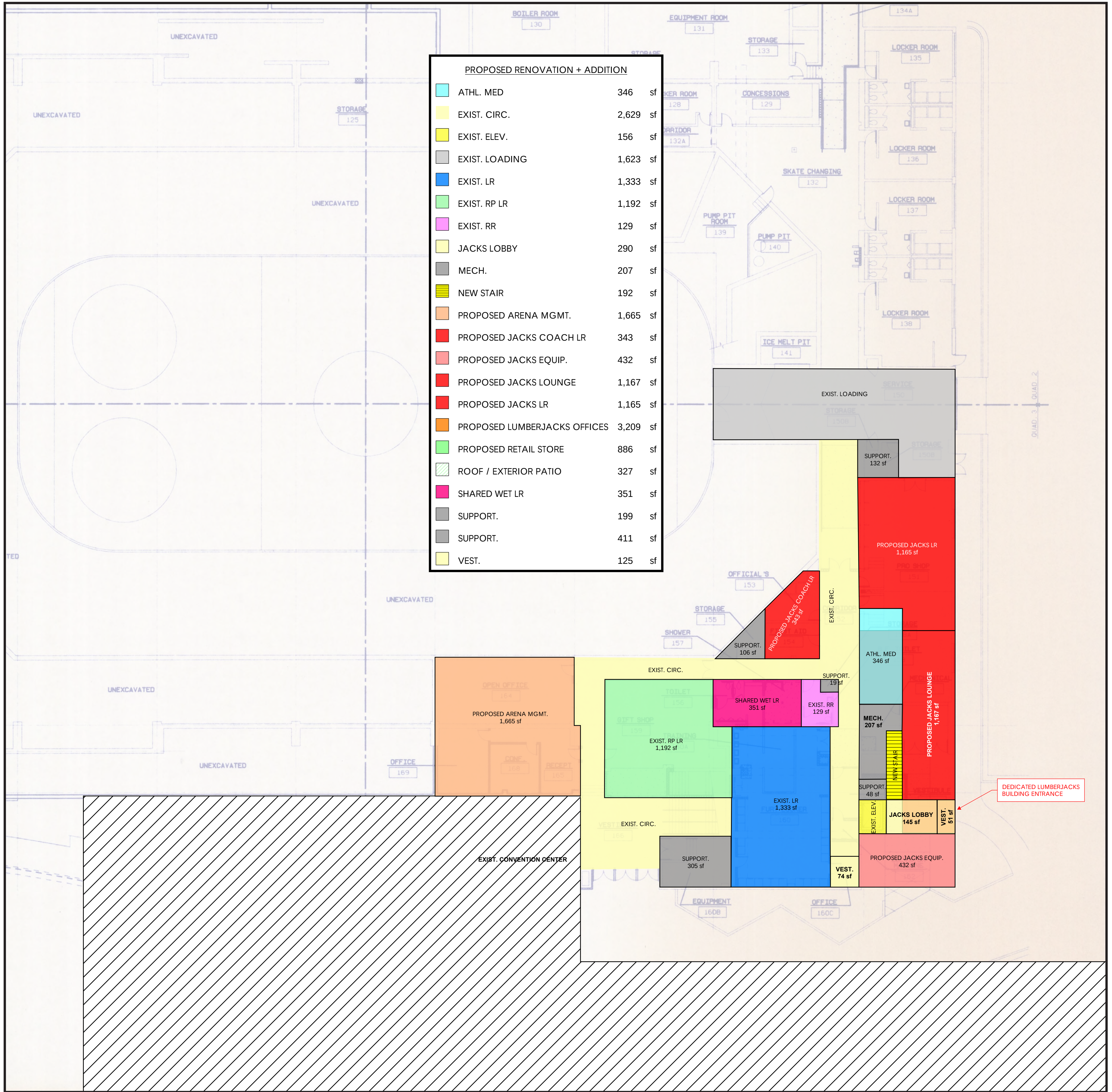


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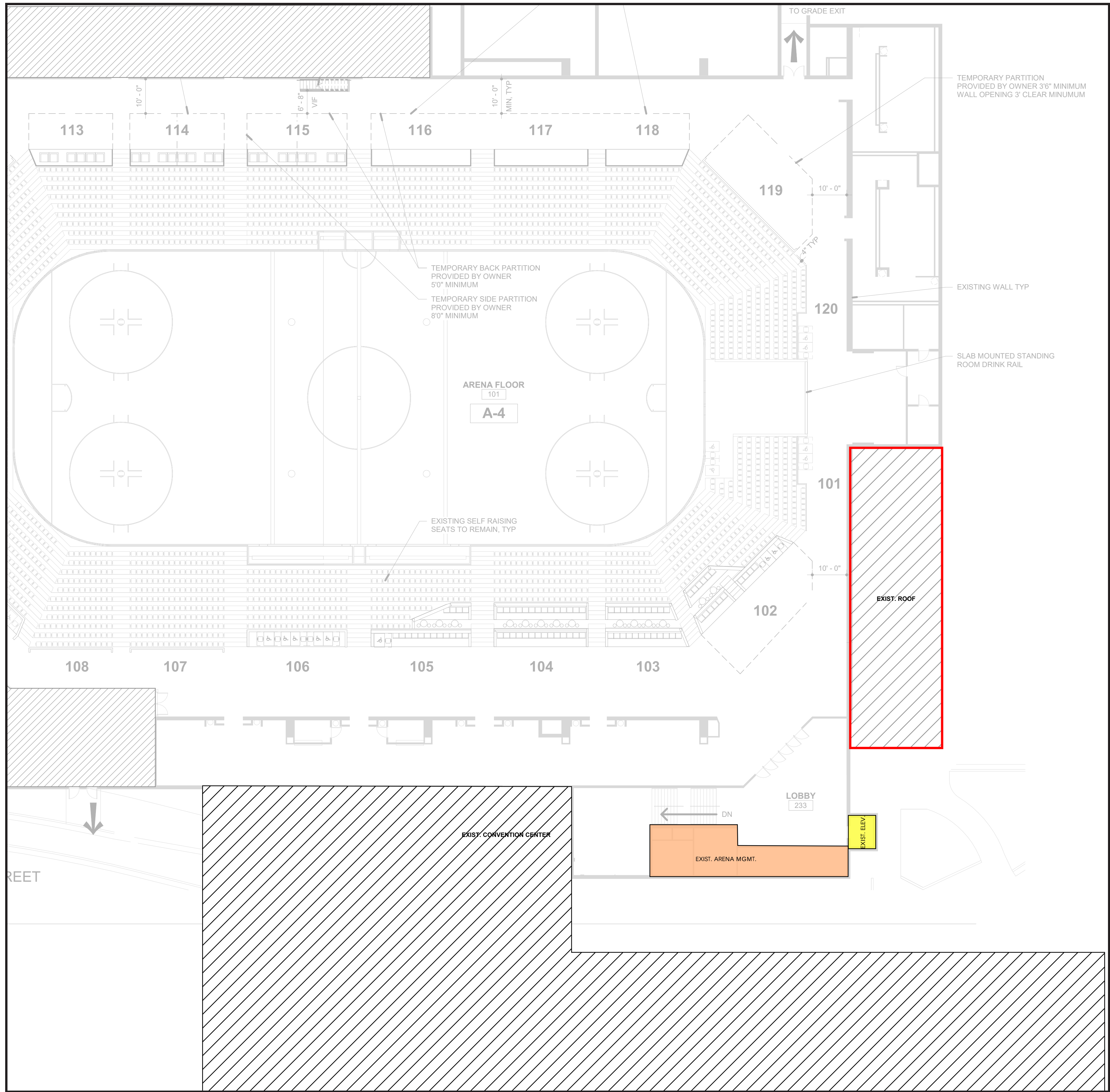


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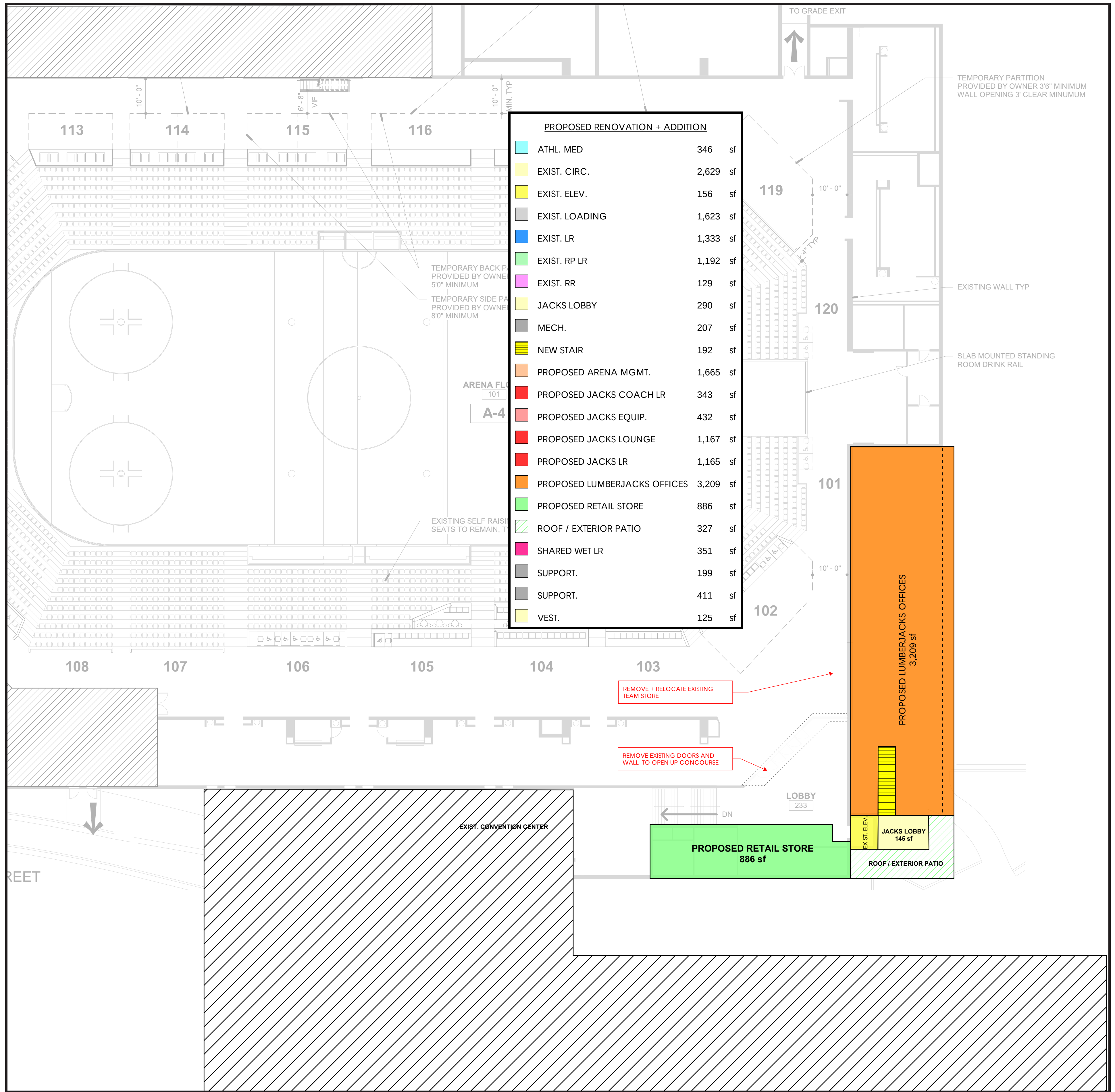


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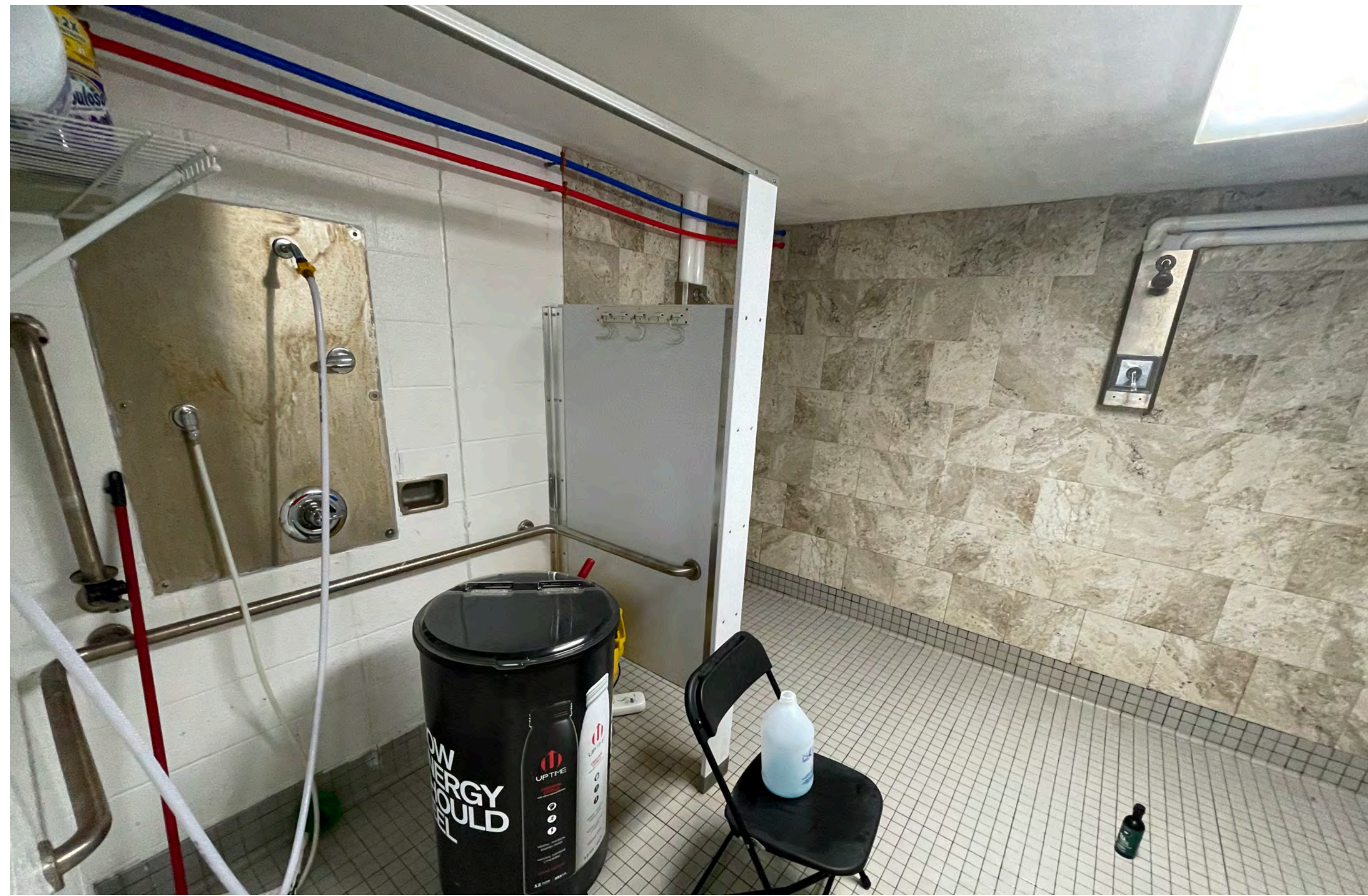
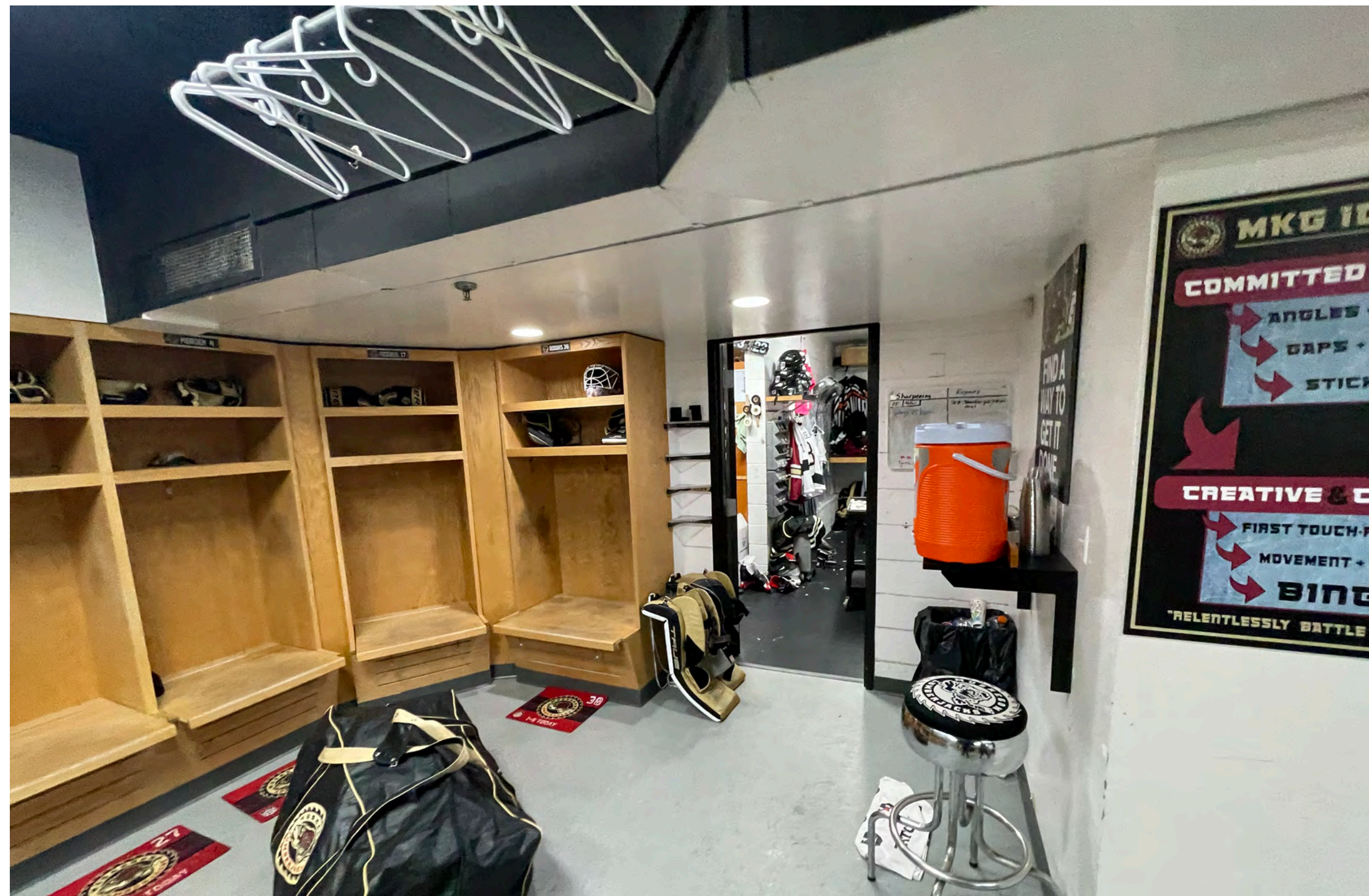


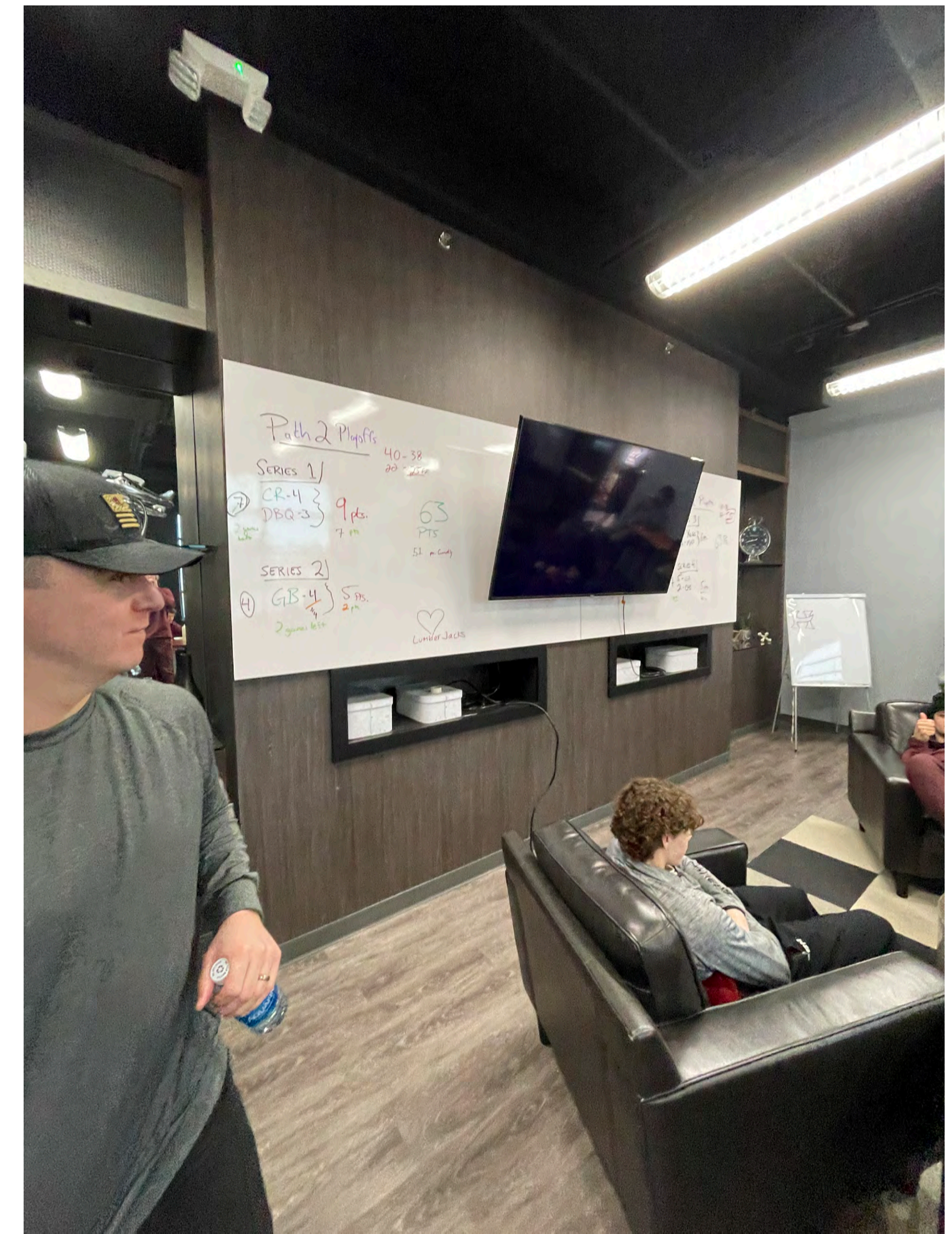
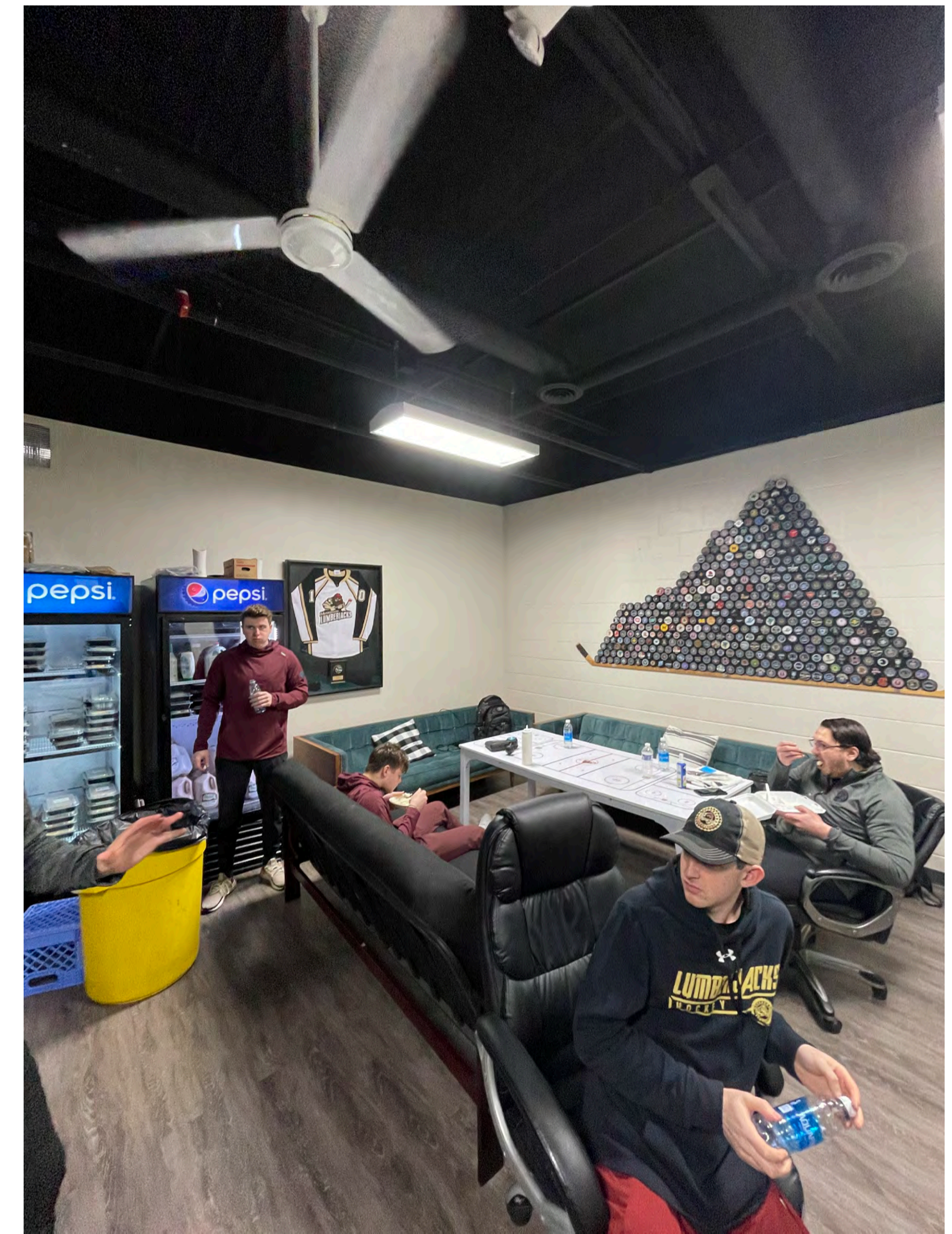
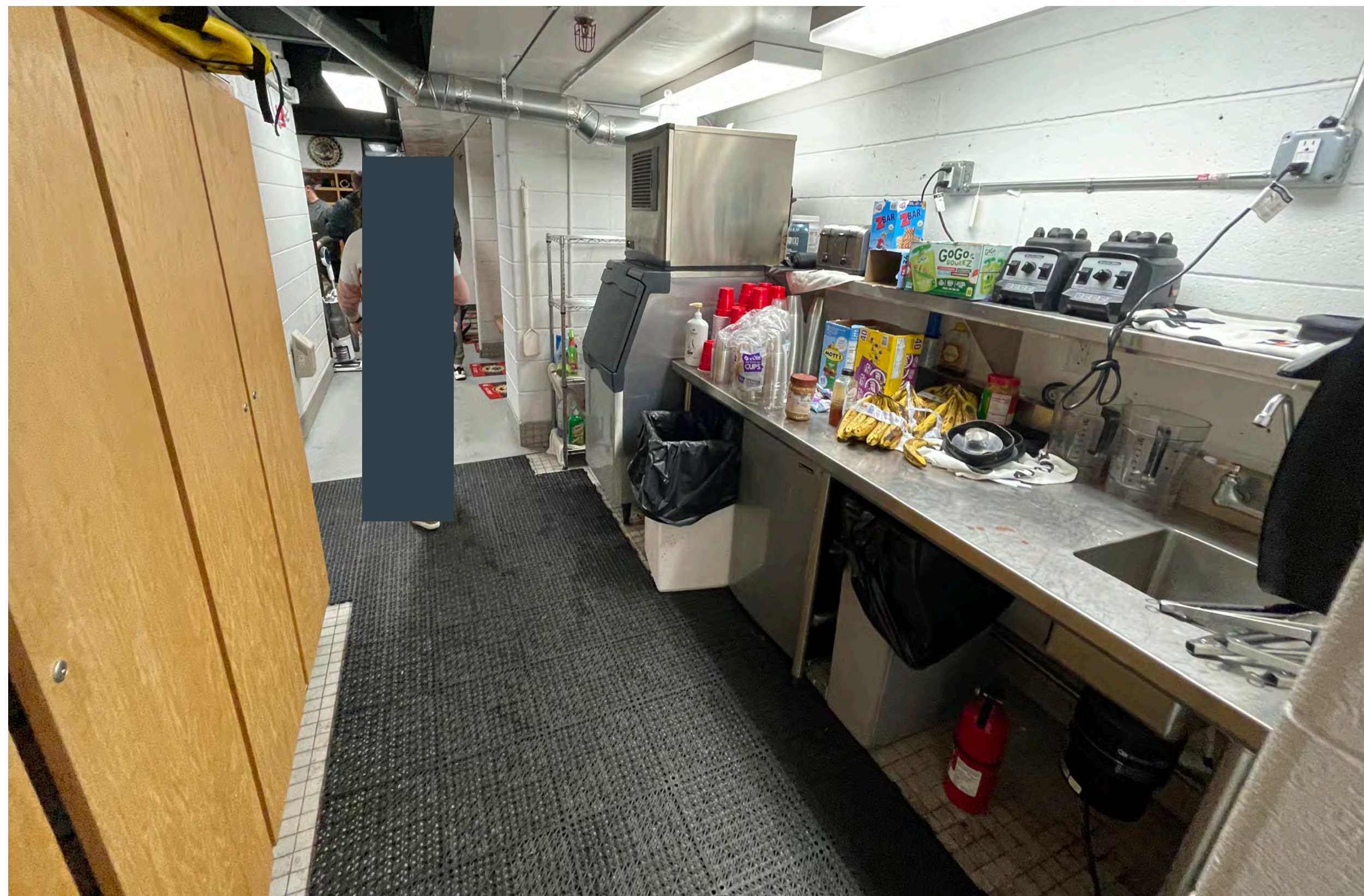
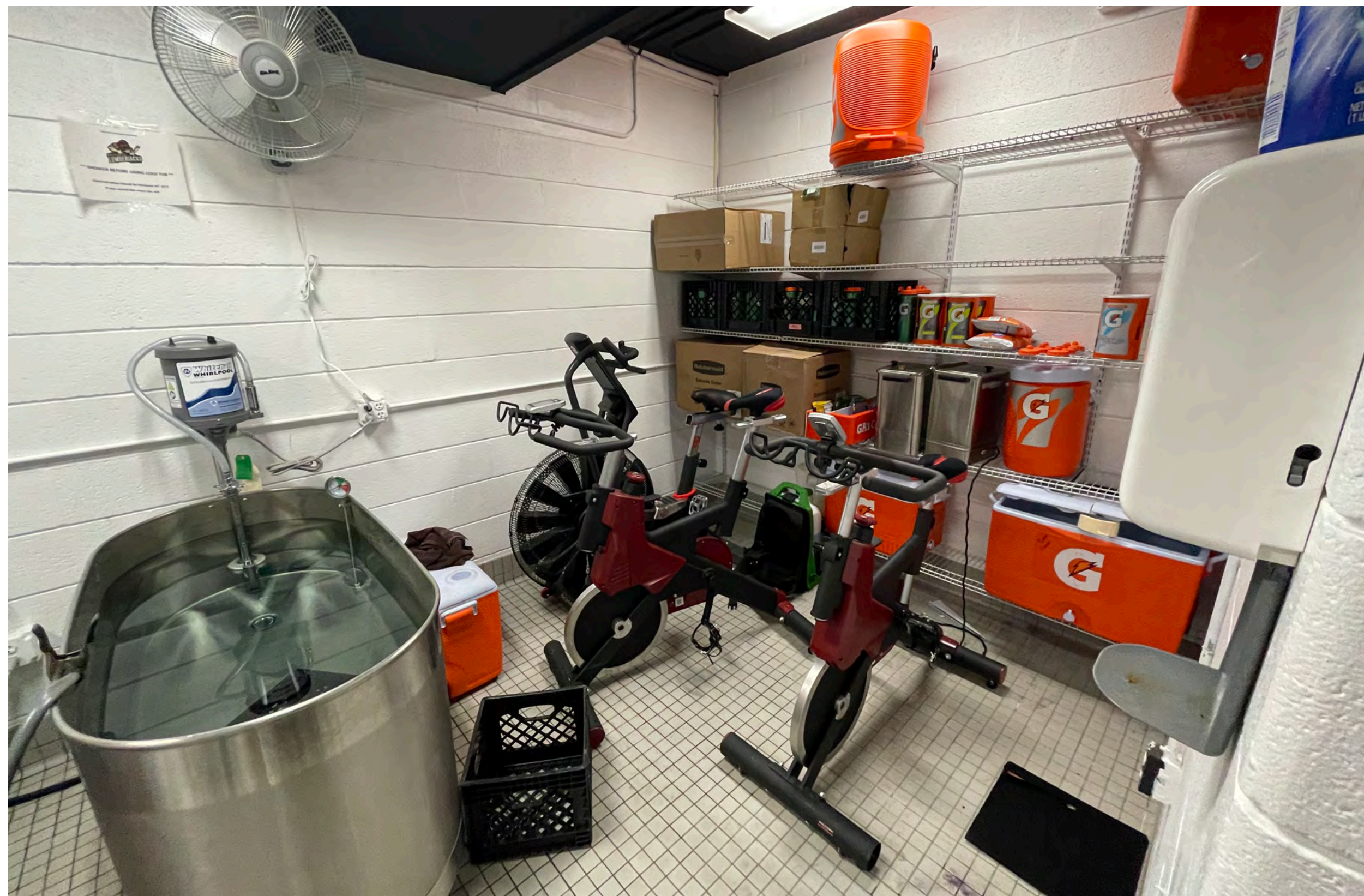
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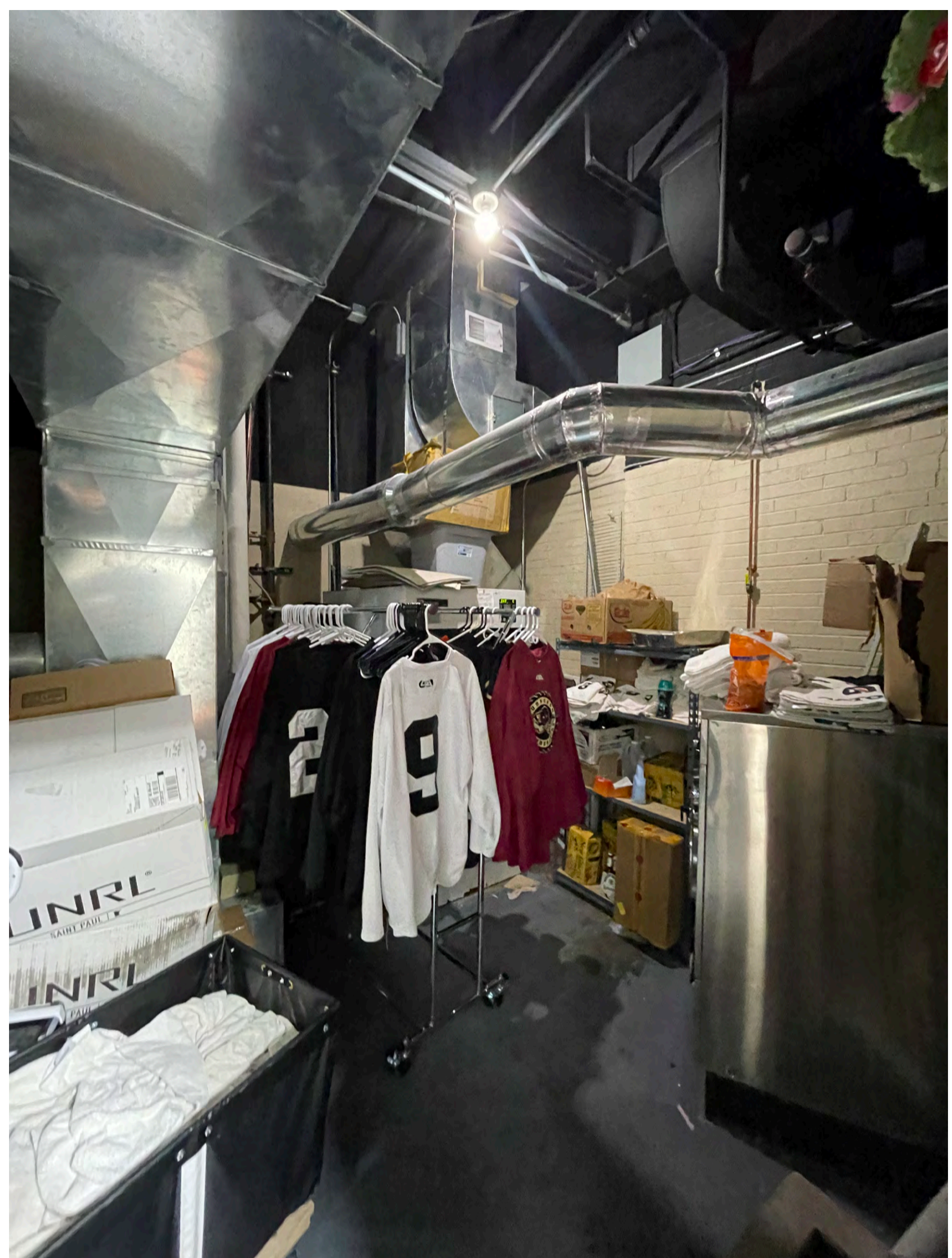
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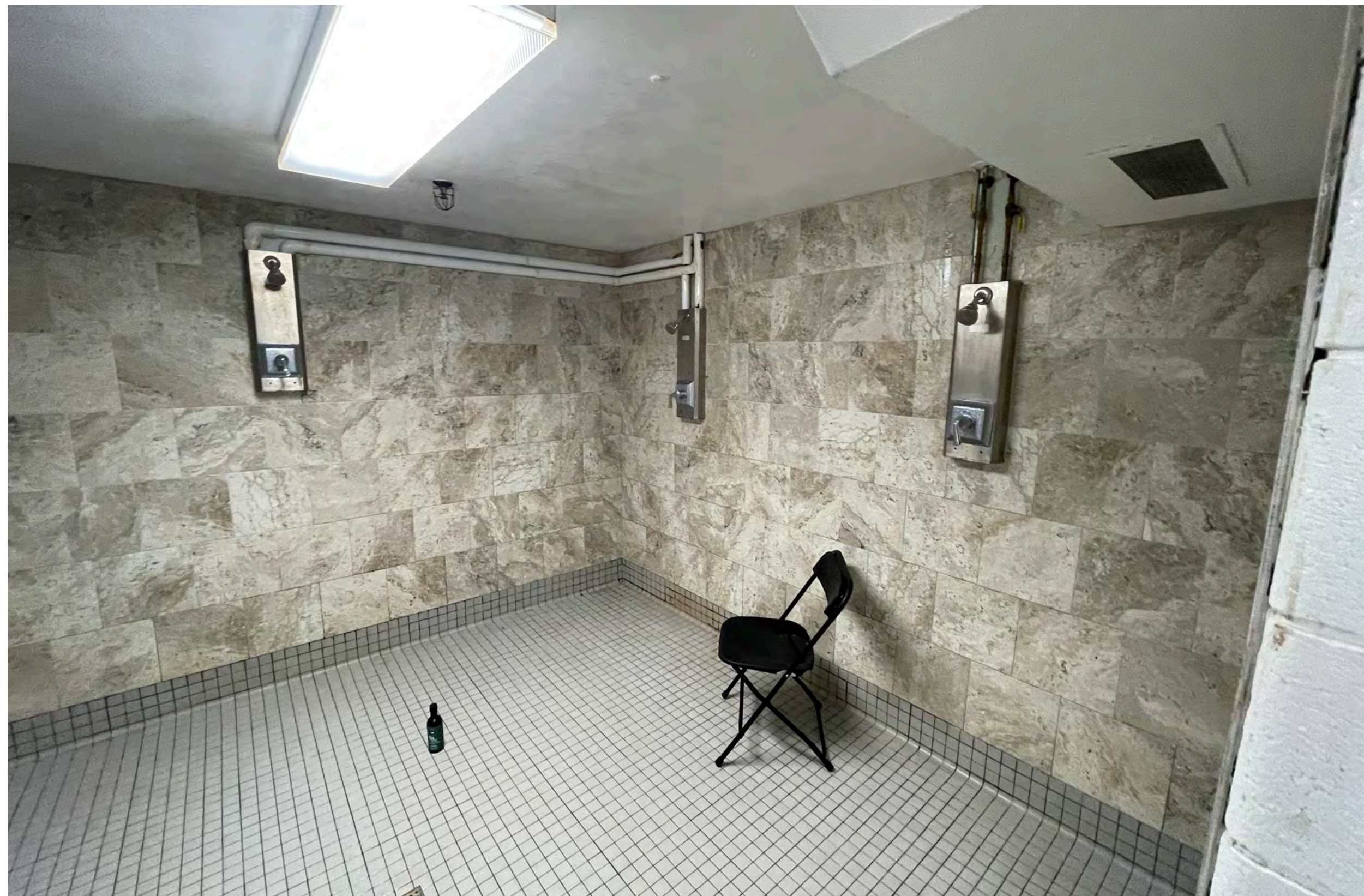
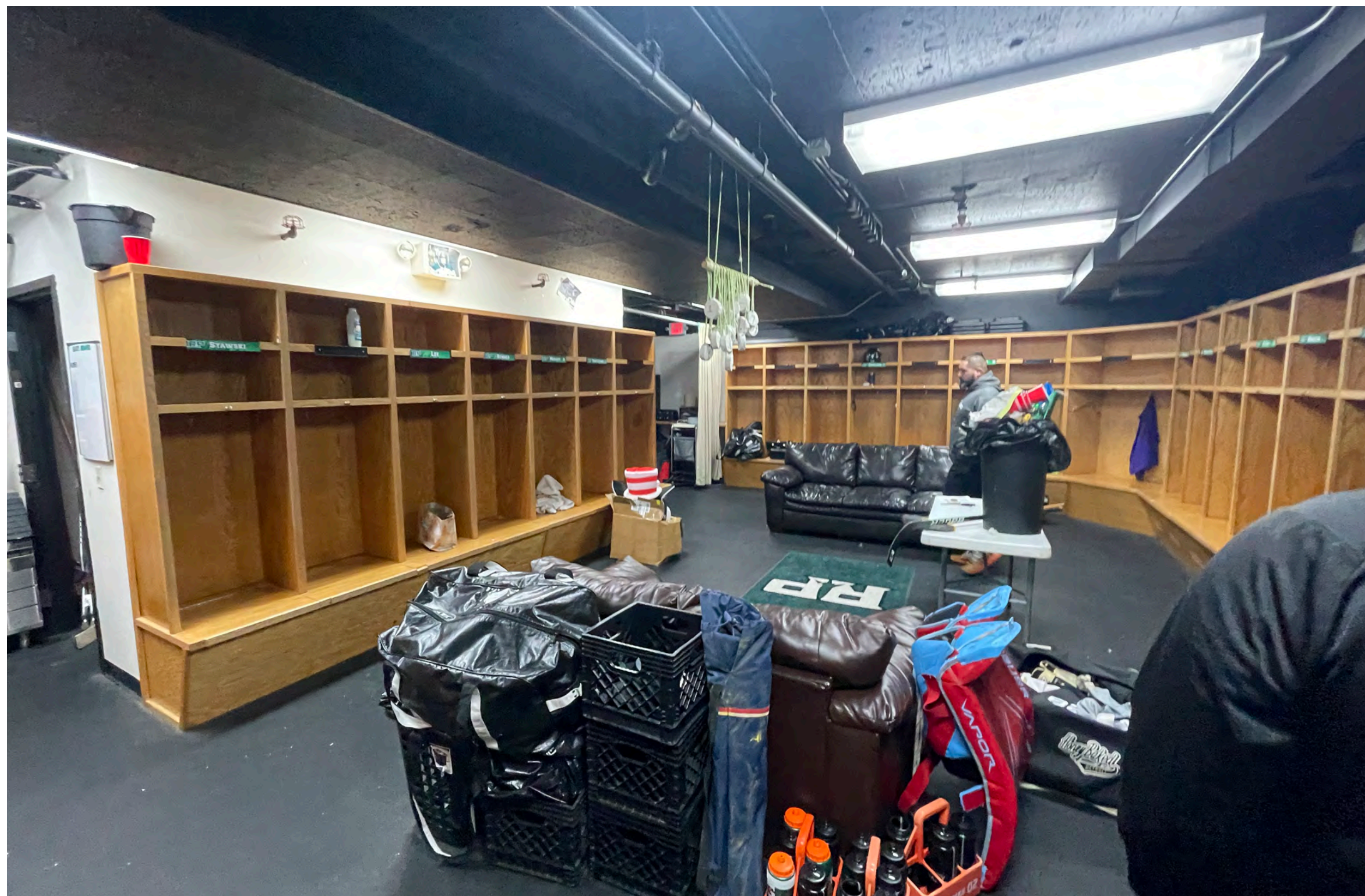


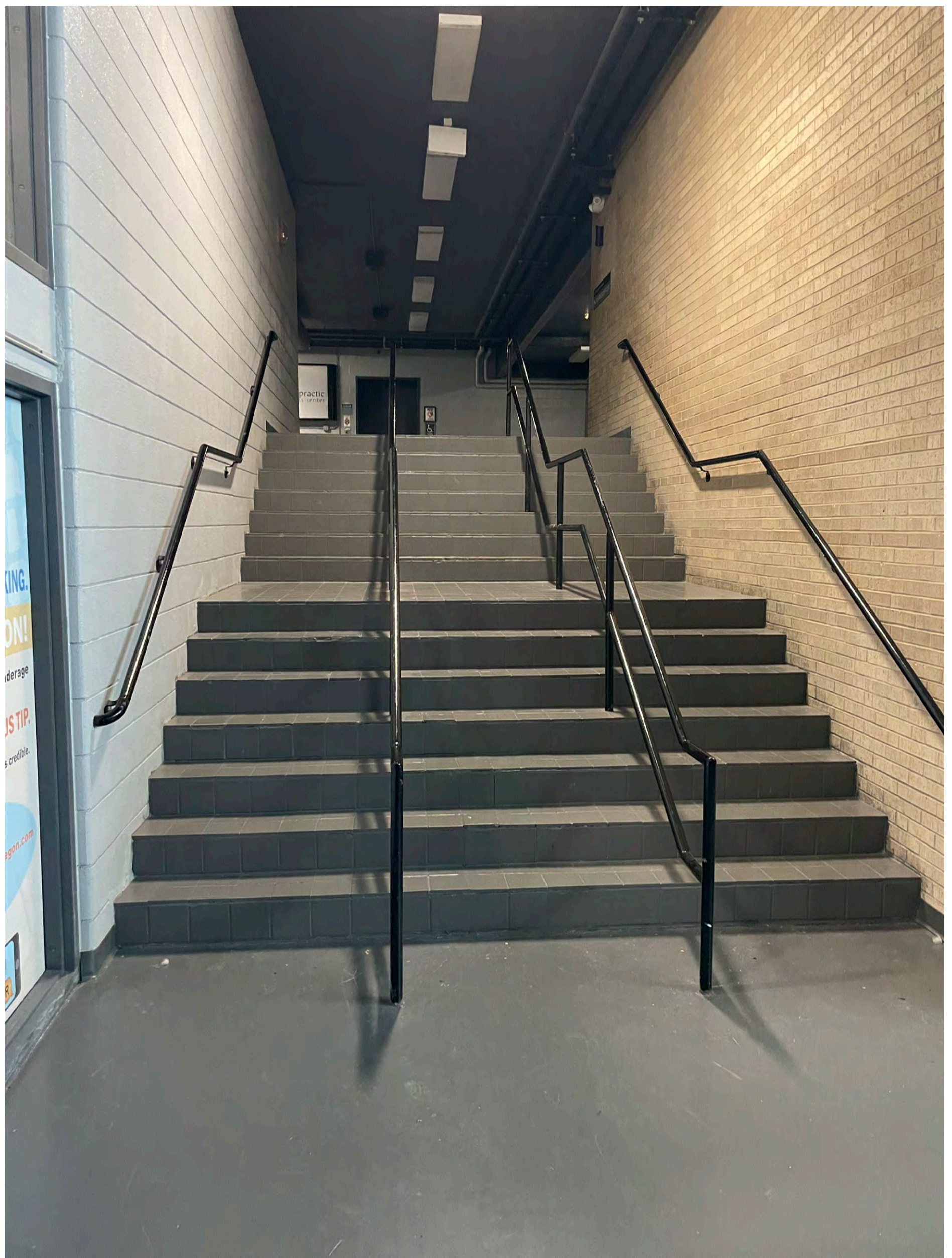
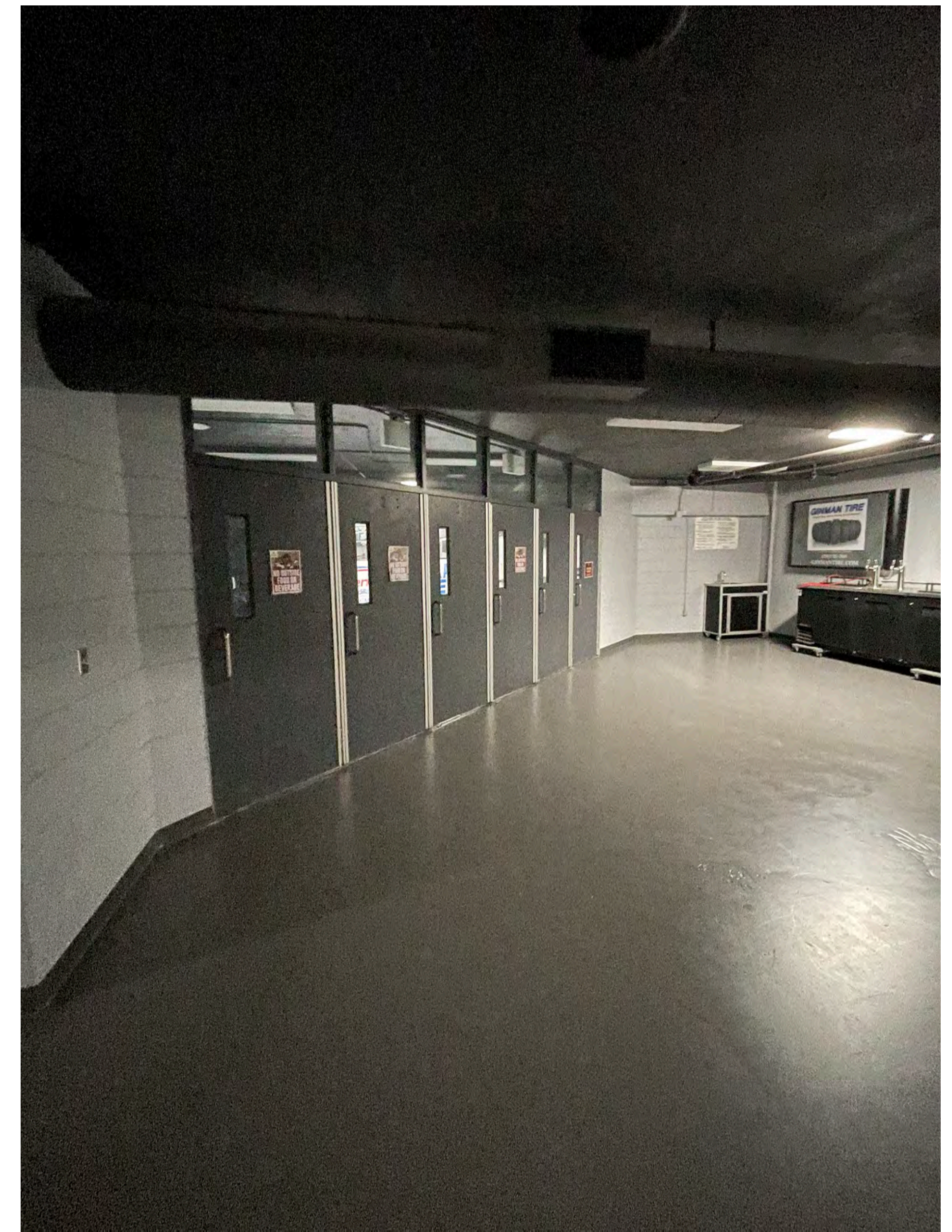
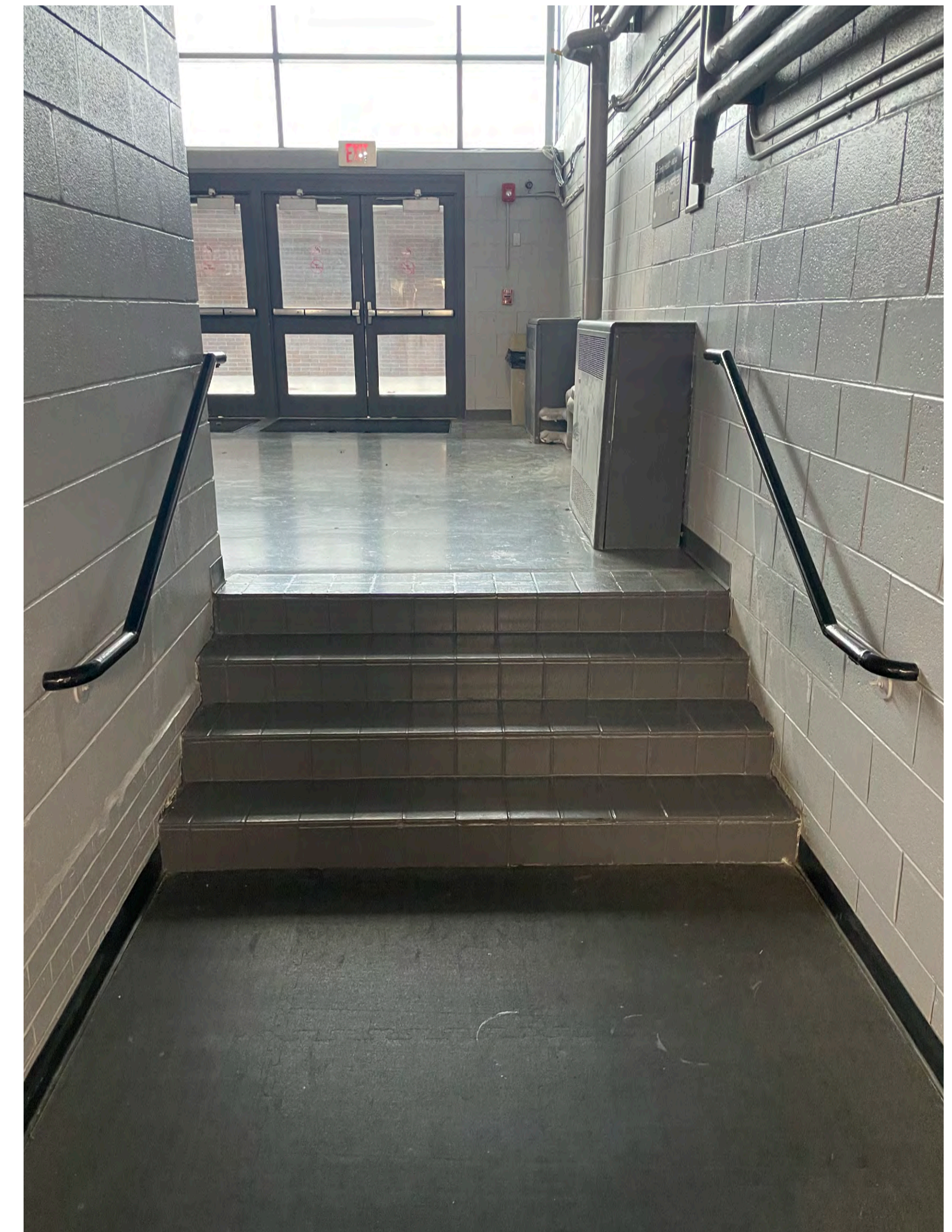
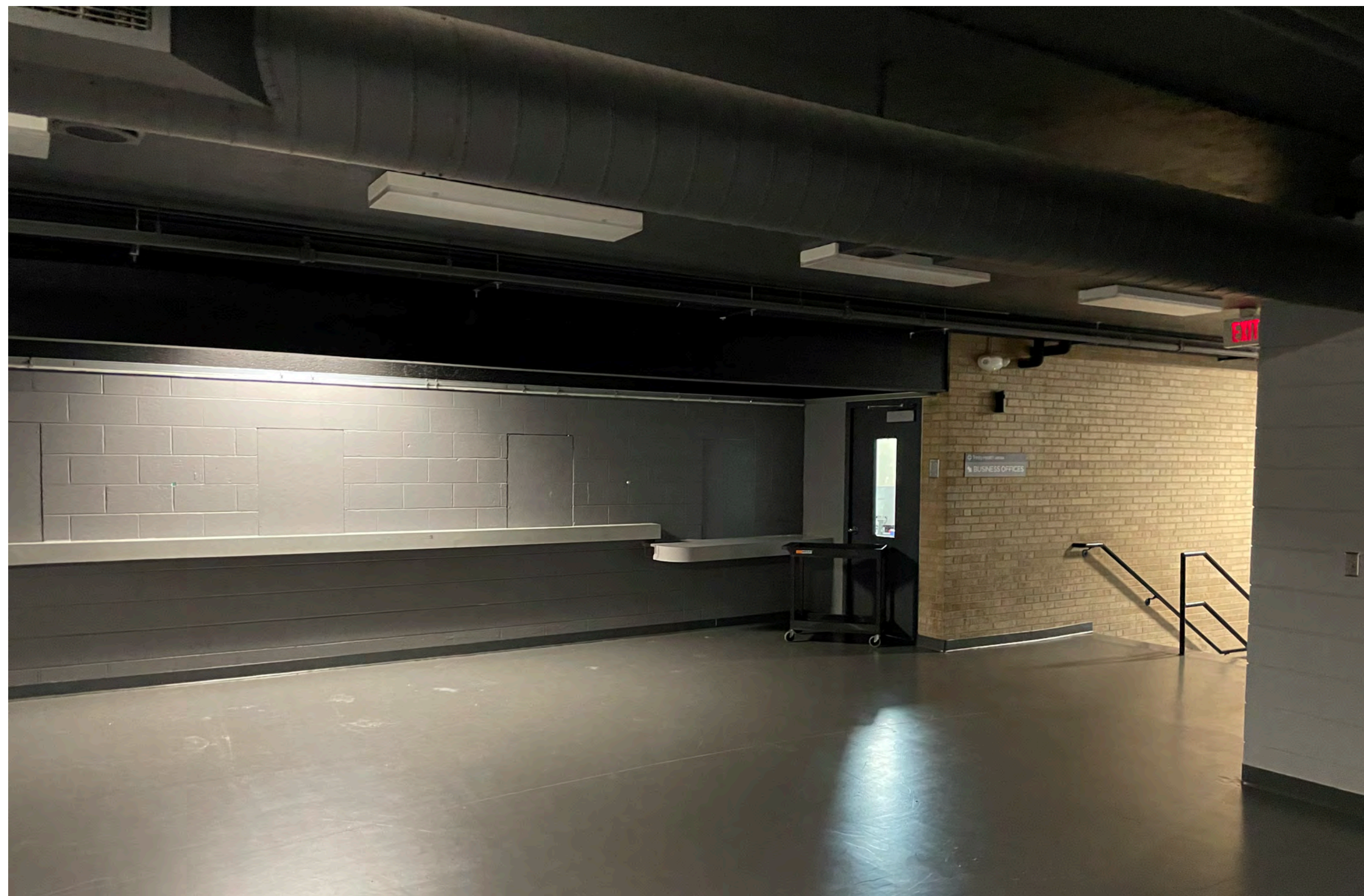


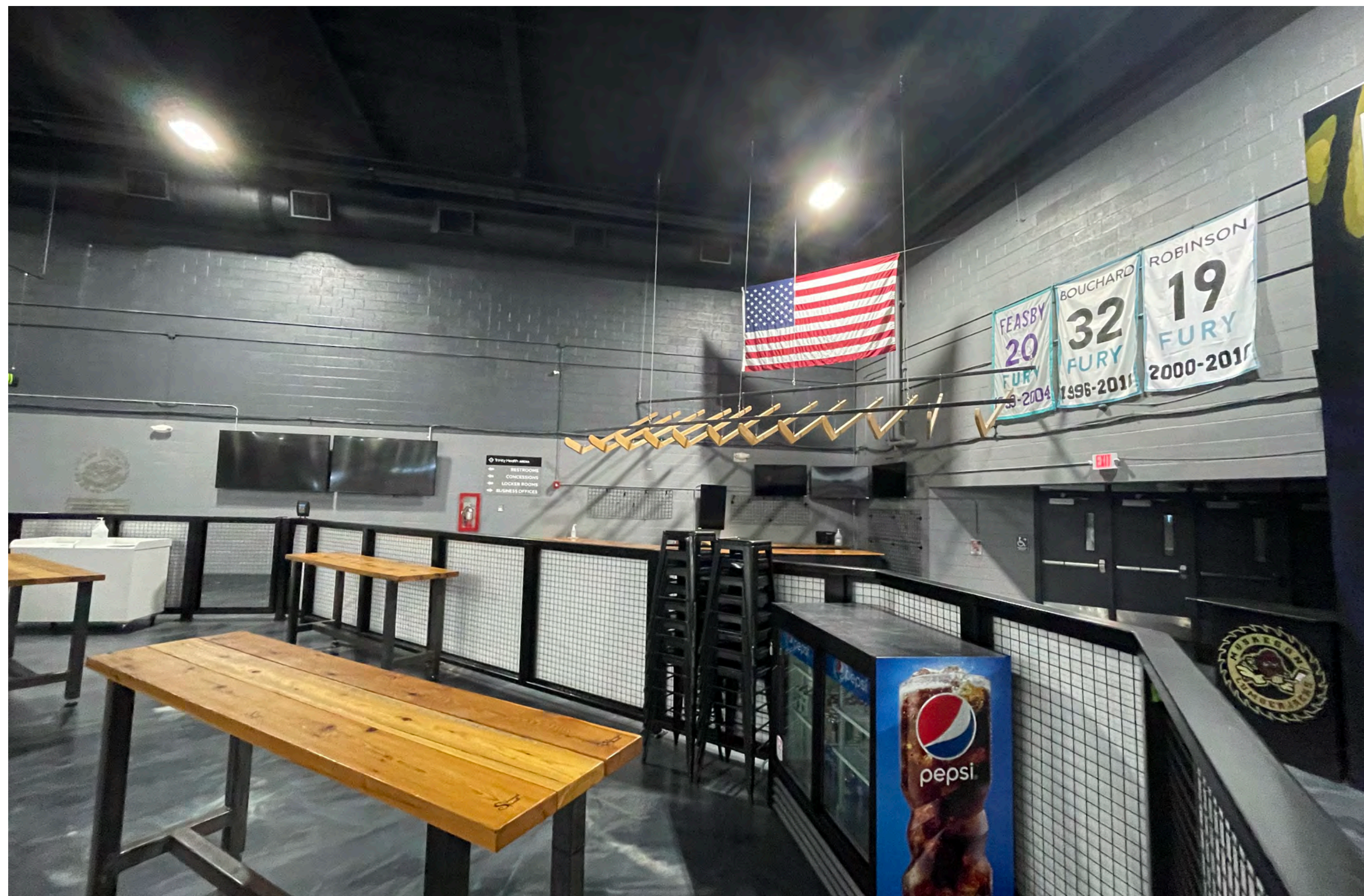
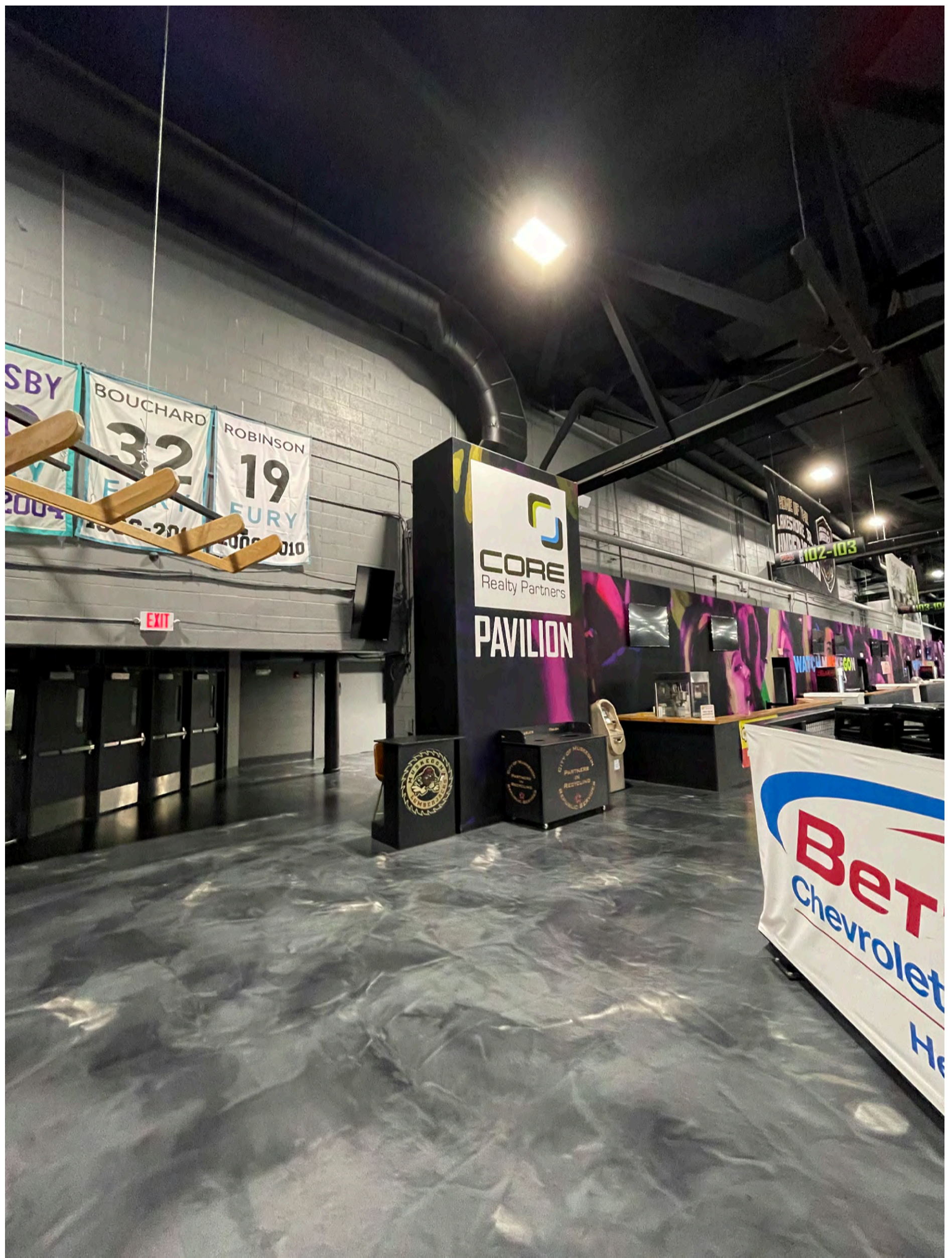
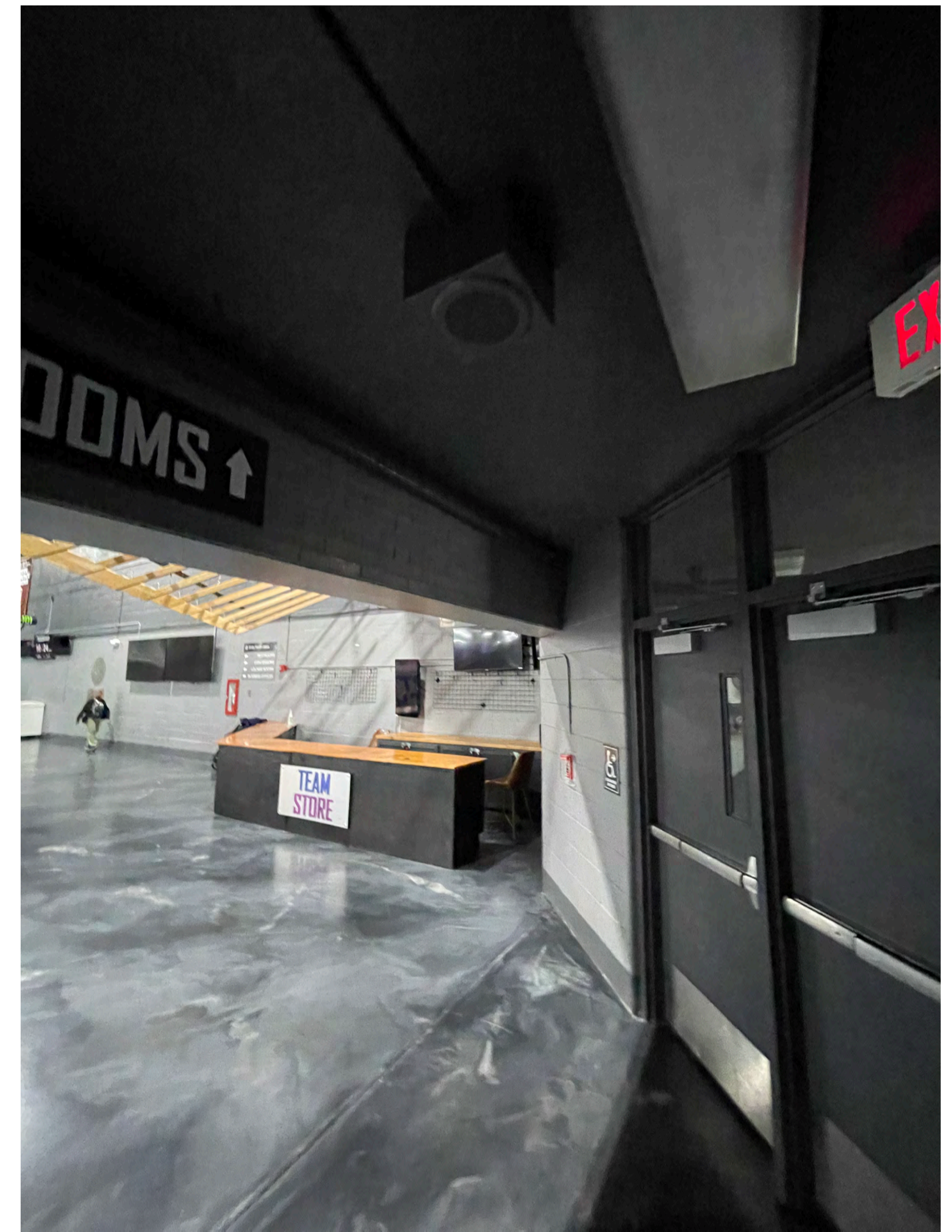
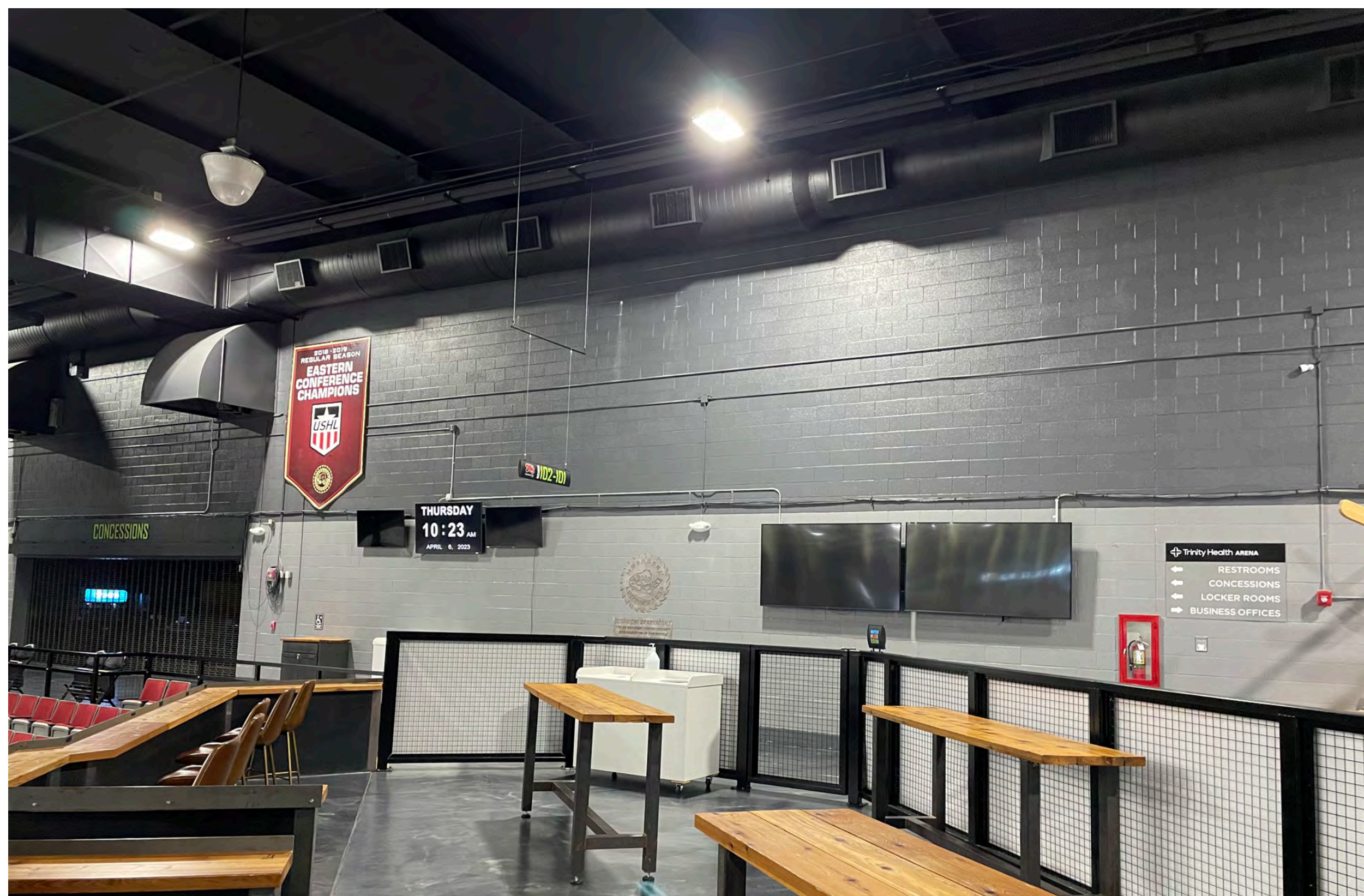
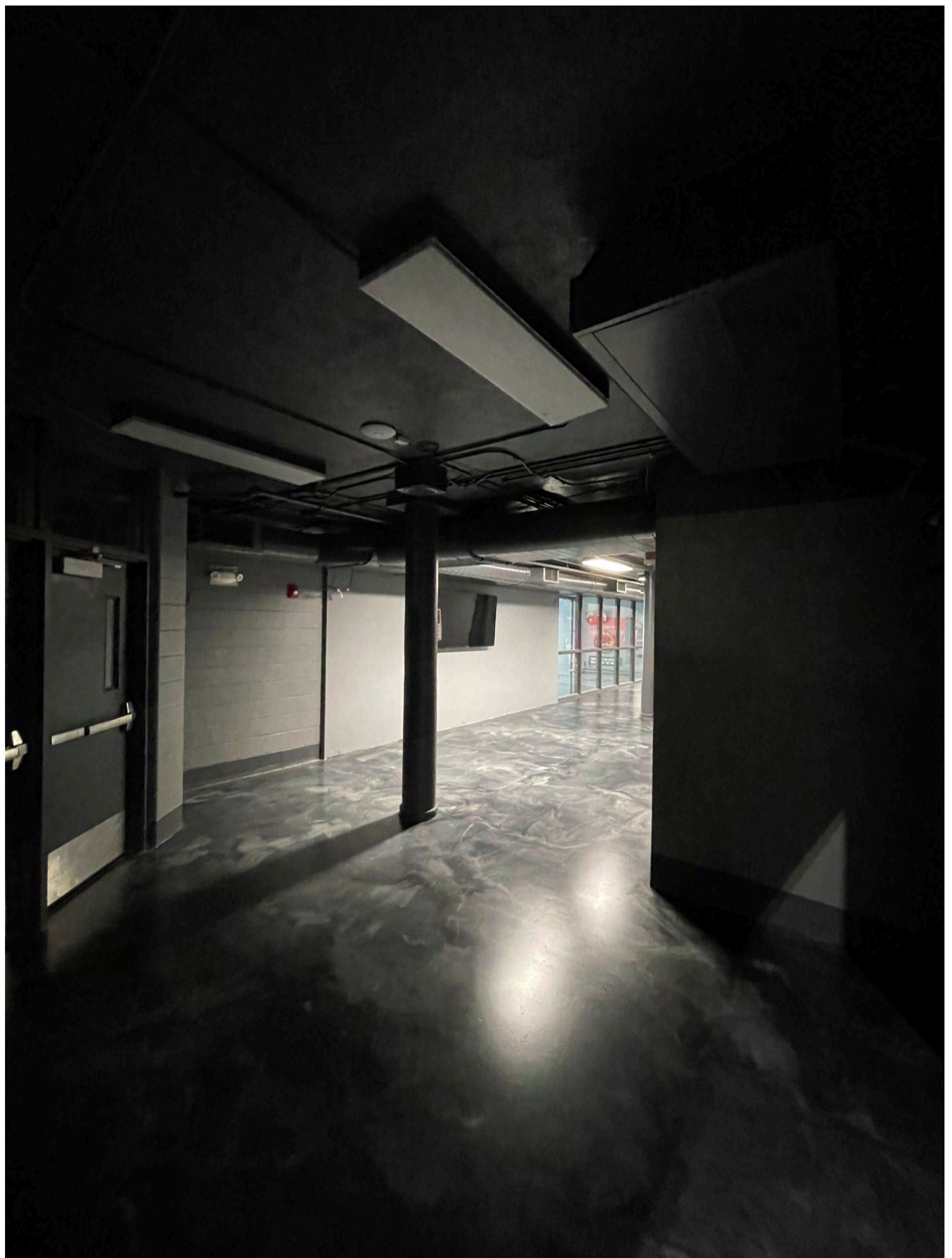
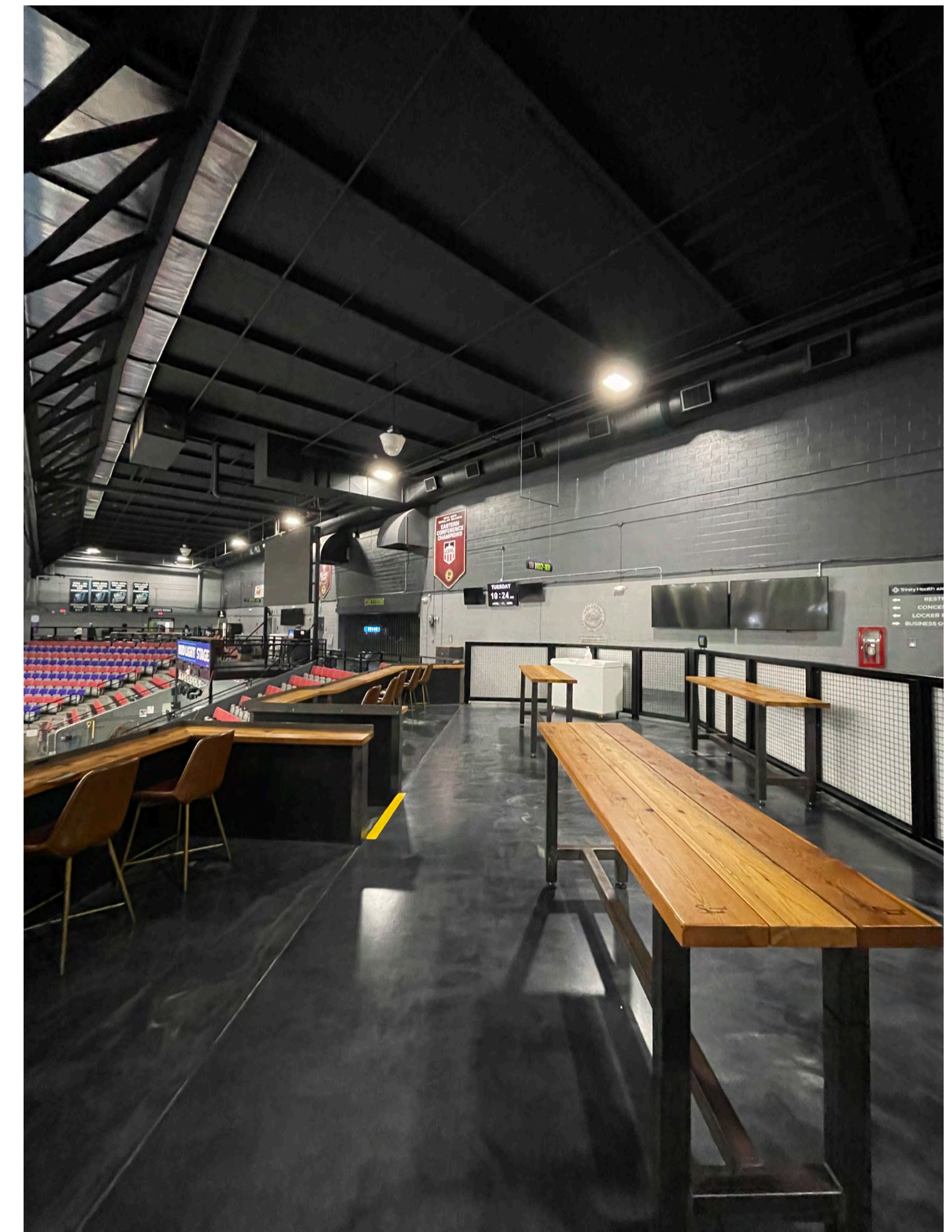












WATCH MUSKEGON

Agenda Item Review Form

Muskegon City Commission

Commission Meeting Date: April 25, 2023	Title: Ottawa Bridge SHPO Meeting
Submitted By: Dan VanderHeide	Department: DPW
Brief Summary: The consultant working on the Ottawa Bridge removal project has asked that we share the findings by the State Historic Preservation Office (SHPO) with the public and seek feedback.	
Detailed Summary & Background: The Ottawa Street bridge is part of an MDOT project that has bundled several locally-owned bridges that need to be removed. MDOT is leading the project and funding it, the City's role is limited to providing information and guidance and approval of the final project details. MDOT's consultant (AECOM) submitted for routine SHPO clearance, but was notified that the bridge is eligible for listing on the national register of historic places. As a result, SHPO determined that removal of the bridge would have an "adverse effect" on the bridge from a historic preservation perspective. Due to this finding, the City needs to receive feedback from the public. It's important to remember that despite being <i>eligible</i> for listing on the historic register, that does not make an item intrinsically historic. The Ottawa bridge is not unique, nor has it attracted historic interest by the community. The bridge no longer serves a purpose – the park it leads to is accessible by a driveway from the other side of the river. Furthermore, the bridge is in extremely poor condition and has been closed for years. The bridge is being removed because it is beyond repair. Were the bridge to be listed and the City make efforts to save it the cost would be very significant, staff believes it would be unlikely to receive grant funding, and the bridge would, at best, serve as one of two entrances to a small park.	
Goal/Focus Area/Action Item Addressed: Enhanced internal and community communication	
Amount Requested: N/A	Amount Budgeted: N/A
Fund(s) or Account(s): N/A	Fund(s) or Account(s): N/A
Recommended Motion: N/A - For information and public comment only.	
Approvals: Immediate Division Head ☒ Legal Review ☐ Other Division Heads ☐ Information Technology ☐ Communication ☒	Guest(s) Invited / Presenting Yes ☐ No ☒
For City Clerk Use Only: Commission Action:	



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
MICHIGAN STRATEGIC FUND
STATE HISTORIC PRESERVATION OFFICE

QUENTIN L. MESSER, JR.
PRESIDENT

April 14, 2022

DANA REINKE
ENVIRONMENTAL AND RIGHT-OF-WAY SPECIALIST
FEDERAL HIGHWAY ADMINISTRATION
315 W ALLEGAN STREET ROOM 201
LANSING MI 48933

RE: ER22-559 Removal of Ottawa Street Bridge 7700 (#614461800205B01) over the Muskegon River Branch, 0.15 Miles North of Bayou Avenue, Sec. 17, T10N, R16W, City of Muskegon, Muskegon County (FHWA)

Dear Ms. Reinke:

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed the proposed undertaking at the above-noted location. The State Historic Preservation Officer (SHPO) does not concur with the determination that no historic properties will be affected within the area of potential effects of this undertaking. Based on the information provided for our review, it is the opinion of the SHPO that the proposed undertaking will have an **adverse effect** on the Ottawa Street Bridge over Muskegon River, which appears to meet the criteria for listing in the National Register of Historic Places under Criteria C in the area of transportation at the local level of significance.

MDOT's inventory of historic bridges attributes a construction date of 1900, and indicates that it is the oldest known surviving example of a concrete girder bridge in Michigan. In truth, it appears that it is a concrete-encased, multi-beam steel stringer bridge built between 1926 and 1932 on plans widely used by the Michigan State Highway Department. As such, it is a good example this bridge type with a high level of historic integrity.

This undertaking meets the criteria of adverse effect because: *the undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association*, 36 CFR § 800.5(a)(1). Specifically, the undertaking will result in physical destruction of or damage to all or part of the property.

Federal agencies are required to avoid, minimize, or mitigate adverse effects. Please note that if the federal agency and the SHPO concur that the adverse effect cannot be avoided, the Section 106 process will not conclude until the consultation process is complete, an MOA is developed, executed, and implemented, and, if applicable, the formal comments of the Advisory Council have been received, 36 CFR § 800.6. For more information on your responsibilities and obligations for projects that will have an adverse effect on historic properties under 36 CFR § 800.6, please review the enclosed materials.

We remind you that federal agency officials or their delegated authorities are required to involve the public in a manner that reflects the nature and complexity of the undertaking and its effects on historic properties per 36 CFR § 800.2(d). The National Historic Preservation Act also requires that federal agencies consult with any Indian tribe and/or Tribal Historic Preservation Officer (THPO) that attach religious and cultural significance to historic properties that may be affected by the agency's undertakings per 36 CFR § 800.2(c)(2)(ii).

The opinion of the SHPO is based on the materials provided for our review. If you believe that there is material that we should consider that might affect our finding, or if you have questions, please contact Brian Grennell, Cultural Resource Management Coordinator, at (517) 335-2721 or by email at GrennellB@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.**



300 NORTH WASHINGTON SQUARE • LANSING, MICHIGAN 48913
michigan.gov/shpo • (517) 335-9840

Finally, the State Historic Preservation Office is not the office of record for this undertaking. You are therefore asked to maintain a copy of this letter with your environmental review record for this undertaking. Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,



Martha MacFarlane-Faes
Deputy State Historic Preservation Officer

MMF:AK:BGG

Enclosures

copy: Advisory Council on Historic Preservation
 Ann Lawrie, MDOT
 Leo Evans, City of Muskegon
 Rebecca Turner, AECOM Technical Services, Inc.

March 22, 2023

Dear City of Muskegon,

SUBJECT: **Section 106 Public Consultation**
 *Structure 7700 – Ottawa Street over the South Branch of the Muskegon River, Muskegon County,
 Michigan*

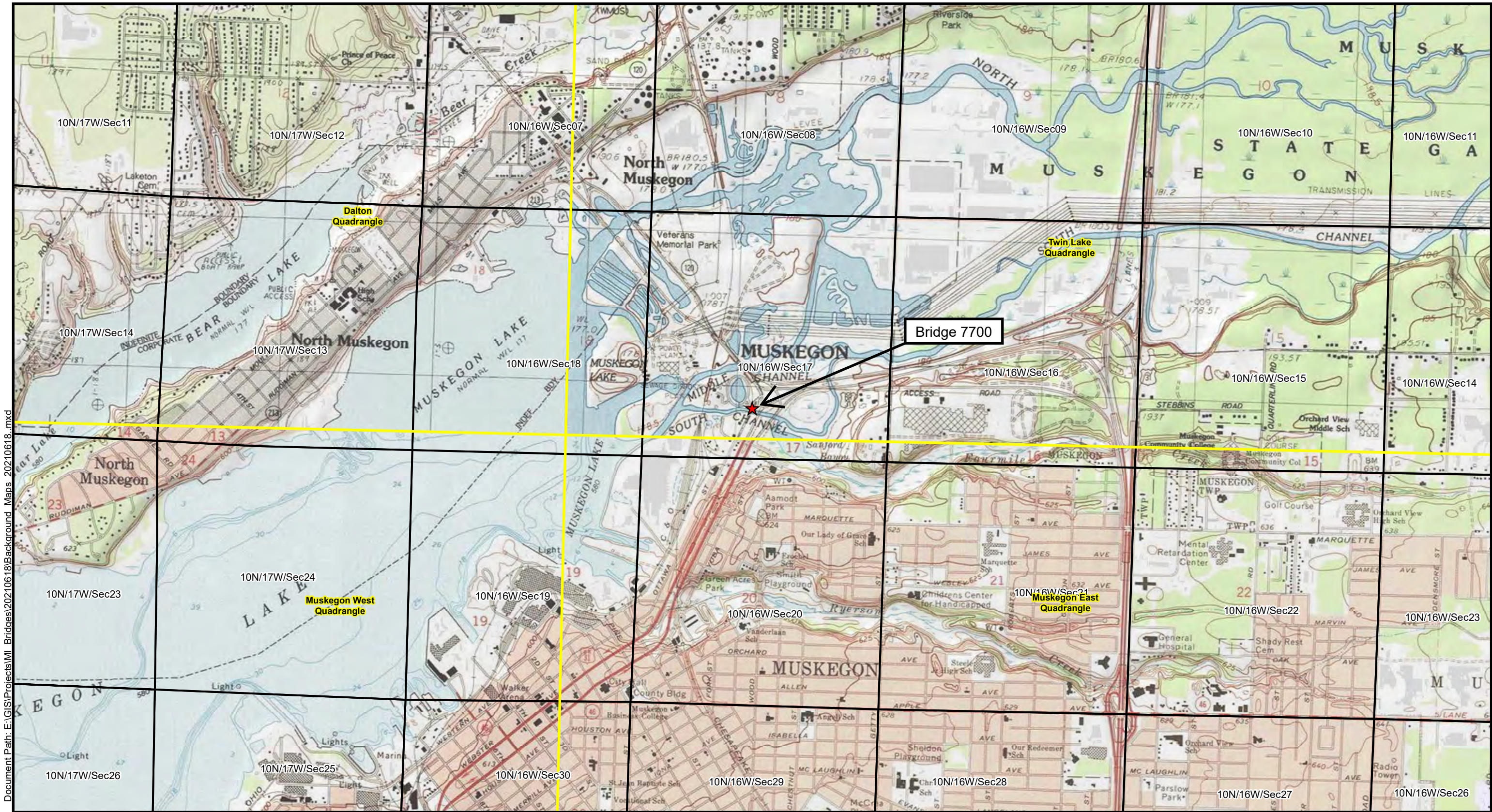
For the MDOT Bridge Bundling Program, it was found that there was an “Adverse Effect” from SHPO for the bridge removal of structure 7700 – Ottawa Street over the South Branch of the Muskegon River. In accordance with 36 CFR 800.6(a)(4), the city shall make the information regarding this finding available to the public, providing the public with an opportunity to express their views on resolving adverse effects of the undertaking. We are recommending that the project be added to the agenda for the next commission meeting in an effort to seek public comment. Please send us the meeting minutes and provide any comments that you receive. Thanks for your support on this project.

If you need additional information about this bridge, please contact us at Charles.stein@aecom.com.

Yours sincerely,



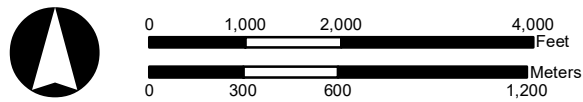
Charlie Stein
AECOM



Date Saved: 6/18/2021 Document Path: E:\GIS\Projects\MI Bridges\20210618\Background Maps 20210618.mxd

LEGEND:
★ Bridge Location
Yellow Line Topographic Quadrangle

Service Layer Credits: Copyright © 2013 National Geographic Society, i-cubed

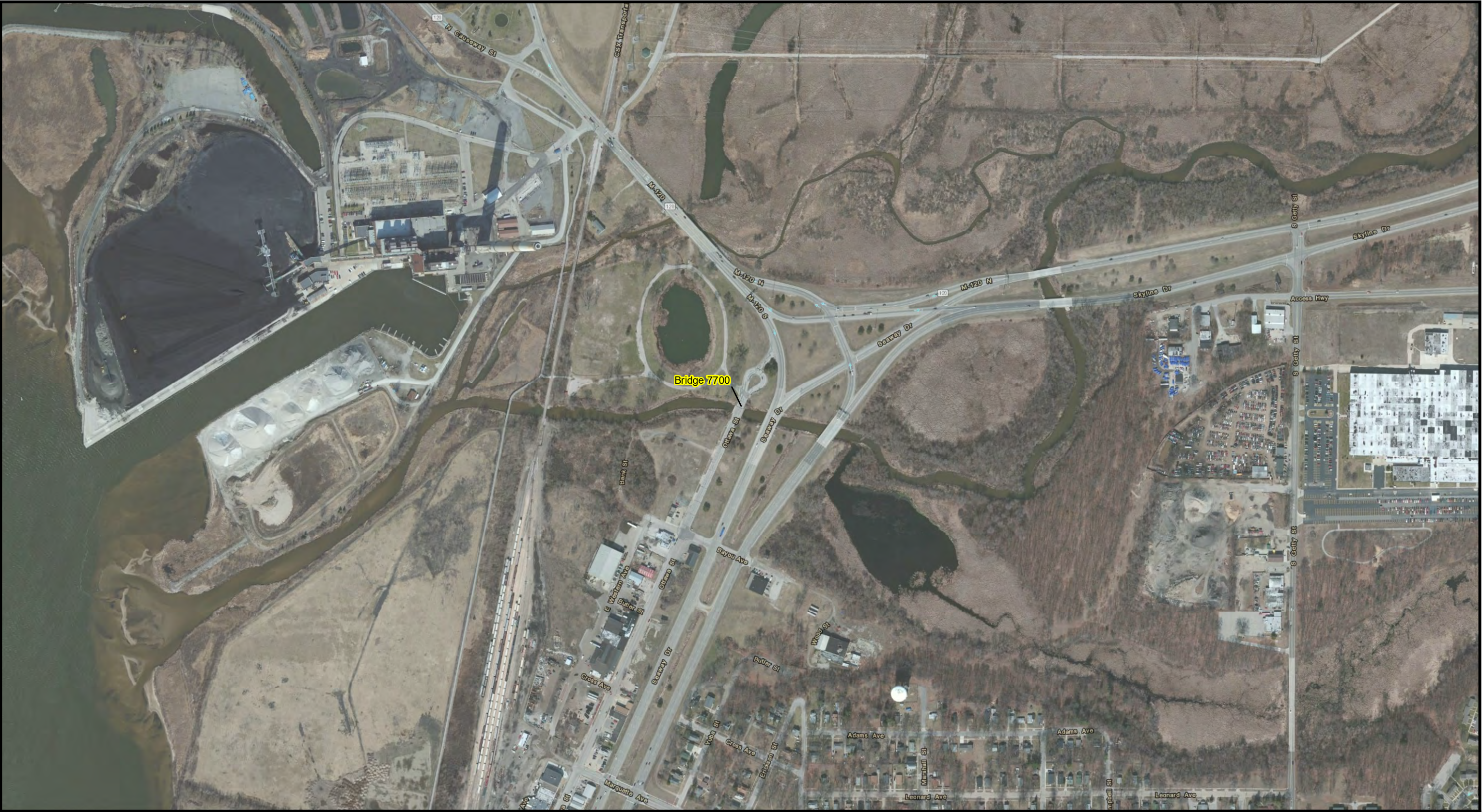


Muskegon County

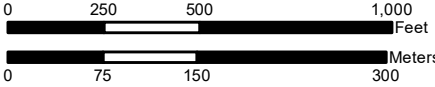
MI Bridges

OTTAWA STREET - BRIDGE 7700
LOCATION

DATE: 3/21/2023	SCALE: 1 in = 610 meters
CREATED BY: BSG	CHECKED BY: CGL
JOB NO.	AECOM



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community



Muskegon County

MI Bridges

BRIDGE 7700 LOCATION

DATE: 3/20/2023	SCALE: 1 in = 152 meters
CREATED BY: BSG	CHECKED BY: CGL
JOB NO.	AECOM

WATCH MUSKEGON

Agenda Item Review Form

Muskegon City Commission

Commission Meeting Date: April 25, 2023	Title: FY24 CWSRF Project Plan Updates
Submitted By: Dan VanderHeide	Department: DPW
Brief Summary: The City's CWSRF Project Plan on file with the state for future revolving fund projects has been updated, and the City needs to receive comment and adopt the plan by resolution.	
Detailed Summary & Background: The City has taken advantage of favorable rates and even some principal forgiveness as a part of the state's Revolving Loan Fund programs to complete substantial utility improvement projects, such as the Sanford Street project currently underway. In order to be eligible for these programs, projects must be included in the City's "Project Plan" that is on file with the state department of EGLE. The specific projects proposed for the program are not known at this time; this Project Plan is simply a list of projects the City <i>may</i> propose for the program in the future. The list is used by the state to perform preliminary environmental and other clearance work so they are prepared for the projects if and when the City proposes them. Prein & Newhof has updated our Clean Water State Revolving Fund (CWSRF) Project Plan (the plan dedicated to sanitary sewer projects) to show potential projects over the next several years. Part of the updating process includes holding a meeting where the public can comment on the plan (satisfied by today's meeting and the public comment periods within it), and a resolution by the Commission adopting the plan. The resolution is attached. The Project Plan is included without appendices due to size. For the full version (385 pages, 55MB), please visit: DRAFT rep 2023-04-10 CWSRF Project Plan - Muskegon.pdf	
Goal/Focus Area/Action Item Addressed: Sustainability in financial practices and infrastructure	
Amount Requested: N/A	Amount Budgeted: N/A
Fund(s) or Account(s): N/A	Fund(s) or Account(s): N/A
Recommended Motion: Adopt the City's CWSRF Project Plan via the included resolution.	
Approvals: Immediate Division Head ☒ Other Division Heads ☐	Legal Review Information Technology ☐ Communication ☐
Guest(s) Invited / Presenting Yes ☐ No ☒	
For City Clerk Use Only: Commission Action:	

**A RESOLUTION ADOPTING A FINAL PROJECT PLAN
FOR WASTEWATER SYSTEM IMPROVEMENTS AND
DESIGNATING AN AUTHORIZED PROJECT REPRESENTATIVE**

WHEREAS, the City of Muskegon recognizes the need to make improvements to its existing wastewater collection system; and

WHEREAS, the City of Muskegon authorized Prein&Newhof to prepare a Project Plan, which recommends the rerouting, rehabilitation and replacement of sanitary sewers, lift station rehabilitation, and associated appurtenances to provide a more reliable and resilient wastewater collection system, replace aging and structurally deficient sewers, provide accessibility for operation and maintenance, and improve system capacity; and

WHEREAS, said Project Plan was presented at a Public Meeting held on April 25, 2023, and all public comments at the meeting or written comments submitted during the public comment period have been considered and addressed.

NOW THEREFORE BE IT RESOLVED, that the City of Muskegon formally adopts said Project Plan and agrees to implement the selected FY 2024 projects based on the selected alternatives for those projects.

BE IT FURTHER RESOLVED, that the Director of Public Works, a position currently held by Daniel VanderHeide, is designated as the authorized representative for all activities associated with the project referenced above, including the submittal of said Project Plan as the first step in applying to the State of Michigan for a State Revolving Fund Loan to assist in the implementation of the selected alternative.

Yeas:

Nays:

I certify that the above Resolution was adopted by the City Commission of the City of Muskegon on April 25th, 2023.

BY: Ann Meisch, City Clerk

Signature

Date

DRAFT

Project Plan

FY 2024 Wastewater Project Plan

Prepared for
City of Muskegon

April 2023

2230380

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1 Project Background

This Project Plan is prepared on behalf of the City of Muskegon, Muskegon County, Michigan, for the purpose of obtaining a Clean Water State Revolving Fund (CWSRF) loan from the State of Michigan for the construction of improvements to the City of Muskegon's wastewater system. The applicant is the City of Muskegon (hereinafter the "City") and all the proposed work is in the City.

The City of Muskegon is the largest city in Muskegon County, which is located at the western edge of Michigan. The City occupies approximately 18.1 square miles, with 14.2 comprised of land area and 3.9 square miles consisting of water. It is located at the western edge of the county with Lake Michigan forming its western boundary. Muskegon Lake and the Muskegon River form its northern boundary.

The City has a population of approximately 38,500 with approximately 11,300 residential and 1,700 commercial/industrial customers of its wastewater system. It has almost 900,000 feet of gravity sewer, 26,000 feet of forcemain, 4,000 manholes and 24 pumping stations. The City of Muskegon does not have its own treatment plant. Its wastewater is treated by the regional Muskegon County Wastewater Management System (MCWMS).

In 2017, the City of Muskegon completed an Asset Management Plan (AMP) for its wastewater collection system to evaluate the condition and needs of its wastewater collection system, develop a system for prioritizing repairs and rehabilitation of the system, and to make recommendations for funding the needs identified. Over half of the system is approaching 100 years old and is in need of repair or replacement or will need it in the next few decades.

The CWSRF program was identified as one method of funding the Capital Improvements identified in the Asset Management Plan. The improvements discussed herein are primarily a result of the AMP process. All improvements will help make infrastructure more efficient and reduce the chance of impacting water quality in the area by failing wastewater assets. All projects are specifically to replace existing aging infrastructure that has high maintenance and operation cost and potential for failure. None of the projects or projected 20-year needs include projects to extend infrastructure to new areas in or outside of the city.

The purpose of this report is to present a comprehensive plan and evaluation of alternatives for improving the existing wastewater collection system. The evaluation includes an analysis of cost, technical feasibility, and environmental impacts for projects that are needed over the next 20 years.

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Funding will be pursued through Michigan's Clean Water State Revolving Fund (CWSRF). CWSRF is a low interest loan financing program that assists qualified local municipalities with the construction of needed water pollution control facilities.

1.1 Study Area Characteristics

1.1.1 Delineation of Study Area

The study area comprises the area within the Muskegon city limits, which is about 18 square miles (about 14 square miles is land area and the rest is water). The city's wastewater collection system covers almost the entire city plus some very small portions of Muskegon Township, City of Muskegon Heights, Fruitport Township, and the City of Norton Shores served by the City of Muskegon where their own systems cannot easily serve customers. Figure 1 shows the study area, service area boundary, and the existing wastewater collection system.

The City is mostly built out but there are three areas within the city limits and the current wastewater service area that are anticipated to further develop over the next 20 years. These are highlighted in Figure 1. It is expected that the City's existing collection system will have sufficient downstream capacity to handle additional wastewater flow from future development in these areas. None of the projects in this Project Plan are proposed for increased capacity in these areas.

The former Sappi Paper Plant, located along the southern shoreline of Muskegon Lake, has been demolished and is planned for redevelopment. The area was occupied by a paper mill from 1900 until it ceased operations in 2009. Prior to 2009, the paper mill was a large industrial customer of the Muskegon County regional wastewater system, the Muskegon County Resource and Recovery Center (MCRRC), and was within the City of Muskegon. Its closing reduced wastewater flows significantly. Since the plant has been closed and demolished, the City worked with local developers to redevelop the lakefront property. The site has plans to be redeveloped into Windward Pointe which includes housing, commercial and recreational features. Given that the City's wastewater system had the capacity to serve the paper mill, a large water and wastewater customer, for many decades, it is likely that the downstream collection system will have the capacity to handle the additional wastewater volumes incurred from any additional development in this area.

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The second area shown on Figure 1 is on Remembrance Road in the Industrial Park area. This property has been highlighted by the City as having a potential for development within the 20-year design period. Currently the property is not served by the City's sewer collection system. It is anticipated that if development were to occur in the area, the City would extend approximately 1,500 feet of sewer along Industrial Boulevard in order to serve the development. It is also anticipated that the collection system downstream of the Remembrance Road property will have sufficient capacity to handle any additional wastewater volumes. No projects in this project plan are associated with that.

The third service area highlighted in Figure 1 is Pigeon Hill. Pigeon Hill used to be a large sand dune towering over 200 feet high in the early 1900's. Between the 1920's and 1950's, sand was mined in the area and sold to local foundries that helped make the Muskegon Area prosperous. Since then, the dune was essentially leveled and undeveloped until Harbor Towne, a residential condominium development, was built in 1992. The area highlighted as a future service area is the area of Pigeon Hill that has remained undeveloped. Development plans are in place for a new neighborhood call The Docks. The Docks will include new on water and near-water homes for year-round and seasonal living. It is anticipated that the collection system downstream of The Docks will have sufficient capacity to handle any additional wastewater volumes. No projects in this project plan are associated with development there.

1.1.2 Environmental Setting

1.1.2.1 Cultural Resources

According to Muskegon County's website, the Muskegon area was once home to various bands of Ottawa and Pottawatomi tribes in the early 1700's. The area has a rich Native American history with various cultural resources.

Furthermore, since settlement began in earnest in the early 1800's, the area has become a highly developed urban City. The City has various historical buildings and landmarks throughout the area. The study area does not have any national natural landmarks according to EGLE and the National Park Service. However, there are various historical places in Muskegon that are found on the National Register of Historic Places that are deemed worthy of preservation by the U.S. Department of the Interior. These historic

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places include the Central Fire Station, Amazon Hosier Mill, Muskegon South Breakwater Light, Muskegon South Pierhead Light, Muskegon YMCA Building, U.S.S. Silversides, and Union Depot. Additionally, many of the homes within the City of Muskegon were built as far back as the late 1800's and early 1900's. Some of these homes are located within the City's various historic districts near the downtown area. The Charles H. Hackley, Horatio N. Hovey, and Thomas Hume Houses are also included on the National Register. Dating back to 1889, the extravagant historical houses have been preserved and represent the former homes of some of the most prominent lumber barons from Muskegon's lumbering era.

The distinguished history of the Muskegon area deserves to be protected and preserved. Historic and archeological sites will not be adversely impacted by the proposed projects as the projects are largely within road right-of-ways and alleys. Further detail on the cultural resources in relation to the proposed projects is located in the Environmental Evaluation in Section 2.5.2.

1.1.2.2 Natural Environment

As noted above, the City occupies approximately 18.1 square miles, with 14.2 comprised of land area and 3.9 square miles consisting of water. It is located at the western edge of Muskegon County with Lake Michigan, one of the five Great Lakes, forming its western boundary. Muskegon Lake and the Muskegon River form its northern boundary.

The Muskegon River is one of the major rivers in Michigan and empties into Muskegon Lake, which in turn empties into Lake Michigan. Sand dunes are present along the western border of the City at Lake Michigan. These features all form important topographical and geographical features in Muskegon. The lake levels are about 585 feet above sea level, while much of Muskegon is 30 to 40 feet higher. Some of the sand dunes rise more than 50 feet above the Lake Michigan water level. The City of Muskegon has been built around these beautiful shorelines and natural features.

In addition to the Muskegon River, there are also several smaller streams including Ruddiman Creek, Ryerson Creek and Four Mile Creek, which empty into Muskegon Lake, which is the drowned river mouth of the Muskegon River. Much of the current shoreline of Muskegon Lake has been filled over the years with remains of the logging

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industry, foundry sand, and other industrial materials. There has been a focus on cleaning up contaminated sediments in the Lake and Ruddiman Creek over the last decade.

While much of Muskegon has sandy soils, there are marshy areas near the Muskegon River and Muskegon Lake, and the smaller creeks mentioned above. In fact, Muskegon gets its name from the Ottawa Indian term “Masquigon,” meaning “marshy river” or “swamp.” There are areas of industrial fill, especially along the Muskegon Lake shoreline, and some areas, such as the "Clay Hill" area, where clay soils have caused homeowners to build foundation drains and basement sumps, which are connected to sanitary sewers in some cases.

The City of Muskegon possesses various natural environment features that are valuable within the study area. Disruptions to the environment are expected to be minimal for the proposed projects. The projects are within highly urbanized areas and within developed roadways. Adverse impacts to the natural environment will be avoided when possible, and mitigated if necessary. Further detail on the natural environment in relation to the proposed projects is located in the Environmental Evaluation in Section 2.5.2.

1.1.3 Land Use

The City’s existing land use is diverse with significant residential areas and some commercial, industrial and public recreation areas as shown on the Existing Land Use Map (Appendix A). The city is mostly built out although there are some areas for future residential and industrial land uses. Future land use is similar to existing land use in most cases, with some additional public areas, open spaces, woodlands, and significant redevelopment in the downtown area as shown in the Zoning Map (Appendix B) and Future Land Use Map (Appendix C). There are no major projected changes in the land use of the study area that would significantly impact wastewater flows beyond the average daily and maximum daily wastewater flow projections provided in Tables 1 and 2.

1.1.4 Population Data

The population of the City of Muskegon was estimated to be 38,318 in 2020 according to the United States Census Bureau. The population has declined since 2000 when it was slightly more than 40,000. This trend has been seen in many areas of Michigan. The existing and estimated population projections for the City of Muskegon have been developed by the

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MCRRC for all of the communities it serves in Muskegon County. These numbers are based on U.S. Census data and data developed by the West Michigan Shoreline Regional Development Commission (WMSRDC) and are presented in Table 1.

From 2000 to 2010, the U.S. Census indicates that the City of Muskegon population declined by 4.2%. WMSRDC is projecting a modest 0.9% population increase over the 25 year period from 2020 to 2045. The City of Muskegon does have some seasonal population growth during the summer season in areas nearby Muskegon Lake and Lake Michigan shorelines. However, the seasonal patterns do not have a significant impact on the wastewater flow rates in the City of Muskegon service area.

1.1.5 Economic Characteristics

The City of Muskegon is the industrial and commercial center of Muskegon County. Muskegon has been built around its large industries ever since it flourished during the lumber era in the late 1800's. During this era, Muskegon boasted more millionaires than any other town in America. Throughout the 1900's the City has remained a major industrial port within the Great Lakes area. The recession beginning in late 2008 had a significant impact on the economy in the area. However, the City had continued an upward trend in economic conditions since the recession in 2009, culminating in a 18-year low unemployment rate according to the United States Department of Labor in 2019. However, the pandemic in 2020 caused unemployment within the City to spike up to 29% in April 2020. The unemployment rate leveled off to below 5% by the end of 2022 according to the United States Bureau of Labor and Statistics. Prior to the 2020 recession, the Muskegon area was in the process of revitalizing neighborhoods, improving public schools, and restoring the landscape of the lakeshore to more natural settings. These initiatives are continuing today.

Major employers in the area include education (Muskegon Public Schools, Muskegon Community College, and others), retail trade (Meijer, Walmart, Wesco, Betten-Automotive Group, etc.), healthcare services (Mercy Health, Muskegon Family Care, etc.), industry (ADAC Automotive, L-3 Combat Propulsion Systems, Cole's Bakery, etc.), and government (Muskegon County and City of Muskegon).

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The median household income in City of Muskegon \$37,827 according to data provided on the EGLE CWSRF website, which is taken from the United States Census Bureau. The Taxable Value or property per capita is listed as \$16,910.

Growing economic conditions may bring additional commercial and industrial water users to the study area. The City's wastewater system overall has available capacity in many areas. System capacity will need to be evaluated and addressed based on the expected water requirements of new businesses as they develop within the study area.

1.2 Existing Facilities

1.2.1 Wastewater Treatment

The City of Muskegon does not own or operate any wastewater treatment facilities. All wastewater from the City of Muskegon is pumped to MCWMS Metro Plant located in Muskegon County, Michigan. MCWMS serves the Metro area and the Whitehall-Montague area, including thirteen municipal users and two separate industrial users. The municipal users include the City of Muskegon, Norton Shores, Muskegon Heights, Roosevelt Park, North Muskegon, Muskegon Township, Laketon Township, Egelston Township, Fruitport Township, City of Montague, Montague Township, City of Whitehall and Whitehall Township. Industrial users include Sun Chemical/Camus Water Technologies and Bayer Crop Science. Wastewater is pumped through an eleven mile forcemain from the downtown Muskegon area east to the treatment site.

Wastewater flow to the MCRRC averaged approximately 11 million gallons per day in 2022. The City of Muskegon represented approximately 37% of the daily flow in 2022, averaging 3.94 million gallons per day. Table 2 shows the historical and average daily flow projections through 2045. Previous records indicated that approximately 44% of the average wastewater flow from the City is attributed to residential customers, while commercial and industrial customers produce 24% and 17% of the flow, respectively.

MCWMS has an expansive system of wastewater lagoons and irrigation fields to treat wastewater from all over Muskegon County. The treatment system has ample treatment capacity, as the rated capacity is 42 million gallons per day. An overview process map is included in Appendix D.

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1.2.2 Residuals

The City of Muskegon does not own or operate any wastewater treatment facility; therefore it does not generate any residuals or have a Residuals Management Program.

1.2.3 Sewers and Force mains

The City of Muskegon wastewater system includes gravity sewers and force mains serving the majority of lands within the City corporate limits, as well as small adjacent areas beyond the City corporate limits as shown on Figure 1.

Dating back to the early 1900's, the City of Muskegon historically had sewers throughout its system designed to convey both wastewater and stormwater flows. Over many decades, the City has separated the wastewater and stormwater collection systems. All known combined sewers have been separated and all known sanitary/storm connections have been disconnected.

The top three major industrial water users are Lorin Industries, Port City Group, and ADAC Automotive. Lorin Industries is an aluminum supplier, Port City Group is a manufacturer of aluminum die castings, mechanical assemblies and injected molded plastics, and ADAC Automotive is a manufacturer of automotive parts. The locations of the major industrial discharges are highlighted in Figure 1.

The City of Muskegon was awarded a three year long Stormwater, Asset Management and Wastewater (SAW) Grant in 2013. During the three-year SAW Grant period, Prein&Newhof inventoried and assessed the condition of manholes, sewers, forcemains, and pump stations within the City's wastewater collection system. Since the SAW grant period the City has continued to keep the wastewater collection system inventory updated as recent construction projects have been completed. However, the majority of the condition assessment information has not been comprehensively updated since the large condition assessment effort undertaken during the SAW Grant period. A summary of the inventory and condition assessments is briefly reviewed below.

1.2.3.1 Inventory

An inventory of manholes, gravity sewer pipes, and force mains was prepared for the asset management plan. The inventory contains information on the size, material, and

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installation year of manholes, sewer pipes, and forcemains. The inventory also includes rim and invert elevations for manholes as well as length and slope for gravity sewer pipes.

1.2.3.1.1 Mapping System

The inventory was compiled using a Geographic Information System (GIS). The GIS serves as a repository of data from which the information about each asset can be displayed on maps. The maps enable data driven decision making.

The inventory was compiled from available documentation including prior system maps and record plans. Original documentation was scanned to create electronic images, which were hyperlinked to the GIS for convenient access.

1.2.3.1.2 Field Verification

The system inventory was verified by locating manholes, opening the lids, visually confirming the number and orientation of connecting pipes, surveying the rim and invert elevations where needed, and storing Global Position System (GPS) coordinates. The GPS coordinates result in increased accuracy to make the GIS a more useful tool for many future purposes, including capital improvement planning and routine maintenance operations.

1.2.3.1.3 Summary of Sewer and Forcemain Inventory

The City of Muskegon wastewater system includes approximately 890,000 lineal feet of gravity sewer pipes ranging from 6 to 42 inches in diameter, 21,500 lineal feet of forcemain pipes ranging from 1.5 to 12 inches in diameter, and 3,778 manholes.

Figure 2 shows a summary of the gravity main age and material inventory. Figure 3 provide further details of the ages and materials of forcemain sewer pipe. The gravity sewer pipe materials are primarily vitrified clay pipe installed between the late 1910's and early 1940's and PVC pipe installed since the 1990's. Approximately 75% of the sewers are over 50 years old and over 80% of the sewers are vitrified clay pipe. The manholes are a mix of brick and precast concrete structures. The force main materials are primarily ductile iron, with some cast iron and PVC materials. The inventory data presented in this report is based off the existing sanitary sewer system in 2015

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during the SAW grant period. The City has completed various sanitary sewer system improvement projects since 2015, however, the overall inventory data given has not changed significantly.

1.2.3.2 Condition Assessment

An assessment of the physical condition of manholes and gravity sewer pipes was made to evaluate the risk of failure. Descriptions of the assessment methods are provided below.

1.2.3.2.1 Manholes

Visual Inspection

The primary method to assess the majority of manholes was visual inspection from above ground. Condition assessments were made on the structure, the steps, the casting, and observable infiltration. Approximately 76 percent of manholes were inspected and assessed with this method; occasional manholes were omitted due to access limitations.

3D Optical Manhole Scanner with MACP Assessment

An alternative method to assess some select manholes was using a 3D optical manhole scanner. The scanner was lowered into the manhole and pictures were taken of all sides of the manhole, including the bottom. The images can be viewed through a 3D panoramic viewer.

The National Association of Sewer Service Companies (NASSCO) defines a set of standards for documenting sewer pipe conditions with its Manhole Assessment and Certification Program (MACP). MACP provides a standard method for documenting the location, type, and severity of manhole defects.

Force main discharge manholes have a higher risk of hydrogen sulfide damage. All force main discharge manholes and select manholes along the Beidler Sewer were further inspected and assessed with this method.

Summary of Manhole Conditions

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Manholes were found in moderate to good condition overall, with occasional minor deficiencies that can be addressed as part of system operations and maintenance efforts. Further details including locations of these individual manholes are available in the City's GIS.

1.2.3.2.2 Gravity Sewer Pipes

Zoom Camera Inspections

Inspections were made from inside manholes using a pole mounted video camera equipped with a spot light and an optical zoom lens. An assessment of the condition of any observed offset joints, roots, debris, infiltration, corrosion, or other structural defects was made. Condition ratings of 1-5 were assigned to gravity sewer pipes, where 5 represents the most severe defect and 1 represents no noted defect.

Zoom camera inspections have limitations for longer distances between manholes but provide a clear view of the ends of the pipe near the manhole. The observable distance varies typically between 50 and 150 feet and is affected by factors such as pipe alignment, roots, debris, and steam.

In order for sewer pipes to qualify for CWSRF funding, sewer pipes must be reviewed with a level two inspection in accordance with NASSCO's (National Association of Sewer Service Companies) Pipe Assessment Certification Program (PACP). Zoom camera inspection is considered a less detailed, level one inspection. However, the zoom camera method provides an efficient way to assess which pipes have the most severe problems and was used as a low cost screening tool to identify pipes that required additional, more detailed inspections.

Closed Circuit Televising with PACP Assessment

Closed Circuit Televising (CCTV) inspections were completed using remotely operated video cameras that travel through the sewer. The CCTV inspection provides up close visual detail through the entire length of pipe from manhole to manhole.

NASSCO defines a set of standards for documenting sewer pipe conditions with PACP. PACP provides a standard method for documenting the location, type, and severity of sewer defects. The type of each defect is categorized as either a structural

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defect or an operations and maintenance defect. Structural defects include cracks, holes, sags, and corrosion. Operations and maintenance observations include roots, deposits, infiltration, and grease. Each defect is assigned a condition rating of 1-5, with 5 being the most severe defect.

The PACP standard was followed for sewer pipe condition assessments from CCTV inspections. All sewer pipes proposed for rehabilitation or replacement for structural reasons were inspected in this manner. Further details of the MACP and PACP inspection methods are provided in Section 1.2.5.

Summary of Gravity Sewer Pipe Conditions

All of the gravity sewer pipes were first inspected with the zoom camera method. Approximately 8% were subsequently inspected with the CCTV method based on the zoom camera results. Due to various manhole or pipe access issues, approximately 12% of the pipes were unable to be condition assessed with the zoom camera method. The conditions of these pipes were estimated based on age, material, and surrounding pipe conditions.

Structural defects including cracked pipes, broken pipes, pipes with holes, sags, and corrosion were observed in a variety of locations. The most significant cases are described further in Section 1.3.4. The City is monitoring the remaining known structural defects through the system with follow-up inspections and fixing defects with spot repairs, where necessary.

Infiltration was observed in several locations through CCTV inspection. The impact of infiltration is discussed in a separate Sewer Flow Study report by Prein&Newhof dated April 2017 (Appendix E).

The Oak Grove Neighborhood has been suspected to have Inflow and Infiltration (I&I) concerns in the past. Based on a previous Mass Flow Monitoring Study, a high-priority area was recommended for further CCTV inspection. CCTV inspections were performed in the high-priority area. The area consisted of the majority of pipes between the Forest Lift Station and Evanston Lift Station, and a portion of the pipes upstream of the Forest Lift Station. Little to no infiltration was

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discovered in the smaller diameter upstream collectors. However, a significant amount of infiltration was found in two separate deeper trunk sewers on Oak Grove Street and Evanston Avenue. The City has removed the majority of the I&I from these sewers using cured-in-place pipe (CIPP) lining methods in a 2018 project.

Roots and debris typical for sewer systems were observed in many locations. Some sewers with roots and the most severe debris were cleaned and inspected with the CCTV method. While clay sewers are resistant to corrosion, they are highly susceptible to root infiltration. The City maintains an extensive cleaning and root cutting program in order to manage root growth and avoid backups.

1.2.3.2.3 Force mains

Inspections to assess the condition of force mains were not conducted because current inspection technology is generally regarded to be not cost effective for most force mains. Instead, force mains were assessed based on age, material, surrounding soil conditions, and break history.

The 1920's era Austin Lift Station force main and the downstream portion of the Getty Lift Station force main were found to have the highest risk of failure in their current condition. The oldest downstream portion of the Getty Lift Station force main was replaced in 2020. The remaining force mains within the system were installed after 1970 and are estimated to be in fair to good structural condition.

1.2.4 Pump Stations

Eight grinder pump stations serve areas within the collection system that cannot be served by gravity. Sixteen lift stations are utilized throughout the system with one main County owned lift station (Pump Station C) pumping all wastewater to the county-owned treatment plant. The pump stations and capacities are shown in Table 3.

On behalf of the City, Prein&Newhof recently assessed the condition each pump station within the collection system in 2015 through the City's SAW Grant. The conclusion made during the SAW Grant is that the City-owned pump stations are in fair to good condition, overall. The pump stations with the highest risk of failure were the Edgewater and Harbor Towne Lift Stations mainly due the structural deterioration of the discharge piping. The

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Edgewater and Harbor Towne Lift Stations are scheduled to be retrofitted by replacing the pumps and discharge piping in 2024 using FY23 CWSRF funding. The controls and alarms on all of the pump stations are working properly. The City performs weekly inspections of all pump stations. Besides the concerns with the Edgewater and Harbor Towne Lift Stations, the remaining City owned pump stations adequately maintain system integrity.

1.2.5 NASSCO PACP/MACP

EGLE's CWSRF Project Plan Preparation Guidance eligibility criteria for sewers replaced due to structural deficiencies states only those structural deficiencies placing the sewer pipe and/or manhole in imminent danger of failure. Sewer pipes and/or manholes must be reviewed in accordance with NASSCO's (National Association of Sewer Service Companies) Pipe Assessment Certification Program (PACP) and Manhole Assessment Certification Program (MACP). The PACP and MACP must be used to grade and define the severity of the pipe and manhole defects. The defects found in the pipe segments and manholes must have a grade of either Significant (Score 4) or Most Significant (Grade 5) to be considered eligible for funding under EGLE's State Revolving Loan Fund. Additionally, the assessment of the defects should also consider other factors such as pipe age, sewer depth, type of pipe, diameter of pipe, type of soils, and location (i.e. under buildings, railways, rivers, heavy traffic, or in environmentally sensitive locations) all of which could impact the priority of the classification.

NASSCO's PACP and MACP were established to provide the industry with the ability to accurately to assess sanitary sewer environments against a national standard using common tools.

During the PACP segment of the evaluation, sewers are televised using closed circuit television (CCTV) equipment. As the sewer segments are televised or during post televising review, the NASSCO PACP-certified user identifies defects in the sewer pipe segments that could cause potential pipe failures. It is possible that multiple defects occur at the same location. Examples of multiple defects at the same location could be active infiltration or evidence of past infiltration at or near a defect such as a broken pipe. These are two separate but identifiable PACP/MACP defects.

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The inspection method for manholes under NASSCO's MACP is done in a manner similar to sewer segment evaluation except that detailed photographs of the manholes can take the place of actual CCTV inspections.

Once the inspections are completed and the defects identified, detailed PACP survey reports for each segment are prepared. The reports identify the following:

- The distance (in feet) of the defect from the starting manhole
- The PACP defect code
- The description of the defect code
- Identify continuous defects (defect continues for more than three feet)
- Percentage of flow capacity restriction
- PACP/MACP grade

Once the detailed reports are completed, detailed PACP conditions for each segment are located and plotted on a map of each segment.

Once the inspections are completed and the defects identified, NASSCO's PACP/MACP grading methodology gives each defect code an assigned condition grade value of 1 through 5. Conditional grades are assigned based on the following:

- Significance of the defect
- Extent of damage
- Location of the defect
- Percentage of flow capacity restriction
- Amount of wall loss due to deterioration

NASSCO's PACP/MACP goes one step further and estimates the potential timing of pipe/manhole failure based on the associated conditional score. The table below defines NASSCO's Defect Scoring system utilizing PACP/MACP as well as the estimated time to failure.

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PACP/MACP Grade	Description	Estimated Time to Failure
1	Acceptable Structural Condition	Unlikely in Foreseeable Future
2	Minimal Failure Risk	20 Years or More
3	Fair - Failure Unlikely In Near Future	10 to 20 Years
4	Poor - Failure Likely In Foreseeable Future	5 to 10 Years
5	Immediate Attention - Failed or Failure Eminent	Has Failed or Will Likely Fail Within the Next 5 years

The PACP/MACP condition grading system alone is inadequate for determining if a pipe segment should be rehabilitated or replaced. Many other factors in addition to the internal condition of the segment should be considered. The fact that a segment or manhole has a significant Grade 4 or Grade 5 defects does not necessary mean the pipe segment or manhole will have an immediate catastrophic failure. Other factors such as pipe age, sewer depth, type of pipe, diameter of pipe, type of soils, and location (i.e. under buildings, railways, rivers, heavy traffic) should also be evaluated to determine the likelihood of the failure and the timing of the method for repair.

Pipe and manhole defects defined under NASSCO's PACP as "Critical Priorities" are as follows:

- Cracks and Fractures in the pipe segments or manhole walls. (Grade 4 or 5 depending on the severity).
- Broken pipe segments or manhole walls. (Grade 5).
- Holes in the pipe or manhole walls. (Grade 4 or 5 depending on location).
- Collapsed pipe or manhole that has lost more than 40 percent of its original cross sectional area. (Grade 5).
- Deformed pipe or manhole that has lost more than 10 percent of its original cross sectional area. (Grade 4 or 5 depending on cross-sectional area).
- Offset joints when offset is greater than or equal to pipe wall thickness multiplied by 1.5. (Grade 4).
- Missing aggregate from concrete pipe due to corrosion or poorly manufactured manholes and pipe. (Grade 4 or 5).
- Pipe and manhole corrosion due to hydrogen sulfide. (Grade 4 or 5 depending on the severity).
- Sags and dips located in the pipe segments where the water surface level in the pipe is greater than 50 percent of the cross sectional area. (Grade 4 or 5 depending on the severity).

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Appendix F provides a PACP inspection index and reports for all of the structurally deteriorated sewers (Grade 4 or 5) that were inspected using PACP within the project areas.

1.3 Summary of Project Need

As described in the previous Sections, a detailed inventory and condition assessment of the wastewater collection system was recently performed during the SAW Grant period between 2014 and 2016. Condition assessments included visual and MACP inspection of manholes, zoom camera and PACP inspection of sewers, and visual inspection and operational testing of pump stations. The extensive condition assessment effort was used to assess a Risk of Failure (RoF) and Consequence of Failure (CoF) value for each asset. This practice of asset management allows for data-driven decision making and is used to prioritize asset rehabilitation and replacement.

Using the Level of Service (LoS) goals developed in their Wastewater Asset Management Plan, the SAW period culminated with the development of a comprehensive Capital Improvement Plan (CIP). Several of the highest priority projects were included in the City of Muskegon 2018 and 2021 CWSRF Project Plans and have been completed in recent years. The remaining projects described in this section were determined through the asset management process as part of a 2023 Capital Improvement Plan update and represent the current highest priority wastewater collection system needs.

1.3.1 Standards Compliance and Reliability

The City of Muskegon is in compliance with existing regulations pertaining to wastewater collection systems. However, the system is aging and as assets in the collection system fail, they have the potential to degrade surface and ground water, which are prevalent in and around the City. Over 50% of the existing sewer infrastructure in the study area was installed prior to 1940, and many of the sewers and manholes are more than 100 years old. Some sewers are deep, built below or adjacent to private businesses, and are very difficult to access for maintenance or repair. Others are built at less than optimum grade and tend to back up frequently. Some sewers within the system were modeled to have insufficient pipe capacity to handle large rain events.

Furthermore, 80% of the sewers in the City are clay pipes which are brittle and highly susceptible to root intrusion and infiltration through the joints. As a result of the increasing

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rate of sewer failures and backups, the City of Muskegon Department of Public Works (DPW) is often stretched thin and forced to be reactionary to sewer calls rather than proactive with preventative maintenance. Specific details of the major known problems within the study area are discussed further in Section 1.3.4.

All City of Muskegon wastewater is treated by the regional Muskegon County Wastewater Management System Metro Plant, which was placed online in 1973. The facility uses a system of wastewater lagoons to treat wastewater from the Muskegon County area communities (City of Muskegon, City of Muskegon Heights, City of North Muskegon, City of Roosevelt Park, City of Norton Shores, City of Montague, City of Whitehall, Cedar Creek Township, Dalton Township, Egelston Township, Fruitland Township, Fruitport Township, Laketon Township, Montague Township, Muskegon Township, and Whitehall Township). The MCWMS Metro Plant is currently in compliance with its NPDES discharge permit issued in August of 2015. The permit expired in October 2017 and a copy is included in Appendix G. Paperwork was submitted for the new permit in 2018 but it has not been re-issued as of the date of this report.

1.3.2 Orders of Enforcement Action

There are currently no orders of enforcement in place for the City of Muskegon's wastewater system.

1.3.3 Water Quality Problems

Over half of the City of Muskegon's wastewater collection system was constructed as far back as the early 1910's to the 1930's. The gravity sewers constructed between the 1910's and 1990's were mainly constructed out of vitrified clay, with some reinforced concrete pipe and cast iron pipe. Sewers installed since the 1990's have primarily been constructed out of Polyvinyl Chloride (PVC) or ductile iron material. Several trunk sewers within the City of Muskegon collection system were determined to have structurally deficient sewers (Ruddiman Creek, Houston/Monroe/Merrill Avenue, Spring Street, Amity Avenue, and Division Street) and have been replaced in recent years to minimize the potential for failures and contamination of nearby streams.

As the wastewater collection system continues to age, the infrastructure continues to structurally deteriorate. Some collection system assets are in failing condition and have

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reached or exceeded their useful lives. The majority of the problems in the system are a result of structural failures in the sewer pipes, as detailed further in Section 1.3.4. Many of these structural failures have the potential to cause backups within the sewer system which could cause sanitary sewer overflows into nearby buildings and the natural environment including surface waters such as Muskegon Lake, Ruddiman Creek, Ryerson Creek, and Four Mile Creek. As pipe assets continue to age, the potential for further failure and water quality incidents will only increase which will raise the chance of a sanitary sewer overflow to local surface waters.

In addition to sewer pipe failures, other conditions exist within the system that increase the risk of contaminating the natural environment and waters of the State. These conditions are described in further detail in Section 1.3.4 and include the following: improper gravity main slopes, inaccessible and unmaintainable sewers, and roots intruding into pipes. All of these problems need to be addressed within the 20-year design period in order to reduce the risk of sanitary sewer backups and subsequent water quality problems.

Residents within the service area are connected to the sanitary sewer system, therefore leaking septic tank systems are not an issue. The recommended improvements provided in this Project Plan pertain to replacing or rehabilitating existing collection system components rather than extending the system into unsewered areas.

1.3.4 Projected Needs for the Next 20 Years

The City of Muskegon Wastewater Collection System has various projected needs over the 20-year design period. All project areas described below are roadways within the City that have vitrified clay sewers that were installed in the 1920s (or prior), with the only exception being the Glenside Neighborhood Sewers (Section 1.3.4.4) which has sewers installed within unmaintained alleys in the 1930s. The Glenside Neighborhood Sewers were inspected using PACP scoring (see reports in Appendix F). The remaining eight project areas have not been inspected using PACP scoring. Alternatively, the manholes have been visually inspected (all of which are brick) and sewer conditions were observed via zoom camera inspections.

Based on the City's experience with recent sewer PACP inspections, and its historical wastewater collection system maintenance, they have witnessed that 1920s vintage clay sewers remaining within the City have reached their useful life and are in need of

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replacement or rehabilitation to reduce the risk of overflows to the natural environment and waters of the State. The City's 1920s era clay sewers are brittle and highly susceptible to cracking, fractures, breaks, holes, joint defects, sags, and significant root intrusions at the joints and at lateral taps. Furthermore, sewers below the groundwater table are not water-tight and are susceptible to infiltration and inflow through the joints and structural failures within the pipes. Additionally, the old clay laterals connected to the sewers have similar structural and O&M problems.

The project areas below require action because the approximately 100-year-old clay sewers within them have reached the end of their useful life. Project area needs in addition to the excessive age of the sewers are discussed in detail below. The project areas are shown in Figure 1.

1.3.4.1 Holbrook Avenue Sewer

The Holbrook Avenue Sewer is a trunk sewer collecting wastewater from the nearby north-south alleys that was installed in the 1920s. An 8-inch sewer flows from Leahy Street to the west to Peck Street. A 12-inch to 18-inch sewer flows from Leahy Street to the east and discharges into the trunk sewer on Wood Street. Most sewers within the project area were installed below minimum recommended slope, in addition to many of the north-south alley sewers. Sewers below minimum slope can lead to debris buildup and backups that increase the risk of overflows into the natural environment.

Additionally, there is a large trunk storm sewer on Holbrook Avenue within the project area. The sewer is a 42-inch pipe at Wood Street and expands to a 66-inch sewer near the project area limit at Peck Street. The storm sewer was installed at a similar elevation to the sanitary sewer which resulted in five existing storm manholes with sanitary sewer main or laterals crossing through them. The aging storm and sanitary sewer infrastructure at these conflict locations increase the risk of sanitary sewer pipe failure which would overflow directly into the storm sewer system which eventually discharges into Ruddiman Creek and Muskegon Lake. A project is needed to address the structural deterioration of the Holbrook Avenue Sewer, in addition to the storm and sanitary sewer conflicts.

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1.3.4.2 6th Street Sewer

The 6th Street Sewer is an 8-inch collector sewer on 6th Street from Laketon Avenue to Washington Avenue. The upstream end of the sewer (near Laketon Avenue) was installed below minimum slope in the 1920s. Due to low flushing velocities, sewer pipes flatter than minimum slope are susceptible to debris buildup and require additional maintenance, in addition to risking sewer backups. Additionally, there are seven known storm manholes within the project area that have sanitary mains or laterals passing through them. A project is needed to address the aging and deteriorating clay sewer, the sewer pipes flatter than minimum grade, and the seven storm sewer and sanitary sewer conflict structures to reduce the risk of wastewater overflows into the natural environment.

1.3.4.3 7th Street Sewer

The 7th Street Sewer is an 8-inch collector sewer on 7th Street from Laketon Avenue to Washington Avenue. Many of the sewer pipes on 7th Street were installed below minimum slope in the 1920s. Due to low flushing velocities, sewer pipes flatter than minimum slope are susceptible to debris buildup and require additional maintenance, in addition to risking sewer backups. A project is needed to address the aging and deteriorating clay sewer and the flatter than minimum grade sewer pipes to reduce the risk of wastewater overflows into the natural environment.

1.3.4.4 Glenside Neighborhood Sewers

The large majority of the sanitary gravity mains and water mains in the Glenside Neighborhood were installed in the 1930's in unmaintained alleyways. Many sewer and water utilities have fences, garages, trees, and other structures located directly above them. The location of the sewers causes routine maintenance and any emergency response to be extremely difficult. Many of the sewers have significant root and flow blockage concerns, however the City's maintenance equipment is unable to access many of the manholes located under fences in residential backyards. Additionally, many of the clay sewers have structural deficiencies such as fractures, holes, sags, and breaks. A project is needed to reroute the most structurally deficient and inaccessible sanitary sewers from the alleyways into the City-owned roadways in order to reduce the risk of sewer backups, regain accessibility, and to meet the needs of the 20-year design period.

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1.3.4.5 Wood Street Sewer

The Wood Street Sewer is a 20-inch to 24-inch trunk sewer on Wood Street from Holbrook Avenue to Spring Street. The sewer is oversized based on existing sewer flow rates and rather flat. The sewer regularly fills up with debris, requiring additional maintenance from the City DPW, in addition to risking sewer backups and wastewater overflows into the natural environment. Efforts to inspect the sewer using CCTV have not been made because it is not cost effective.

Furthermore, the Sewer Flow Study (Appendix E) has shown that the collection district that includes the Wood Street Sewer has excessive wet weather inflow and infiltration (I/I). Further efforts to meter further upstream and narrow down the problem have shown that upstream of the Wood Street Sewer also has an excessive wet weather I/I problem. The sewer is the deepest sewer within the collection district, averaging 20 feet deep. Therefore, it is suspected that the Wood Street Sewer may be contributing to, if not the main cause for, the excessive I/I modeled within the area. A project is needed to address the aging and deteriorating clay sewer, the excessive debris buildup, and remove potentially excessive I/I to reduce the risk of wastewater overflows into the natural environment.

1.3.4.6 Catherine Avenue Sewer

The Catherine Avenue Sewer is a 1920s era 8-inch collector sewer on Catherine Avenue from Irwin Avenue to Wood Street. The sewer west of Spring Street was installed below minimum slope. Due to low flushing velocities, sewer pipes flatter than minimum slope are susceptible to debris buildup and require additional maintenance, in addition to risking sewer backups. A project is needed to address the aging and deteriorating clay sewer in addition to the flatter than minimum grade sewer pipes to reduce the risk of wastewater overflows into the natural environment.

1.3.4.7 Jefferson Street Sewer

The Jefferson Street Sewer is an 8-inch collector sewer on Jefferson Street from Laketon Avenue to Southern Avenue. The sanitary sewer and the storm sewer on Jefferson Street were installed below minimum slope in the 1920s. Due to low flushing velocities, sewer pipes flatter than minimum slope are susceptible to debris buildup and require additional

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maintenance, in addition to risking sewer backups. The storm and sanitary sewers on Southern Ave. were deepened and rerouted to flow toward Sanford St. in 2021 so that the sewers which are flatter than minimum slope on Jefferson St. could be deepened and replaced at appropriate slopes. A project is needed to address the aging and deteriorating clay sewer in addition to the flatter than minimum grade sewer pipes to reduce the risk of wastewater overflows into the natural environment.

1.3.4.8 Iona Avenue Sewer

The Iona Avenue Sewer is an 8-inch collector sewer on Iona Avenue from Arthur Street to Wood Street. The sewer pipes on Iona Avenue were installed below minimum slope in the 1920s. Due to low flushing velocities, sewer pipes flatter than minimum slope are susceptible to debris buildup and require additional maintenance, in addition to risking sewer backups. A project is needed to address the aging and deteriorating clay sewer and the flatter than minimum grade sewer pipes to reduce the risk of wastewater overflows into the natural environment.

1.3.4.9 Orchard Avenue Sewer

The Orchard Avenue Sewer is an oversized 15-inch sewer from Myrtle Avenue to Scott Street and an 8-inch collector sewer from Scott Street to Getty Street. The 8-inch sewer pipes on Orchard Avenue were installed below minimum slope in the 1920s. Due to low flushing velocities, sewer pipes flatter than minimum slope are susceptible to debris buildup and require additional maintenance, in addition to risking sewer backups. The new 21-inch sewer on Fork Street was deepened in 2021 such that the 15-inch and 8-inch sewer pipes on Orchard Ave. could be deepened and replaced at appropriate slopes. A project is needed to address the aging and deteriorating clay sewer and the flatter than minimum grade sewer pipes to reduce the risk of wastewater overflows into the natural environment.

1.3.4.10 Other System Needs over Next 20 Years

The previous nine project need areas were determined through asset management practices and developed from the City's CIP. They represent the highest priority needs for the system. Wastewater projects incorporated in the CIP other than those listed above include the following, listed in no particular order:

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- Dale Avenue Sanitary Sewer and Water Main (Park to Sanford)
- Austin Lift Station Force Main Replacement
- Frye & Cain Trunk Sewer Rehabilitation
- Sumner Avenue Sanitary Sewer Extension
- Apple Lift Station Pump 1 Replacement
- Industrial Park Lift Station Instrumentation and Control Upgrades
- Fisherman's Village Lift Station Mechanical Asset Replacement
- Black Creek Lift Station Mechanical Asset Replacement
- 1203 Lakeshore and 2409 Roberts Grinder Station Replacements

These projects are planned to repair recurring system problems, to address aging infrastructure, and to coordinate with other City-owned stormwater and drinking water system upgrades. As outlined in the City's Wastewater Asset Management Plan, the City will continue to update their wastewater system inventory and condition assessments over time. As system conditions change, the City may reprioritize current projects and/or include additional projects. By proactively managing their wastewater system through asset management, the City can ensure reliable and sustainable wastewater service at the lowest life cycle cost for the community.

1.3.5 Future Environment without Proposed Projects

Without the construction of the proposed projects, the water quality of local streams, creeks and rivers, and the basements served by the wastewater collection system could be degraded or severely harmed during failure of a sewer or lift station.

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2 Analysis of Alternatives

2.1 Identification of Potential Alternatives

2.1.1 Optimum Performance of Existing Facilities

As outlined in Section 1.3.4, the problems plaguing the City's wastewater collection system are all structural in nature as these assets have met or exceed their expected useful life.

Optimizing the performance of existing facilities will not fix the structural deterioration and reliability concerns present within the system. Therefore, this option was not considered further.

2.1.2 Regional Alternatives

The issues within the system are not regional issues, they are City specific issues. The project areas are located within the City Boundaries and are not nearby any other communities' sewer systems. The City of Muskegon has adequate regional system integration with Muskegon County's Wastewater Collection System which does not have any known capacity or conveyance issues within the study area. Therefore, regional alternatives are not discussed further.

2.1.3 Water and Energy Efficiency

Water and energy efficiency is important when considering alternatives for wastewater treatment plant processes and lift stations. However, the projects outlined in this plan are needed based on structural pipe deficiencies and involve sewer rehabilitation and replacement. Gravity and forcemain sewers themselves do not use water or energy during their daily operation, they merely convey wastewater. Therefore, this consideration was not discussed further for the projects in this report.

2.2 Identification of Principal Alternatives

2.2.1 Project 1: Holbrook Avenue Sewer

2.2.1.1 No Action

No action could potentially result in sanitary sewer overflows due to the additional debris blockages as a consequence of the shallower than recommended slopes on Sanford Street

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and the oversized 20-inch trunk sewer. The unreliable structural condition of the 1920's era clay sewers exacerbates the risk of failure and backups in this area. If no action were taken, these sewers would continue to require excessive operation and maintenance attention from the City DPW. The sewers would continue to structurally deteriorate, adding unnecessary risk of contamination of the natural environment, and adjacent homes and businesses. Therefore, the no action alternative was not considered further.

2.2.1.2 Rehabilitation

This alternative would involve CIPP lining the 8-inch to 18-inch gravity sewer on Holbrook Avenue. While this would lower the risk of failure of the pipes, lining would not solve the flatter sewer slope issues in the sewer. Additionally, CIPP lining would also not solve joint offset defects typical within the older clay pipe, the deteriorating brick manholes, or the deteriorating laterals. Therefore, the rehabilitation alternative was not considered further.

2.2.1.3 Replacement

This alternative would involve replacing the gravity sewer by using the open-cut method. The 8-inch sewer from Peck Street to Leahy Street has slopes below minimum grade, however, it is not possible to deepen the sewer at this location. Consequently, it is estimated that the 8-inch sewer could be replaced with a 12-inch sewer at appropriate slopes. The existing 12-inch to 18-inch sewer between Leahy Street is oversized. This alternative includes replacing the sewer in this location with a new 12-inch sewer at minimum recommended slopes. Various storm sewer catch basin leads would need to be replaced within the project area due to the sanitary sewer replacement. However, the trunk storm sewer would not need to be replaced under this alternative. All sanitary sewer conflicts with the storm sewer system would be attempted to be removed, if grades allow. If the grades of the sewers make it impossible, the sanitary sewers in conflict would be replaced with new sewer in such a way that would significantly reduce the risk of sanitary sewer failure within the storm system.

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2.2.2 Project 2: 6th Street Sewer

2.2.2.1 No Action

No action could potentially result in sanitary sewer overflows due to the additional debris blockages as a consequence of the shallower than recommended slopes on 6th Street. The unreliable structural condition of the 1920's era clay sewers exacerbates the risk of failure and backups in this area. If no action were taken, these sewers would continue to require excessive operation and maintenance attention from the City DPW. The sewers would continue to structurally deteriorate, adding unnecessary risk of contamination of the natural environment, and adjacent homes and businesses. Furthermore, the aging storm and sanitary conflict manholes would not be addressed, risking wastewater overflows directly into the storm sewer system. Therefore, the no action alternative was not considered further.

2.2.2.2 Rehabilitation

This alternative would involve CIPP lining the 8-inch gravity sewer on 6th Street. While this would lower the risk of failure of the pipes, lining would not solve the flatter sewer slope issues in the sewer. Additionally, CIPP lining would also not solve joint offset defects typical within the older clay pipe, the deteriorating brick manholes, or the deteriorating laterals. Therefore, the rehabilitation alternative was not considered further.

2.2.2.3 Replacement

This alternative would involve replacing the 8-inch gravity sewer on 6th Street from Laketon Avenue to Washington Avenue by using the open-cut method. The sewer would be deepened near the downstream (north) end so that the flatter upstream (south) end would be replaced at appropriate sewer slopes. The storm sewers would be replaced within the project area in order to remove the existing sanitary sewer elevation conflicts with the storm system.

2.2.3 Project 3: 7th Street Sewer

2.2.3.1 No Action

No action could potentially result in sanitary sewer overflows due to the additional debris blockages as a consequence of the shallower than recommended slopes on 7th Street. The

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unreliable structural condition of the 1920's era clay sewers exacerbates the risk of failure and backups in this area. If no action were taken, these sewers would continue to require excessive operation and maintenance attention from the City DPW. The sewers would continue to structurally deteriorate, adding unnecessary risk of contamination of the natural environment, and adjacent homes and businesses. Therefore, the no action alternative was not considered further.

2.2.3.2 Rehabilitation

This alternative would involve CIPP lining the 8-inch gravity sewer on 7th Street. While this would lower the risk of failure of the pipes, lining would not solve the flatter sewer slope issues in the sewer. Additionally, CIPP lining would also not solve joint offset defects typical within the older clay pipe, the deteriorating brick manholes, or the deteriorating laterals. Therefore, the rehabilitation alternative was not considered further.

2.2.3.3 Replacement

This alternative would involve replacing the 8-inch gravity sewer on 7th Street from Laketon Avenue to Washington Avenue by using the open-cut method. The sewer would be deepened near the downstream (north) end so that the flatter upstream (south) end would be replaced at appropriate sewer slopes.

2.2.4 Project 4: Glenside Neighborhood Sewers

2.2.4.1 No Action

The large majority of the sanitary sewers and water mains in the Glenside Neighborhood were installed almost 90 years ago in the alleyways. However, the alleyways are unmaintained and most of the utilities have existing obstacles preventing access to them in the case of an emergency. The obstacles include, but are not limited to: fences, garages, landscaping, and trees. Not only is it extremely difficult to dig up the utilities in the event of an emergency, it is difficult to perform routine cleaning and root cutting maintenance throughout the neighborhood. Recent inspections have revealed that many of the clay sewers have structural deficiencies such as fractures, holes, sags, and breaks. No action would increase the risk of failure in the structurally deficient pipes as they age, thus increasing the likelihood of sewer failures and backups into nearby basements. It

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would also fail to address the current accessibility issues plaguing the neighborhood, therefore the no action alternative was not considered further.

2.2.4.2 Rehabilitation

The sewer rehabilitation alternative would consist of CIPP lining the sewers within the neighborhood that have significant structural deficiencies. This alternative would decrease the risk of failure of the sewers in the neighborhood and extend their expected useful life. However, lining does not solve the operation and maintenance issue, nor does it improve the accessibility of the sewers in the event of a failure. Therefore, investing in the sewers in their current location through rehabilitation was not considered further.

2.2.4.3 Replacement

The sewer replacement alternative involves rerouting the structurally deficient sewers out of the unmaintained alleyways and into the road right-of-way. Figure 4 illustrates the conceptual design of this alternative. Based on the existing sewer grades in the neighborhood, the sewers west of Wickham Street would drain toward a new sewer on Westwood Street that was installed in 2020 during Phase I of the Glenside Neighborhood Sewer Project. Phase II is scheduled to be constructed in 2024 and includes sewer installation west of Wickham Drive on Hadden Street, Lexington Avenue, and Randolph Avenue. The majority of the sewers east of Wickham would be rerouted to drain toward a new sewer on Cumberland in Phases IV and V. Phase VI, the final phase, would include installing a sewer on Wickham Drive. The residential sewer laterals would need to be rerouted from the back of the buildings to the front of the buildings in order to drain toward the roadway.

The new sewers would be installed such that the sewers that remained in the alleys following the project could be rerouted to the roadway in the future. Replacement of the sewers in the roadway is the only feasible alternative for the Glenside Neighborhood Sewers that meets all design parameters.

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2.2.5 Project 5: Wood Street Sewer

2.2.5.1 No Action

No action could potentially result in sanitary sewer overflows due to the additional debris blockages as a consequence of the shallower than recommended slopes in the oversized sewer on Wood Street. The unreliable structural condition of the 1920's era clay sewers exacerbates the risk of failure and backups in this area. If no action were taken, these sewers would continue to require excessive operation and maintenance attention from the City DPW. The sewers would continue to structurally deteriorate, adding unnecessary risk of contamination of the natural environment, and adjacent homes and businesses. Therefore, the no action alternative was not considered further.

2.2.5.2 Rehabilitation

This alternative would involve CIPP lining the 20-inch to 24-inch gravity sewer on Wood Street. While this would lower the risk of failure of the pipes, lining would not solve the flatter sewer slope issues in the sewer or address the oversized nature of the sewer. Additionally, CIPP lining would also not solve joint offset defects typical within the older clay pipe or the deteriorating brick manholes. Therefore, the rehabilitation alternative was not considered further.

2.2.5.3 Replacement

This alternative would involve replacing the existing 20-inch to 24-inch trunk sewer on Wood Street with 18-inch sewer from Holbrook Avenue to Spring Avenue using the open-cut method. The sewer would be replaced at recommended sewer slopes to avoid debris buildup.

2.2.6 Project 6: Catherine Avenue Sewer

2.2.6.1 No Action

No action could potentially result in sanitary sewer overflows due to the additional debris blockages as a consequence of the shallower than recommended slopes on Catherine Avenue. The unreliable structural condition of the 1920's era clay sewers exacerbates the risk of failure and backups in this area. If no action were taken, these sewers would continue to require excessive operation and maintenance attention from the City DPW.

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The sewers would continue to structurally deteriorate, adding unnecessary risk of contamination of the natural environment, and adjacent homes and businesses. Therefore, the no action alternative was not considered further.

2.2.6.2 Rehabilitation

This alternative would involve CIPP lining the 8-inch gravity sewer on Catherine Avenue. While this would lower the risk of failure of the pipes, lining would not solve the flatter sewer slope issues in the sewer. Additionally, CIPP lining would also not solve joint offset defects typical within the older clay pipe, the deteriorating brick manholes, or the deteriorating laterals. Therefore, the rehabilitation alternative was not considered further.

2.2.6.3 Replacement

This alternative would involve replacing the 8-inch gravity sewer on Catherin Avenue from Irwin Avenue to Wood Street using the open-cut method. The sewer would be deepened and replaced at appropriate sewer slopes.

2.2.7 Project 7: Jefferson Street Sewer

2.2.7.1 No Action

No action could potentially result in sanitary sewer overflows due to the additional debris blockages as a consequence of the shallower than recommended slopes on Jefferson Street. The unreliable structural condition of the 1920's era clay sewers exacerbates the risk of failure and backups in this area. If no action were taken, these sewers would continue to require excessive operation and maintenance attention from the City DPW. The sewers would continue to structurally deteriorate, adding unnecessary risk of contamination of the natural environment, and adjacent homes and businesses. Therefore, the no action alternative was not considered further.

2.2.7.2 Rehabilitation

This alternative would involve CIPP lining the 8-inch gravity sewer on 6th Street. While this would lower the risk of failure of the pipes, lining would not solve the flatter sewer slope issues in the sewer. Additionally, CIPP lining would also not solve joint offset

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defects typical within the older clay pipe, the deteriorating brick manholes, or the deteriorating laterals. Therefore, the rehabilitation alternative was not considered further.

2.2.7.3 Replacement

This alternative would involve replacing the 8-inch gravity sewer on Jefferson Street from Laketon Avenue to Southern Avenue by using the open-cut method. The sewer would be deepened at Southern Avenue so that the sewer could be replaced at minimum slope.

2.2.8 Project 8: Iona Avenue Sewer

2.2.8.1 No Action

No action could potentially result in sanitary sewer overflows due to the additional debris blockages as a consequence of the shallower than recommended slopes on Iona Avenue between Arthur Street and Terrace Street. The unreliable structural condition of the 1920's era clay sewers exacerbates the risk of failure and backups in the project area. If no action were taken, these sewers would continue to require excessive operation and maintenance attention from the City DPW. The sewers would continue to structurally deteriorate, adding unnecessary risk of contamination of the natural environment, and adjacent homes and businesses. Therefore, the no action alternative was not considered further.

2.2.8.2 Rehabilitation

This alternative would involve CIPP lining the 8-inch gravity sewer on Iona Avenue. While this would lower the risk of failure of the pipes, lining would not solve the flatter sewer slope issues in the sewer. Additionally, CIPP lining would also not solve joint offset defects typical within the older clay pipe, the deteriorating brick manholes, or the deteriorating laterals. Therefore, the rehabilitation alternative was not considered further.

2.2.8.3 Replacement

This alternative would involve replacing the 8-inch gravity sewer on Iona Avenue from Arthur Street to Sophia Street using the open-cut method. The sewer would be deepened between Arthur Street and Terrace Street and replaced at appropriate sewer slopes. The

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15-inch sewer between Sophia Street and Wood Street would also be replaced using the open-cut method.

2.2.9 Project 9: Orchard Avenue Sewer

2.2.9.1 No Action

No action could potentially result in sanitary sewer overflows due to the additional debris blockages as a consequence of the shallower than recommended slopes on Orchard Avenue. The unreliable structural condition of the 1920's era clay sewers exacerbates the risk of failure and backups in this area. If no action were taken, these sewers would continue to require excessive operation and maintenance attention from the City DPW. The sewers would continue to structurally deteriorate, adding unnecessary risk of contamination of the natural environment, and adjacent homes and businesses. Therefore, the no action alternative was not considered further.

2.2.9.2 Rehabilitation

This alternative would involve CIPP lining the 8-inch gravity sewer on Orchard Avenue. While this would lower the risk of failure of the pipes, lining would not solve the flatter sewer slope issues in the sewer. Additionally, CIPP lining would also not solve joint offset defects typical within the older clay pipe, the deteriorating brick manholes, or the deteriorating laterals. Therefore, the rehabilitation alternative was not considered further.

2.2.9.3 Replacement

This alternative would involve replacing the 15-inch and 8-inch gravity sewer on Orchard Avenue from Myrtle Avenue to Getty Street by using the open-cut method. The sewer would be deepened at the downstream (west) end so that the entire sewer would be replaced at appropriate sewer slopes.

2.3 Pipe Material

Polyvinyl chloride (PVC) and ductile iron are the two pipe materials most commonly used for construction of new sewers less than 48-inch diameter.

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2.3.1 Polyvinyl Chloride (PVC) Pipe / Polyethylene Pipe

PVC pipe and Polyethylene pipe are manufactured from petroleum derivatives, chlorine gas, and vinyl chloride. PVC pipe and polyethylene pipe are sensitive to impacts like ultraviolet light exposure and temperature. According to UNIBELL – the nationally recognized authority on PVC pipe and Polyethylene pipe – the impact resistance of PVC pipe and Polyethylene pipe is reduced by approximately 20 percent when exposed to ultraviolet light for extended periods of time. However, PVC and polyethylene materials are resistant to hydrogen sulfide corrosion which makes them optimal materials for sanitary sewer construction.

As flexible pipe, PVC and Polyethylene are sensitive to the type of materials used for bedding in the trench. The strength of flexible pipe largely comes from the soil supporting the pipe from the centerline of the pipe and below. This requires close attention to proper compaction of the granular backfill. Without proper compaction, flexible pipe can deflect under the static load of the soil column to the point of bursting. Since PVC pipe and polyethylene pipe are sensitive to installation compared to ductile iron, the cost associated with installation can be higher than ductile iron.

Fittings connecting the PVC pipe materials for pressure application occasionally have separated over time, which can cause breaks and sewage flooding.

PVC and polyethylene pipe are more difficult to locate because current locating technologies rely on magnetic properties of the pipe material. Locating PVC pipe and polyethylene pipe materials requires installation of a tracing wire. It is possible that this wire can be cut or corrode over time, which may make locating the pipe more difficult.

In most new gravity sewer construction, PVC sewer pipe is an acceptable and cost effective material. Due to the above concerns with fittings, PVC pipe materials will not be considered for force main projects. Polyethylene pipe only will be considered for pressure application if it is high density pipe with butt fusion fittings, flanged and mechanical joint adapters or mechanical restraint.

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2.3.2 Ductile Iron Pipe

The cost of installing ductile iron pipe may be slightly less than PVC since ductile iron pipe is less dependent on the surrounding soils for its strength. The materials for manufacturing ductile iron pipe are more environmentally friendly than PVC pipe and Polyethylene pipe since it is made from recycled steel.

In select situations, there are numerous advantages to using ductile iron pipe over PVC pipe and Polyethylene pipe. Therefore, ductile iron pipe will be considered in the forcemain applications.

2.4 Method of Construction

2.4.1 Open Cut

Traditional open cut methods of excavation are used extensively in the West Michigan area for installation of most underground public utilities. Although the City of Muskegon is a more urban setting, the traffic volumes on many of the roads are not excessive enough to warrant the generally more expensive trenchless technologies currently used today. Open cut construction allows the greatest control of sewer grades in sanitary sewer installation. Many of the projects require slopes far less than traditional trenchless technologies can meet. Open cut will be the preferred method of construction for most applications.

2.4.2 Directional Drill

Directional drilling is the process of using a small, steer-able steel pipe that is guided under the soil to create a pilot hole. The pipe is guided by above-grade monitoring equipment that tracks the depth and location. Once the guided head reaches its location, the host pipe is attached and pulled back through the pilot hole.

Successful directional drilling in gravity sanitary sewer applications requires pipe slopes close to or exceeding one percent. The equipment guidance systems are not accurate enough to install gravity lines with shallower pipe slopes consistently. All projects proposed require minimum slopes much less than 1%.

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Installing larger diameter pipes via directional drilling methods can be exceedingly costly when compared to traditional open cut construction. Horizontal directional drilling will be only be considered for construction of forcemain where grade is less critical.

2.4.3 Bore and Jack

Bore and Jack is a sewer installation method that involves horizontal boring. A hole is drilled between sending and receiving pits without disturbing the ground surface. A bore machine simultaneously ‘jacks’ casing while rotating augers remove the soil back to the sending pit.

The bore and jack method of construction is much slower and more costly than traditional open cut methods. However, the bore and jack process can be effective when crossing under areas where surface disruption needs to be minimized. For example, bore and jack can be beneficial when crossing under railroads, heavily trafficked roads, and/or nearby other surface conditions that would be costly to restore. The only heavily traffic road where the bore and jack method would be considered within the project area is the Wood Street Sewer (Project 5) where the sewer crosses Laketon Avenue which was reconstructed in 2013. The remaining sanitary sewers within the described project areas are entirely located within residential neighborhoods. Therefore, the bore and jack method of construction will not be considered as a sewer installation method for the remaining projects.

2.4.4 Pipe Burst

Pipe bursting is a trenchless method of pipe replacement where a new pipe of the same or larger diameter is pulled through the existing host pipe while “bursting” the deteriorating pipe. Two pits would need to be excavated on both ends of the pipe. A hydraulic machine would then pull a the new pipe back toward the receiving pit behind the bursting head, which breaks up the brittle host pipe to make space for the new one. Pipe bursting is often used to replace brittle pipes such as cast iron, clay, asbestos cement and concrete. It is common practice to be able to upsize the pipe up to two standard diameter sizes (e.g. 6-inch to 10-inch, 10-inch to 15-inch, etc.) in most cases. Pipe bursting follows the existing pipe alignment and slope.

Pipe bursting is more cost effective when there are fewer lateral connections, when additional capacity is needed, and when ground surface restoration costs are high. Significant

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bypassing is required for this method. Any sags in the pipe will not be removed with this method. All of the proposed sanitary sewer replacement projects are located within residential neighborhoods where ground surface restoration costs are relatively low and sanitary sewer lateral connections are high. Therefore the pipe bursting method will not be considered as a sewer replacement method for the sewer replacement projects described in this report.

2.5 Analysis of Principal Alternatives

2.5.1 The Monetary Evaluation

Detailed cost estimates for each alternative are included in Appendix H. EGLE requires a present worth analysis for each project and its alternatives. The present worth analysis seeks to show a monetary comparison of costs for all viable alternatives and the direct impact to sewer users. Factors that are included in the analysis are:

- Capital Costs
- Capitalized Interest Costs
- Operation, Maintenance, and Replacement (OM&R) Costs
- Energy Cost Savings
- Salvage Value of Capital
- Discount Rate Set by the EPA

Several of the factors above are fixed known costs (Capital, Interest, and Salvage Value). Several other factors are variable and are estimated based on best available data (OM&R and Energy Cost Savings). It is anticipated that with improvements to the system, OM&R will be reduced for most sewers. Estimates are used but actual costs will not be known until the work has been completed and real data is available. The reduction in the OM&R on these sewers will allow the City DPW to focus on other locations throughout the City.

Appendix I shows the present worth analysis for each option discussed. Only CWSRF eligible costs are included in the present worth analysis. Selected alternatives for Project 4 (Glenside Neighborhood Sewers) were divided into phases which are further described in

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Section 3.1. The cost estimates include all costs associated with engineering, construction, and mitigation cost if necessary. In summary, the monetary evaluation results are as follows:

2.5.1.1.1 Project 1: Holbrook Avenue Sewer

Alternative No. 1 Replacement. This alternative would involve replacing the gravity sewer by using the open-cut method. The 8-inch sewer from Peck Street to Leahy Street has slopes below minimum grade, however, it is not possible to deepen the sewer at this location.

Consequently, it is estimated that the 8-inch sewer could be replaced with a 12-inch sewer at appropriate slopes. The existing 12-inch to 18-inch sewer between Leahy Street is oversized. This alternative includes replacing the sewer in this location with a new 12-inch sewer.

CWSRF eligible costs include approximately 2,750 feet of 8-inch sewer and laterals to property lines. Due to the location of the sewers and widths of the streets, CWSRF-eligible costs only assume partial road replacement. Storm sewer catch basin leads are included in the project, however, it is anticipated that the 42-inch to 66-inch trunk storm sewer would remain in place. Due to grade conflicts with the sanitary sewer, sanitary sewers crossing through storm manholes would have to be replaced in five locations. The City of Muskegon is also planning to abandon the existing 6-inch water mains within the project area and replace all water services onto the existing 24-inch water main. The City is pursuing Drinking Water Revolving Fund (DWSRF) funding for the water main work (water main and water service replacement only).

The CWSRF eligible cost for this alternative is estimated at \$1,992,000. There are no other viable alternatives.

2.5.1.1.2 Project 2: 6th Street Sewer

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Alternative No. 1 Replacement. This alternative would involve replacing the 8-inch gravity sewer on 6th Street from Laketon Avenue to Washington Avenue by using the open-cut method. The sewer would be deepened near the downstream (north) end so that the flatter upstream (south) end would be replaced at appropriate sewer slopes. The storm sewers would be replaced within the project area in order to remove the existing sanitary sewer elevation conflicts with the storm system.

CWSRF eligible costs include approximately 2,850 feet of 8-inch sewer and laterals to property lines, full road replacement, and some storm sewer and catch basin replacement required for sanitary sewer installation.

DWSRF eligible costs include approximately 2,000 feet of 8-inch and 950 feet of 16-inch water main replacement and water service replacements within the project area. DWSRF eligible costs are estimated at \$1,381,000.

The CWSRF eligible cost for this alternative is estimated at \$1,992,000. There are no other viable alternatives.

2.5.1.1.3 Project 3: 7th Street Sewer

Alternative No. 1 Replacement. This alternative would involve replacing the 8-inch gravity sewer on 7th Street from Laketon Avenue to Washington Avenue by using the open-cut method. The sewer would be deepened near the downstream (north) end so that the flatter upstream (south) end would be replaced at appropriate sewer slopes.

CWSRF eligible costs include approximately 2,650 feet of 8-inch sewer and laterals to property lines, full road replacement, and some storm sewer and catch basin replacement required for sanitary sewer installation.

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DWSRF eligible costs include approximately 2,850 feet of 8-inch water main replacement and water service replacements within the project area. DWSRF eligible costs are estimated at \$1,156,000.

The CWSRF eligible cost for this alternative is estimated at \$2,553,000. There are no other viable alternatives.

2.5.1.1.4 Project 4: Glenside Neighborhood Sewers

Alternative No. 1 Replacement (Figure 4). The sewer replacement alternative involves rerouting the old, structurally deficient sewers out of the unmaintained alleyways and into the City-owned road right-of-way. Wastewater flows would be redirected toward new sewers on Westwood Street and Cumberland Street. Work on private property would be required to reroute laterals from the alley to road right-of-way (CWSRF ineligible). Water mains in the affected alleys could also be abandoned (CWSRF ineligible) and rerouted to the road right-of-way if the City chooses during the design period.

CWSRF eligible costs include approximately 12,630 feet of 8-inch to 10-inch gravity sewer, lateral replacement to the property line, and some storm sewer and catch basin replacement required for sanitary sewer installation.

The CWSRF eligible cost for this alternative is estimated at \$11,152,000.

CWSRF ineligible costs include all work on private property required to reroute the residential laterals from the alleyway to the road. Water main costs are estimated to be \$1,492,000 for Phase III. Water main costs are not included for Phases IV through VI.

The CWSRF ineligible cost for this alternative (lateral rerouting) is estimated at \$4,474,000. There are no other viable alternatives.

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2.5.1.1.5 Project 5: Wood Street Sewer

Alternative No. 1 Replacement. This alternative would involve replacing the existing 20-inch to 24-inch trunk sewer on Wood Street with 18-inch sewer from Holbrook Avenue to Spring Avenue using the open-cut method. The sewer would be replaced at recommended sewer slopes to avoid debris buildup.

CWSRF eligible costs include approximately 3,665 feet of 18-inch sewer and laterals to property lines, full road replacement, and some storm sewer and catch basin replacement required for sanitary sewer installation. Water main costs were not included.

The CWSRF eligible cost for this alternative is estimated at \$4,733,000. There are no other viable alternatives.

2.5.1.1.6 Project 6: Catherine Avenue Sewer

Alternative No. 1 Replacement. This alternative would involve replacing the 8-inch gravity sewer on Catherine Avenue from Irwin Avenue to Wood Street using the open-cut method. The sewer would be deepened and replaced at appropriate sewer slopes.

CWSRF eligible costs include approximately 2,600 feet of 8-inch sewer and laterals to property lines, full road replacement, and some storm sewer and catch basin replacement required for sanitary sewer installation. Water main costs were not included.

The CWSRF eligible cost for this alternative is estimated at \$2,616,000. There are no other viable alternatives.

2.5.1.1.7 Project 7: Jefferson Street Sewer

Alternative No. 1 Replacement. This alternative would involve replacing the 8-inch gravity sewer on Jefferson Street from Laketon Avenue to Southern Avenue by using the open-cut method. The sewer would be deepened at Southern Avenue so that the sewer could be replaced at minimum slope.

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CWSRF eligible costs include approximately 1,620 feet of 8-inch sewer and laterals to property lines, full road replacement, and some storm sewer and catch basin replacement required for sanitary sewer installation. Water main costs were not included.

The CWSRF eligible cost for this alternative is estimated at \$1,435,000. There are no other viable alternatives.

2.5.1.1.8 Project 8: Iona Avenue Sewer

Alternative No. 1 Replacement. This alternative would involve replacing the 8-inch gravity sewer on Iona Avenue from Arthur Street to Sophia Street using the open-cut method. The sewer would be deepened between Arthur Street and Terrace Street and replaced at appropriate sewer slopes. The 15-inch sewer between Sophia Street and Wood Street would also be replaced using the open-cut method.

CWSRF eligible costs include approximately 2,630 feet of 8-inch sewer, 300 feet of 15-inch sewer and laterals to property lines, full road replacement, and some storm sewer and catch basin replacement required for sanitary sewer installation. Water main costs were not included.

The CWSRF eligible cost for this alternative is estimated at \$1,435,000. There are no other viable alternatives.

2.5.1.1.9 Project 9: Orchard Avenue Sewer

Alternative No. 1 Replacement. This alternative would involve replacing the 8-inch gravity sewer on Orchard Avenue from Myrtle Avenue to Getty Street by using the open-cut method. The sewer would be deepened at the downstream (west) end so that the flatter entire sewer would be replaced at appropriate sewer slopes.

CWSRF eligible costs include approximately 1,900 feet of 10-inch sewer and laterals to property lines, 1,650 feet of 8-inch

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sewer and laterals to property lines, full road replacement, and some storm sewer and catch basin replacement required for sanitary sewer installation.

DWSRF eligible costs include approximately 3,750 feet of 8-inch water main replacement and water service replacements within the project area. DWSRF eligible costs are estimated at \$1,910,000.

The CWSRF eligible cost for this alternative is estimated at \$3,242,000. There are no other viable alternatives.

2.5.2 The Environmental Evaluation

In the previous CWSRF Project Plan submitted by the City of Muskegon in 2018, the City was required to make contact with several organizations to determine if there will be any cultural or natural environmental impact by the proposed construction activities. However, EGLE no longer requires the applicant to contact these organizations when preparing the Project Plan. Nevertheless, below is a brief initial discussion of the potential impacts the proposed projects will have on cultural and environmental resources based on available preliminary information.

2.5.2.1 Cultural Resources

The proposed projects will not impact existing structures in work areas. Therefore, no historic or archaeological sites are expected to be impacted by the construction of the proposed project.

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2.5.2.2 Natural Environment

2.5.2.2.1 Climate

Normal climatological information for the City of Muskegon was obtained from the National Weather Service Forecast Office located in Grand Rapids, Michigan.

<u>Averages</u>	<u>Spring</u>	<u>Summer</u>	<u>Fall</u>	<u>Winter</u>
High Temperature	55	80	59	33
Low Temperature	37	60	43	22
Mean Temperature	46	69	51	28
Precipitation (inches)	8.41	8.31	10.36	6.41
Seasonal Snowfall (inches)	11.3	0	6.2	76.2

2.5.2.2.2 Air Quality

It is not anticipated that the proposed projects would facilitate the growth of any residential or commercial development as all of the projects are either rehabilitating or replacing existing wastewater infrastructure. Therefore the projects would not negatively impact the air quality in the affected areas.

2.5.2.2.3 Wetlands

A wetlands map containing City of Muskegon service area is included in Appendix J. The wetland delineation data was obtained from the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI).

Based on the wetland maps, it does not appear that wetlands will be impacted in any of the project areas. However, if any wetlands are suspected to be located within the project area a wetland survey will be completed in preliminary design to determine the presence of wetlands. If wetlands are in the project area, a detailed plan will be developed to avoid or minimize the wetland impact and all necessary wetland permits will be obtained.

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2.5.2.2.4 Coastal Zones

A coastal zone management area map showing the City of Muskegon area is included in Appendix K. The coastal zone delineation data was obtained from the Michigan Coastal Zone Management Program, Office of the Great Lakes. The City of Muskegon includes a beautiful section of the Lake Michigan Shoreline which includes Pere Marquette Park and portions of Kruse Park and Muskegon State Park.

Based on the coastal zone map, it appears that all proposed projects lie within a coastal zone management area. However, none of the proposed work for these projects will have any effect on the Lake Michigan Shoreline. All projects will be consistent with the approved state coastal zone management program.

2.5.2.2.5 Floodplains

Floodplain Maps for the City of Muskegon are provided in Appendix L. The maps are provided by the Federal Emergency Management Agency (FEMA) and the floodplain areas show the location of the 100-year floodplain.

It is anticipated that none of the projects require work within a floodplain. However if work is required within a floodplain, ground surfaces will be restored after construction such that no fill will be placed in the floodplain.

Upon authorization and completion of detailed design, a determination of floodplain impacts will be made, a mitigation plan will be developed and all applicable and necessary permits will be obtained from the EGLE.

2.5.2.2.6 Inland Lakes and Streams

It is anticipated that none of the projects will impact nearby inland lakes and streams and will not require an EGLE permit.

2.5.2.2.7 Natural or Wild and Scenic Rivers

No designated wild, scenic or natural rivers or tributaries exist within the study area. According to the Department of Natural Resources (DNR), Muskegon River is “under study” for inclusion as a National Wild and Scenic River. However, the

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proposed projects will not impact the Muskegon River or have any adverse impact on a designated river segment. A watershed map is provided in Appendix M.

2.5.2.2.8 National Natural Landmarks

The lists of National Natural Landmarks in Michigan on the EGLE's website and the National Parks Service website were reviewed to determine whether there are any listed landmarks that could be impacted by project construction or operation. It was determined that no national natural landmarks exist within the project study area.

2.5.2.2.9 Recreational Facilities

The City of Muskegon community has many outdoor activities to offer. A map showing the recreational facilities is shown in Appendix N.

2.5.2.2.10 Topography

The study area is located along the coastline of Lake Michigan and Muskegon Lake. The water surface elevation in Lake Michigan is what controls the water surface elevation of Muskegon Lake and portions of the surrounding creeks. Lake Michigan water levels typically fluctuate between 576 and 582 feet. The highest elevation in the study area used to be Pigeon Hill before it was mined for sand. Now the highest elevation is roughly 730 feet near the Lake Michigan shoreline. A topographic map based on contours provided by Muskegon County is shown in Appendix O.

A large majority of the surface runoff in the study area is directed towards Muskegon Lake, while smaller portions flow directly to Lake Michigan or south to Mona Lake (via Little Black Creek). The major tributaries to Muskegon Lake in the study area are Ruddiman Creek, Ryerson Creek, and Four Mile Creek. All proposed projects are within the Muskegon Lake watershed.

2.5.2.2.11 Geology

According to the Hydrogeologic Atlas of Michigan, the surficial geology of the study area consists of lake bed deposits of sand. The thickness of the unconsolidated sediments ranges from approximately 200 to 400 feet in the vicinity of the Study area.

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2.5.2.2.12 Soils

The soils in the study area may generally be described as sandy with high concentrations of Rubicon sand. These soils are generally highly permeable, such that water tends to infiltrate the soils and runoff potential is low. There is an area within the City known as the Clay Hill Neighborhood where the soils largely consist of clayey types, as the name of the neighborhood would indicate. This area is approximately bounded by Ruddiman Creek, Muskegon Lake, and Seaway Drive. These soils are not highly permeable which creates high runoff potential.

A General Soil Map for the City is included in Appendix P. As a part of the final design process, soil borings will be obtained in select areas. These soil borings will be useful in determining soil types, depth to groundwater, and soil stability.

2.5.2.2.13 Agricultural Resources

Prime farmland, as defined by the U.S. Department of Agriculture, is the land that is best suited to producing food, feed, forage, fiber, and oilseed crops. When treated and managed using acceptable farming methods, it has the soil quality, growing season, and moisture supply needed to economically produce a sustained high yield of crops. Prime farmland produces the highest yields with minimal inputs of energy and economic resources.

Prime farmland may now be cropland, pasture, or woodland, or it may be in other uses, but it is not urban and built-up land or water areas. The City is largely developed and no agricultural land is present within the study area as noted in the existing land use map (Appendix A), zoning map (Appendix B), and future land use map (Appendix C).

2.5.2.2.14 Fauna and Flora

The proposed projects are located in urbanized, highly developed areas. The majority of construction would occur within road and alley right-of-ways. Therefore it is unlikely that construction would impact habitats of the endangered and threatened species within the study area. During the design phase of the projects, appropriate investigation will be performed and permits will be obtained in order to ensure that all endangered or threatened species are protected.

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While most endangered or threatened flora and fauna are not likely to have habitats within the urbanized project areas, habitats of the Indiana bat (endangered) and the Northern long-eared bat (threatened) have the potential to be encountered. These bats typically roost under bark or in crevices in trees. It may be determined that tree-cutting is required in the project areas. If possible, the cutting will be limited to the time periods between October 1 and March 31 in order to protect young bats that are not able to fly. Otherwise, surveys of the trees will be performed by a qualified biologist in order to determine whether the trees are potential habitats for the bats.

2.5.2.2.15 Unique and Natural Features

The City of Muskegon is unique because of its proximity to various natural water features, stunning shorelines, and recreational opportunities. A map of the natural features in the study area is included in Appendix Q. These qualities of the study area will not be adversely impacted by the proposed wastewater system improvements. Instead, construction of the proposed projects will ensure that the community will continue to have a reliable and sustainable wastewater system for years to come.

2.5.2.2.16 Contaminated Sites

The City of Muskegon has a long history as an industrial port. Unfortunately, some past and present industries have contaminated the soil and groundwater in various areas throughout the City. A series of maps in Appendix R highlight all of the known contamination sites throughout the City.

There are no known contaminated sites nearby the proposed project areas. However, if contamination is suspected when soil borings are collected or during construction, groundwater samples will be taken to identify if contamination is present at the location. Pretreatment of dewatering or discharge into the sanitary sewer may be required depending on the situation. EGLE will be consulted so as to not cause the contamination to spread.

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2.5.2.2.17 Navigable Waters

None of the proposed work is located in navigable waters under the jurisdiction of the United States Army Corps of Engineers (USACE).

3 Selected Alternative

3.1 Description of the Selected Alternative

Figure 5 shows the selected wastewater system improvement locations in the City's wastewater collection system. A summary of the selected alternatives including brief descriptions and cost estimates is included in Table 4.

General scopes of work were developed in this project plan and are included in the project cost estimates to make a preliminary determination of project eligibility. Detailed scopes of work and bases of design were not developed as part of this planning document. Detailed bases of design, including existing and proposed flows and capacities will be provided for all projects when a funding source has been identified and when design engineering has been authorized.

Project 1: Alternative No. 1. Replace the existing 8-inch to 18-inch trunk sewer with approximately 2,750 feet of 12-inch sewer on Holbrook Avenue from Peck Street to Wood Street via the open-cut method. Replace all laterals within the right-of-way. Project includes $\frac{3}{4}$ of the road reconstruction costs with the assumption the remaining $\frac{1}{4}$ of the costs would be non-eligible.

The total estimated project cost is \$1,992,000. The total estimated non-eligible road reconstruction cost is \$402,000. The total estimated DWSRF eligible cost is \$472,000.

Project 2: Alternative No. 1. Deepen and replace approximately 2,850 feet of 8-inch sewer on 6th Street from Laketon Ave. to Washington Ave via the open-cut method. Replace all laterals within the right-of-way. Reconstruct all roadway within the project area.

The total estimated project cost is \$2,932,000. The total estimated DWSRF eligible cost is \$1,381,000.

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Project 3: Alternative No. 1. Deepen and replace approximately 2,650 feet of 8-inch sewer on 7th Street from Laketon Avenue to Washington Avenue via the open-cut method. Replace all laterals within the right-of-way. Reconstruct all roadway within the project area.

The total estimated project cost is \$1,156,000.

Project 4: Alternative No. 1. Due to the large overall scope of the Glenside Neighborhood Sewers Project, the Project is divided into six phases. The first phase was completed in 2020. The second phase is scheduled to be constructed in 2024. Figure 4 illustrates the conceptual design for the neighborhood and the proposed phasing.

Install all sewers using open-cut methods. Sewer laterals connecting to sewers in the alleys designated for abandonment will be rerouted into new sewers in the road right-of-way. Full road reconstruction will be required where new sanitary gravity mains are relocated (CWSRF eligible). Work on private property will be required for lateral rerouting and is included in cost estimates as a CWSRF ineligible expense.

During the design period, the City may also decide to reroute the aging water mains located within the unmaintained alleys into the road right-of-way. Water main replacement costs are a CWSRF ineligible expense but financing will be pursued through the DWSRF program. Water main costs were included for reference in the Phase III cost estimate, yet it was assumed that the road restoration costs would derive entirely from CWSRF funding. Water main costs were excluded from the cost estimates for Phases IV through VI.

The total estimated CWSRF eligible cost for the entire project (Phases III through VI) is \$11,152,000. The total estimated private property cost (CWSRF ineligible) for the entire project is \$1,745,000. The total estimated DWSRF eligible costs for Phases II and III is \$4,474,000.

The details of the proposed phasing are as follows:

Phase I – Completed in 2020

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The 8-inch sewer on Westwood Street was replaced with 8-inch sewer from Randolph Avenue to Muskegon County's Ryerson Creek Trunk Sewer near Glen Avenue. All laterals on the east side of Westwood Street were rerouted to the new sewer in the road right-of-way. Phase I is the smallest phase and was used as a "pilot project" to develop and improve the City's method for rerouting the residential sewer laterals and communicating with affected customers.

Phase II – FY23 (2024 Construction)

Construct 8-inch sewer on Lexington Avenue from Westwood Street to Wickham Drive. Construct 8-inch sewer on Hadden Street from Randolph Avenue to Wickham Drive. Construct 8-inch sewer on Randolph Avenue between Westwood Street and Wickham Drive. Reroute all laterals to the road right-of-way within the project area. Abandon the alley sewers between Westwood Street and Hadden Street. Additionally, abandon the alley sewer in the block encompassed by Lexington Avenue, Hadden Street, and Wickham Drive.

The project is currently in the design phase and will be constructed in 2024 using FY23 CWSRF funding.

Phase III – FY24

Construct 8-inch sewer on Westwood Street from Randolph Avenue to Montague Avenue. Construct 8-inch sewer on Winchester Drive and Montague Avenue west of Wickham Drive. Reroute all laterals to the road right-of-way within the project area. Abandon the alley sewers between Randolph Avenue and Winchester Drive, and the alley sewers between Winchester Drive and Montague Avenue.

The total estimated CWSRF eligible cost for Phase III is \$2,747,000. The total estimated private property cost (CWSRF ineligible) is \$915,000. The total estimated water main cost (DWSRF eligible) is \$1,492,000.

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Phase IV - Future

Construct 10-inch sewer on Cumberland Street from Glen Avenue to the alley sewer between Beardsley Avenue and Randolph Avenue. Construct 8-inch sewer on Ridge Avenue, Lexington Avenue, and Beardsley Avenue from Wickham Drive to the 10-inch sewer on Cumberland Drive. Abandon all alley sewers between Ridge Avenue and Beardsley Avenue and reroute all sewer laterals to the road right-of-way. Portions of the alley sewer east of Wickham Drive will need to remain in place in order to serve the residences on Wickham Drive.

The depth and grade of the 10-inch sewer on Cumberland Street will be designed such that all upstream laterals within the project area will be able to be picked up by the gravity mains placed at minimum slopes. Additionally, the sewer will be designed such that other alley sewers within the neighborhood not addressed in this Project Plan could be rerouted to the road rights-of-way in the future.

The total estimated CWSRF eligible cost for Phase IV is \$2,306,000. The total estimated CWSRF ineligible cost is \$858,000.

Phase V - Future

Construct remainder of 10-inch sewer on Cumberland Street from the alley between Beardsley Avenue and Randolph Avenue to Montague Avenue. Construct 8-inch sewers on Randolph Avenue, Winchester Drive, and Montague Avenue as shown in Figure 4. Abandon all alley sewers within the project area between Montague Avenue and Beardsley Avenue and reroute all sewer laterals to the road right-of-way. Portions of the sewer in the alley east of Wickham Drive will need to remain in place in order to serve some residences on Wickham Drive until Phase VI is constructed.

The total estimated CWSRF eligible cost for Phase IV is \$5,126,000. The total estimated CWSRF ineligible cost is \$2,359,000.

Phase VI - Future

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Construct 8-inch sewer on Wickham Drive from Montague Avenue to Hadden Street as shown in Figure 4. Abandon the north-south alley sewers just east and west of Wickham Drive and reroute all sewer laterals to the road right-of-way.

The total estimated CWSRF eligible cost for Phase VI is \$973,000. The total estimated CWSRF ineligible cost is \$342,000.

Project 5: Alternative No. 1. Replace approximately 3,630 feet of existing 20-inch to 24-inch sewer with 18-inch sewer on Wood Street from Holbrook Avenue to Spring Street via the open-cut method. Install sewer across Laketon Avenue using the bore & jack method to avoid traffic disruption. Replace all laterals within the right-of-way. Reconstruct all roadway within the project area.

The total estimated project cost is \$4,733,000.

Project 6: Alternative No. 1. Deepen and replace approximately 2,600 feet of 8-inch sewer on Catherine Avenue from Irwin Avenue to Wood Street. Replace all laterals within the right-of-way. Reconstruct all roadway within the project area.

The total estimated project cost is \$2,616,000.

Project 7: Alternative No. 1. Deepen and replace approximately 1,620 feet of 8-inch sewer from Laketon Ave. to Southern Avenue via the open-cut method. Replace all laterals within the right-of-way. Reconstruct all roadway within the project area.

The total estimated project cost is \$1,435,000.

Project 8: Alternative No. 1. Deepen and replace approximately 950 feet of 8-inch sewer on Iona Avenue from Arthur Street to Terrace Street via the open-cut method. Replace approximately 1,680 feet of 8-inch sewer from Terrace Street to Sophia Street and approximately 300 feet of 15-inch sewer from Sophia Street to Wood Street via the open-cut method. Replace all laterals within the right-of-way. Reconstruct all roadway within the project area.

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The total estimated project cost is \$2,659,000.

Project 9: Alternative No. 1. Deepen and replace the existing oversized 15-inch sewer with 10-inch sewer on Orchard Avenue from Myrtle Avenue to Scott Street via the open-cut method. Deepen and replace the existing 8-inch sewer from Scott Street to Getty Street using the open-cut method. Replace all laterals within the right-of-way. Reconstruct all roadway within the project area.

The total estimated project cost is \$3,242,000. The total estimated DWSRF eligible cost is \$1,910,000.

Project Schedule:

The table below is a schedule for the proposed wastewater collection system improvement project intended for Projects 1 through 3 and Phase III of Project 4. They would be funded under the fourth quarter of fiscal year 2024.

CWSRF Project (4th Quarter 2024)
Proposed Project Schedule

Milestone	Date
Hold Public Hearing	April 25, 2023
Submit Final Project Plan to EGLE	May 1, 2023
Receive Approval of Project Plan	August 2023
User Charge System Approved	April 2024
Plans and Specifications Approved	May 2024
Receive Construction Permit	May 2024
Receive Construction Bids	June 2024
CWSRF Loan Awarded	August 2024
Begin Construction	September 2024
Construction Completed	November 2025

Projects 4 (Phases IV, V and VI) through 9 are being planned as future projects with the exact schedule to be determined.

3.2 Cost Estimates

Appendix H contains cost estimates for the proposed wastewater system improvements. The project costs include construction costs and approximately 30% for construction contingencies, legal, administrative, and project engineering costs.

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3.3 Authority to Implement the Selected Alternatives

Implementation of the proposed project is based on the assumption that the project will be financed by a low-interest loan from the CWSRF program. City of Muskegon has the necessary legal, institutional, financial, and managerial resources available to ensure the construction, operation and maintenance of the proposed facilities.

3.3.1 Financials

The City of Muskegon recently developed a financial plan as required by EGLE as part of the SAW grant program. As a result, the City has continued instituting rate adjustments according to the plan in anticipation of future capital improvements. The City of Muskegon has sufficient funds to pay for the proposed bond payments for the bonding period of twenty years.

3.3.2 Design/Permits

All FY2024 projects will be under design later in 2023 and will be submitted for all necessary permits prior to the required deadline.

3.4 Users Costs

EGLE requires the applicant to perform a Present Worth analysis of the various options. The Present Worth analysis (Appendix I) uses discount factors that reduce the annual expenses compared to what the annual bond payment would be. Appendix S contains the annual cost summary and provides the worst-case scenario where the proposed bond payment will not be reduced by any anticipated discounts related to salvage value, reduction in OM&R, energy savings, principal forgiveness, or grants. The expected annual debt service for the proposed projects FY 2024 projects based on the CWSRF loan criteria, and a 2.75% interest rate will be approximately \$671,500 per year.

This provides a worst-case scenario where the proposed bond payment will not be reduced by any anticipated discounts related to salvage value, reduction in OM&R, energy savings, principal forgiveness, or grants. This would represent an approximate increase in user rates of \$4.00 per month for the average residential user. The City will make a decision on final number of projects to complete and any rate adjustments once the CWSRF funding levels for FY 2024 are set.

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3.5 Overburdened Community

The City of Muskegon meets the definition of being “overburdened” based the definition established by EGLE under the CWSRF program. The City’s median annual household income is \$37,827 and the City’s taxable land value per capita \$16,910, which are below the criteria established by EGLE. The overburdened status typically qualifies the community for extra consideration for grants and loan principal forgiveness.

3.6 Useful Life

The City of Muskegon intends to pay back the CWSRF loan on a 20-year amortization schedule. EGLE guidance requires that the loan terms must not exceed the useful life of the project. All projects are general sanitary gravity main sewer installation. The expected useful life for new sanitary sewer pipes and manholes is approximately 75 years. For these projects, the useful life far exceeds the length of the loan terms.

4 Evaluation of Environmental Impacts

4.1 General

The anticipated environmental impacts resulting from the construction of the selected plan include beneficial and adverse, short and long-term, and irreversible and irretrievable. The following is a discussion of the anticipated environmental impacts of the selected plan.

4.1.1 Beneficial Impacts

- Construction activities associated with the wastewater system would occur primarily within existing road rights-of-way and alleys; construction will be confined to the section of sanitary sewer being replaced minimizing disturbance to residents.
- Construction and equipment manufacturing related jobs would be generated.
- Local contractors would have an equal opportunity to bid on the construction contracts.
- Preservation of existing water quality.
- No construction of new roads or development.
- Allow City DPW to refocus operation and maintenance efforts toward previously neglected activities.

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- New sewer infrastructure will be maintainable.
- New sewer infrastructure will be accessible in the event of an emergency.
- Improvement of existing roads.
- No increased storm water runoff.
- Improvement of storm water quality.
- No disruption to fish and wildlife.
- No detrimental impacts on air quality.
- Improved soil erosion control.
- Increased energy efficiency.
- No negative impact on the surrounding groundwater.
- Lower consumption of energy and natural resources due to reduced I/I.
- No impact on historic sites, archaeological sites, cultural sites, or recreational areas.
- No impact on threatened or endangered species.
- More reliable wastewater collection system.

4.1.2 Adverse Impacts

- Noise and dust would be generated during construction of the project.
- Traffic disruptions.
- Use of energy and natural resources.

4.1.3 Short and Long-Term Impacts

The short-term adverse impacts associated with construction activities would be minimal, and mitigable, in comparison to the resulting long-term beneficial impacts.

4.1.3.1 Short Term Adverse Impacts

- Traffic disruption.
- Dust and noise.
- Use of energy and natural resources.
- Construction safety hazards – the projects will be designed with the overall health and safety of construction workers and operators in mind, although construction site safety is the Contractor's responsibility.

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4.1.3.2 Short Term Beneficial Impacts

- Construction activities associated with the wastewater collection system would occur primarily within existing road rights-of-way or easements and outside of the road pavement minimizing disturbance to residents.
- No disruption to fishing and recreational boating
- No disruption to fish and wildlife
- Roads would be reconstructed where they are impacted by the replacement of the existing sewers.
- Construction and equipment manufacturing related jobs would be generated.
- Local contractors would have an equal opportunity to bid on the construction contracts.
- No detrimental impacts on air quality.
- No negative impact on the surrounding groundwater.
- No impact on prime or unique agricultural lands.

4.1.3.3 Long Term Adverse Impacts

- None

4.1.3.4 Long Term Beneficial Impacts

- A more reliable and resilient wastewater collection system.
- A wastewater system with appropriate pipe capacities.
- Lower operation and maintenance costs for new manholes and sewers.
- Overall reduction in sanitary sewer infrastructure.
- Reduced infiltration and inflow.
- Increased manhole and sewer accessibility.
- Reduced risk of sanitary sewer overflows and contamination of surface waters.
- No increased stormwater runoff.
- No impact on historical sites, archaeological sites, cultural sites, or recreational areas.
- No impact on threatened or endangered species.
- Recycle and reuse natural resources.

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4.2 Analysis of Impacts

4.2.1 Direct Impacts

Based strictly on the location of the nine projects (Figure 5), it is not expected that there will be impacts to wetlands or floodplains. There is a potential to impact endangered species depending on their presence within the project areas. Impact to the endangered species will be avoided where possible. If impact is unavoidable, it will be minimized and mitigated, if necessary, and all permits will be obtained.

4.2.1.1 Wetlands

It is anticipated that none of the projects will impact any wetlands.

4.2.1.2 Floodplains

It is anticipated that none of the projects will require work within a floodplain.

4.2.1.3 Other Resources

The construction of the proposed project should have no effect on historic, archaeological, geographic, cultural or recreational areas, as most construction activities would be confined to existing developed sites and within road rights-of-way or existing sewer easements. Previously referenced figures show the proposed construction locations for the project. No residences or businesses would be relocated.

The projects will not detrimentally affect the water quality or air quality in the area. Water quality can be protected during construction via turbidity curtains and proper bank stabilization.

The CWSRF program requires competitive bidding for all projects exceeding \$50,000. This will allow a larger number of contractors to bid on the projects compared to projects that would be solicited to a short list of contractors. Construction related jobs may be created due to the amount of work anticipated to be completed in the next few years.

The proposed projects are not intended to extend or construct new road to previously undeveloped lands within the work areas. The proposed work is to replace or improve an existing wastewater collection system to better serve its existing customers.

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In most cases, portions of existing road will be replaced since the proposed sewer main may be located in segments of the road pavement. This reconstruction of existing roads would bring them into current standards of road construction and improve safety.

4.2.2 Indirect Impacts

The proposed wastewater facilities are sized to provide service for 20 years of future growth in the study area, based on current trends. Future growth in the study area will not greatly alter the character of the area. Future growth would be subject to conformance with the land use and zoning plans of City of Muskegon.

4.2.3 Cumulative Impacts

Providing a more reliable wastewater collection system with new updated equipment and structures to the customers of the system would be the primary cumulative impact anticipated from the construction of the project.

5 Mitigation

5.1 Short Term Construction Related Mitigation

Standard procedures used in the construction industry will be included in the construction contract documents to mitigate construction activities.

5.1.1 Traffic Disruption

All projects are located in road rights-of-way and in sewer easements where streets, parking areas and pedestrian facilities may be impacted. All components of the project will be coordinated carefully with residences and businesses in the area, and construction methods will be selected to minimize disruptions.

Standard traffic and safety control devices such as barricades and lighted barrels will be in place to warn and protect residents during construction activities.

5.1.2 Dust and Noise

Dust control methods such as water and/or brine will be used to keep dust to a minimum. All haul roads and public roadways will be swept daily and maintained to assure residents access to the area. Construction equipment will be maintained in good condition to decrease noise.

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5.1.3 Soil Erosion

Soil erosion and sedimentation control measures such as straw bales, sedimentation basins, and silt fence, will be part of the construction activities to prevent soil release and protect streams and wetlands.

5.1.4 Wastewater Service Disruption

During construction of the wastewater projects, residents and businesses existing sewer services must be transferred to the sewer mains. This typically will require the use of bypass pumping.

5.1.5 Working in Floodplains

It is anticipated that none of the projects will require work within a floodplain.

5.1.6 Working in Wetlands

It is anticipated that none of the projects will impact any wetlands.

5.1.7 Potential Loss of Wildlife / Habitat

The proposed projects are located in urbanized, highly developed areas. The majority of construction would occur within road and alley right-of-ways. Therefore it is unlikely that construction would impact habitats of the endangered and threatened species within the study area. During the design phase of the projects, appropriate investigation will be performed and permits will be obtained in order to ensure that all endangered or threatened species are protected.

If trees are required to be cut down for any project, tree cutting activities will be limited to the time periods between October 1 and March 31, if possible. If tree cutting is performed outside of this season, surveys of the trees will be performed in order to determine whether they are roost trees for the endangered Indiana bat or the threatened Northern long-eared bat.

5.2 Mitigation of Potential Long-Term Impacts

General construction activities in the wastewater system improvements will prohibit the disposal of soils in wetlands, floodplains, or other sensitive areas. Catch basins will be protected on the distribution system where earth changing activities will take place.

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5.2.1 Permits

All Part 41 construction permits will be obtained. It is not anticipated that permit applications will be required from EGLE for wetlands (Part 303), floodplains (Part 31), or inland lakes and streams (Part 301). Permit applications for soil erosion and sedimentation control (SESC) will be submitted and permits obtained from Muskegon County Department of Public Works.

5.2.2 Use of Natural Resources

As a result of the sewer main construction, natural resources such as gravel, sands, oil, and fuels will be utilized and consumed. To minimize the impact on the natural resources a number of things will be utilized during the construction.

Recycled materials like scrap iron will be used to make the ductile iron forcemain pipe. This will require less use of iron ore that is mined from the ground. The use of erosion control measures will be composed of recycled or natural products that do not use or use less synthetic materials made from oil.

5.2.3 Energy Use

The use of energy is inevitable in operating wastewater lift stations, maintaining sewer infrastructure, and producing materials used for construction. Using recycled or natural eco-friendly products as part of the construction process will use less energy compared to using nonrenewable resources. The use of the recycled and/or eco-friendly products will not completely mitigate the use of all energy but it will offset a small percent.

An additional benefit of the Project Plan is that the volume of I&I is likely to decrease due to the replacement of leaky, structurally deficient sewers throughout the City. This will result in reduced energy demand for pumping and treating the wastewater.

5.3 Mitigation of Indirect Impacts

There are no major projected changes in the land use of the study area that would significantly impact wastewater flows beyond the average daily flow projections and maximum daily flow projections provided in Tables 2 and 3. A copy of the zoning and land use maps for the City are included in Appendix A, B and C. All of the projects are proposed in order to replace existing

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sewer and lift station infrastructure. None of the proposed projects are located in areas where significant growth or land use changes are projected to occur.

All of the community's ordinances can be found on their website. General rules are the same as EGLE permits require, such as storm water containment, and soil erosion and sedimentation control.

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Tables

Table 1	Historical and Projected Population
Table 2	Historical and Projected Average Daily Wastewater Flows
Table 3	Pump Station Capacities
Table 4	Summary of Selected Alternatives

Table 1: Population Served - Muskegon County Resource Recovery Center

	2010 Total Population*	2020 Population*	Estimated Percent Served**	2020 Population Served	Projected 2035 Population Served***	Projected 2045 Population Served***	Annual Growth Rate****
Cedar Creek Township	3,186	3,192	11%	342	718	1,177	5.06%
City of Montague	2,361	2,417	93%	2,251	2,304	2,340	0.16%
City of Muskegon	38,401	38,318	100%	38,318	40,834	42,603	0.42%
City of Muskegon Heights	10,856	9,917	100%	9,917	9,917	9,917	0.00%
City of North Muskegon	3,786	4,093	100%	4,093	4,063	4,044	-0.05%
City of Norton Shores	23,994	25,030	90%	22,527	36,519	50,395	3.27%
City of Roosevelt Park	3,831	3,902	100%	3,902	3,906	3,908	0.01%
City of Whitehall	2,706	2,909	100%	2,909	3,261	3,520	0.77%
Dalton Township	9,300	9,427	1%	118	272	473	5.70%
Egelston Township	9,909	11,128	43%	4,808	6,193	7,331	1.70%
Fruitland Township	5,543	5,793	1%	58	111	172	4.45%
Fruitport Township	13,598	14,575	12%	1,724	9,749	30,946	12.24%
Laketon Township	7,563	7,626	51%	3,908	4,800	5,505	1.38%
Montague Township	1,600	1,555	3%	49	84	121	3.72%
Muskegon Township		17,596	93%	16,428	16,907	17,234	0.19%
Whitehall Township	1,739	1,768	38%	678	1,470	2,464	5.30%
TOTALS:			TOTALS:	112,000	141,100	182,100	

*US Census Bureau

**Estimate developed during 2017 sewer flow study

***Projections do not include potential growth from Southeast Regional Force Main project

****Growth Rate based on projected flows from Table 2

Table 2: Historical and Projected Flows - Muskegon County Resource Recovery Center

Directly Connected User	Historical Annual Average Flows (MGD)						Projected Annual Average Flows (MGD) ¹				
	2005	2010	2015	2020	2021	2022	2025	2030	2035	2040	2045
Bayer Crop Science	0.07	0.16	0.20	0.21	0.11	0.03	0.22	0.23	0.24	0.25	0.26
Camus Water Technologies	1.07	0.87	0.71	0.67	0.58	0.83	0.71	0.71	0.71	0.71	0.71
Cedar Creek Township	0.00	0.03	0.03	0.03	0.03	0.03	0.15	0.21	0.27	0.33	0.39
City of Montague	0.22	0.19	0.21	0.20	0.18	0.17	0.21	0.22	0.22	0.22	0.22
City of Muskegon	4.66	4.37	5.10	5.40	3.98	3.94	5.32	5.43	5.55	5.66	5.77
City of Muskegon Heights	1.16	1.15	0.85	0.87	0.60	0.58	0.72	0.72	0.72	0.72	0.72
City of North Muskegon	0.33	0.29	0.30	0.36	0.27	0.24	0.30	0.30	0.30	0.30	0.30
City of Norton Shores	1.96	1.81	1.78	2.12	1.94	1.95	2.50	3.03	3.56	4.09	4.61
City of Roosevelt Park	0.69	0.54	0.57	0.41	0.35	0.35	0.50	0.50	0.50	0.50	0.50
City of Whitehall	0.66	0.56	0.59	0.70	0.66	0.75	0.77	0.80	0.83	0.86	0.89
Dalton Township	0.00	0.01	0.01	0.02	0.03	0.05	0.15	0.22	0.29	0.36	0.43
Egelston Township	0.35	0.26	0.34	0.88	0.34	0.36	0.42	0.46	0.50	0.54	0.58
Fruitland Township	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.19	0.23	0.28	0.32
Fruitport Township	0.13	0.15	0.16	0.17	0.17	0.17	0.32	0.96	1.60	2.24	2.88
Laketon Township	0.21	0.27	0.33	0.51	0.30	0.27	0.37	0.38	0.40	0.42	0.48
Montague Township ²	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Muskegon Township ³	1.01	1.43	1.33	1.33	0.82	0.93	1.35	1.35	1.36	1.36	1.40
Sappi Fine Paper ⁴	10.22	0.04	--	--	--	--	--	--	--	--	--
Whitehall Township	0.08	0.05	0.05	0.06	0.07	0.10	0.33	0.46	0.60	0.74	0.88
Sub-total:	22.83	12.19	12.57	13.95	10.44	10.77	14.50	16.18	17.88	19.58	21.35

¹Projections from 2017 sewer flow study, with updates for projected growth

²2015 flows for Montague Township were estimated since flows are not metered.

³Estimated 20% to the North Meter and Pump Station A

⁴This industry is no longer contributing flow; as a result, it was not included in future flow projections.

⁵Estimates developed during 2017 sewer flow study.

CITY OF MUSKEGON
PROJECT PLAN FY 2024

Table 3 - Pump Station Capacities

	Pump Station Name	Rated Capacity (gpm)	Drawdown Testing**	
			Pump #1 (gpm)	Pump #2 (gpm)
Lift Stations	Apple	950	1,005	1,130
	Barney	350	265	220
	Evanston	870	1,025	985
	Forest	450	410	415
	Getty	750	725	665
	Industrial	800	705	725
	Austin	950	1,035	960
	Edgewater	200	235	195
	Harbor Towne	280	245	250
	Fisherman's Village	100	65	65
	Beach	700	770	770
	Black Creek	175	170	145
	Prison*	200	295	305
	Sherman	550	510	505
	Access Highway	140	Not performed	Not performed
	Beidler	830	Not performed	Not performed
Grinder Stations	Coast Guard*	Unknown	Not performed	None
	Hartshorn*	Unknown	Not performed	None
	Smith Ryerson I*	Unknown	Not performed	None
	Smith Ryerson II*	50	Not performed	Not performed
	2409 Roberts	Unknown	Not performed	None
	1203 Lakeshore	Unknown	Not performed	None
	Fisherman's Landing*	35	Not performed	Not performed
	Henry	12	Not performed	Not performed

*These pump stations are maintained by the City of Muskegon but replacement costs are not funded by the City of Muskegon Sewer Fund

**Drawdown testing was performed on the lift stations in August 2015

Table 5 - Summary of Selected Alternatives

Project #	Year	Project Title	Project Description	Summary of Project Need	CWSRF Eligible Cost Estimate	Total Project Cost Estimate
1.	FY24	Holbrook Avenue - Peck St. to Wood St.	Replace the existing 8-inch to 18-inch trunk sewer with approximately 2,750 feet of 12-inch sewer on Holbrook Ave. from Peck St. to Wood St.	The 1920's era clay sewers were installed below minimum grade. There are also five storm/sanitary conflict manholes that must be replaced to avoid wastewater overflows into the environment.	\$1,992,000	\$2,866,000
2.	FY24	6th Street - Laketon Ave. to Washington Ave.	Deepen and replace approximately 2,850 feet of 8-inch sewer on 6th Street from Laketon Ave. to Washington Ave.	The sewer was installed in the 1920s. Clay sewers of similar vintage within the City have been observed to have been observed to be in poor structural condition in addition to be highly susceptible to root intrusions and joint defects. Furthermore, there are several sewer pipes near the upstream end that were installed below minimum grade. Lastly, there are seven storm mannholes that have old sanitary mains or laterals passing through them. Replacement of the storm and sanitary sewers on 6th Street at different grades will allow for removal of the conflict manholes.	\$2,932,000	\$4,313,000
3.	FY24	7th Street - Laketon Ave. to Washington Ave.	Deepen and replace approximately 2,650 feet of 8-inch sewer on 7th Street from Laketon Ave. to Washington Ave.	Many of the 1920's era clay sewers on 7th Street were installed below minimum grade. Clay sewers of similar vintage within the City have been observed to be in poor structural condition in addition to be highly susceptible to root intrusions and joint defects.	\$2,553,000	\$3,709,000
4.	FY24	Glenside Phase III	Construct 8-inch to 10-inch sewers in the road right-of way for all remaining roads west of Wickham Dr. in the Glenside Neighborhood. Roads include Westwood St., Randolph Ave, Winchester Dr., and Montague Ave. Abandon all redundant alley sewers and reroute all sewer laterals to the road right-of-way.		\$2,747,000	\$5,154,000
	Future	Glenside Phase IV	Construct 10-inch sewer on Cumberland St. from Glen Ave. to the alley sewer between Beardsley Ave. and Randolph Ave. Construct 8-inch sewer on Ridge Ave., Lexington Ave., and Beardsley Ave. from Wickham Dr. to the 10-inch sewer on Cumberland Dr. Abandon all alley sewers between Ridge Ave. and Beardsley Ave. and reroute all sewer laterals to the road right-of-way.	The sewers in the Glenside Neighborhood were installed in the 1930s, the large majority of which are located within unmaintained alleys. Many of the sewers have significant root and flow blockage concerns, in addition to significant structural deficiencies such as fractures, holes, sags, and breaks. However, cleaning and maintaining the sewers is often difficult, if not impossible given the access restrictions. Furthermore, the City does not have access to repair or replace most of these sewers at their current location due to the existence of obstacles above the sewers including fences, retaining walls, garages, trees, decks, and other structures. The sewers must be replaced and rerouted into the roadway where the City can regain accessibility and reduce the risk of sewer backups.	\$2,306,000	\$3,164,000
	Future	Glenside Phase V	Construct remainder of 10-inch sewer on Cumberland St. from the alley to Montague Ave. Construct 8-inch sewers on Randolph Ave., Winchester Dr., and Montague Ave. Abandon all alley sewers within the project area between Montague Ave. and Beardsley Ave. and reroute all sewer laterals to the road right-of-way.		\$5,126,000	\$7,485,000
	Future	Glenside Phase VI	Construct 8-inch sewer on Wickham Dr. between Montague Ave. and Hadden St. Abandon the existing north-south sewers to the east and west of Wickham Dr. and reroute all sewer laterals to the road right-of-way.		\$973,000	\$1,315,000
5.	Future	Wood Street - Holbrook Ave. to Spring St.	Replace approximately 3,630 feet of existing 20-inch to 24-inch sewer with 18-inch sewer on Wood St. from Holbrook Ave. to Spring St.	The existing clay sewer on Wood Street was installed in 1919 and reached the end of its useful life. The sewer is oversized and rather flat, and as a result, the sewer consistently fills up with debris and is an ongoing maintenance problem. It has not been cost effective to inspect the sewer using CCTV due to the excessive amount of debris. Furthermore, flow metering has shown that the sewer district upstream of Wood St. and Spring St. has excessive infiltration and inflow (I/I) concerns, and it is suspected that I/I may be coming from the deeper trunk sewer on Wood Street.	\$4,733,000	\$4,733,000
6.	Future	Catherine Avenue - Irwin Ave. to Wood St.	Deepen and replace approximately 2,600 feet of 8-inch sewer from Irwin Ave. to Wood St.	The existing 8-inch clay sewers on Catherine Ave. west of Spring St. were installed in the 1920s at slopes below minimum grade. The remaining 8-inch clay sewer east of Spring St. was installed in the 1940s. Clay collector sewers of similar vintage within the City have been observed to be in poor structural condition in addition to be highly susceptible to root intrusions and joint defects.	\$2,616,000	\$2,616,000
7.	Future	Jefferson Street - Laketon Ave. to Southern Ave.	Deepen and replace approximately 1,620 feet of 8-inch sewer from Laketon Ave. to Southern Ave.	The storm and sanitary sewers on Southern Ave. were deepened and rerouted to flow toward Sanford St. in 2021 so that the sewers which are flatter than minimum slope on Jefferson St. could be deepened and replaced at appropriate slopes.	\$1,435,000	\$1,435,000
8.	Future	Iona Avenue - Arthur St. to Wood St.	Deepen and replace approximately 950 feet of 8-inch sewer on Iona Ave. from Arthur St. to Terrace St. Replace approximately 1,680 feet of 8-inch sewer from Terrace St. to Sophia St. and approximately 300 feet of 15-inch sewer from Sophia St. to Wood St.	The existing 8-inch to 15-inch sewers on Iona Ave. were installed in the 1920s and have reached the end of their useful life. Furthermore, the 8-inch sewers between Arthur St. and Terrace St. were installed below minimum slope.	\$2,659,000	\$2,659,000
9.	Future	Orchard Avenue - Myrtle Ave. to Getty St.	Deepen and replace the existing oversized 15-inch sewer with 10-inch sewer on Orchard Avenue from Myrtle Ave. to Scott St. Deepen and replace the existing 8-inch sewer from Scott St. to Getty St.	The existing clay sewers on Orchard Ave. were installed in the 1920s and have reached the end of their useful life. Furthermore, the 8-inch sewer was installed below minimum slope. The new 21-inch sewer on Fork Street was deepened in 2021 such that the sewers on Orchard Ave. could be deepened and replaced at appropriate slopes. Additionally, there are two storm manholes with sanitary laterals crossing through them that mus be separated.	\$3,242,000	\$5,152,000
Total FY2024 Cost:					\$10,224,000	\$16,042,000
Total Future Cost:					\$23,090,000	\$28,559,000

Note: The City has also applied for DWSRF funding for water main and water service replacement within all project areas. Drinking water improvement costs are not included in the CWSRF eligible cost estimates shown above.

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Figures

Figure 1: City of Muskegon Wastewater Collection System

Figure 2: Gravity Main Pipe Age and Materials

Figure 3: Forcemain Pipe Age and Materials

Figure 4: Glenside Neighborhood Sewers Conceptual Design

Figure 5: Selected Collection System Improvements

WATCH MUSKEGON

Agenda Item Review Form

Muskegon City Commission

Commission Meeting Date: 4/25/23	Title: Anchor Insurance Parking Lot Lease for City Employee Parking
Submitted By: Jake Eckholm	Department: Development Services
Brief Summary: With the construction of Lofts at 1021 Jefferson, the road diet on Terrace, and potential development at 122 W. Muskegon (McDonald's Lot) there is no longer adequate parking for employees at City Hall without impacting citizen parking areas. Staff has identified a lease option for dedicated employee parking.	
Detailed Summary & Background: Since 2019 it has been anticipated that development and infrastructure changes around City Hall would necessitate a permanent parking amenity for city staff. The previous parking lot on 1021 Jefferson was never widely used due to the mid-block crossing on Apple Avenue to access the building. After that was constructed, most staff have parked on the diagonal spaces installed on Terrace or in the closed down McDonald's parking lot across the street. These options are no longer sustainable either, as Terrace parking is being reoriented with the road diet and our team is actively working on redevelopment options at the McDonald's site. Additionally, our insurance company has requested that we procure dedicated employee parking that we have site control over to reduce liability. For about 18 months staff worked to negotiate a long-term lease for parking at the St. Mary's Catholic Church parking lot on Webster, and unfortunately both the church and the city could not get the Archdiocese in Grand Rapids to be particularly responsive to the concept. This arrangement would have been predicated on the city improving the parking lot substantially up front and then having a nominal lease payment moving forward. As we experienced difficulty dealing with the Archdiocese, we reached out to the owner of Anchor Insurance who has relocated into the former Fifth Third bank building at 877 Terrace. Mr. Jim Mines has already completely rehabbed the parking lot with resurfacing, lighting, striping, and landscaping so we would have a higher annual lease payment, but no capital project on the front end. Our annual payment will be \$25,000 for the first five years for 52 spaces which equates to \$1.32 per space/day. This is a competitive price for commercial leases for employee parking we have found in other markets, both for covered and uncovered lots. After the fifth year, annual rent inflation would be tied to the CPI with a cap of no more than 8% each year.	
Goal/Focus Area/Action Item Addressed: N/A	

Amount Requested: Lease value of \$25,000 per year, escalated after year 5	Amount Budgeted: N/A
Fund(s) or Account(s): 101, multiple departments	Fund(s) or Account(s): N/A
Recommended Motion: Motion to approve the lease for city parking at 877 Terrace Street and authorize the mayor and clerk to sign.	
Approvals: Immediate Division Head ☒ Information Technology ☐ Other Division Heads ☒ Communication ☐ Legal Review ☒	Guest(s) Invited / Presenting: Yes ☒ No ☐
For City Clerk Use Only: Commission Action:	

PARKING LOT LEASE AGREEMENT

This Parking Lot Lease Agreement (“**Agreement**”) is made on this _____ day of _____, 2023, by and between the City of Muskegon, a Michigan municipality (the “**City**”), and Jim Mines Real Estate Development, L.L.C., a Michigan limited liability company (“**Mines Development**”) (collectively referred to as the “**Parties**”).

WHEREAS, Mines Development owns 877 Terrace Street, Muskegon, Michigan, which includes a 70-space parking lot.

WHEREAS, Mines Development is willing to lease 52 parking spaces to City for City’s employees exclusive use and retain exclusive use of any remaining parking spaces, as more particularly shown on the attached **Exhibit A** (the “**Premises**”) under the terms of this Agreement.

NOW THEREFORE, the Parties do hereby agree as follows:

1. **City Undertakings.** The City hereby agrees to:
 - a. Lease of 52 parking spaces for City’s employee use, as shown on Exhibit A, and remaining parking spaces will be retained by Mines Development for the exclusive use of Anchor Insurance, the tenant of a building located on the Premises.
 - b. City may, in its sole discretion and at its sole expense, install additional signage on the Premises that designates the 52 leased parking spaces as being exclusive in use, in accordance with the terms of this Agreement. City may also purchase and install a kiosk or other operated parking control system capable of limiting access to the 52 parking spaces leased by the City, in accordance with the terms of this Agreement.
 - c. City shall plow the entire Premises as needed in the sole discretion of the City.
11. **Mines Development Undertakings.** Mines Development may, in its sole discretion and at its sole expense, install additional signage on the Premises that designates the parking spaces for the exclusive use of Anchor Insurance. Mines Development may also purchase and install a kiosk or other operated parking control system capable of limiting access to the parking spaces for Anchor Insurance’s exclusive use, in accordance with the terms of this Agreement.
111. **Term.** The term of this Agreement shall be for approximately 10 years, commencing as soon as this Agreement is executed by the Parties and ending on December 31, 2033.

4. **Rent and Property Taxes.** City shall pay an annual rent of \$25,000 per year, payable on January 1, 2024 and the first of each calendar year thereafter. Said rent to be paid in advance. Within 30 days of execution of this agree, City shall pay rent in the amount of \$68.49 per day from the date of execution through December 31, 2023, inclusive in a lump sum to Mines Development. Mines Development will pay all property taxes on the Premises, which includes the parking lot and the building leased by Anchor Insurance.
5. **Inflation of Rental Rate.** Beginning with the lease payment due on January 1, 2028, City payment shall increase by the previous year's rate of inflation according to the U.S. Bureau of Labor Statistics Consumer Price Index, not to exceed an 8% increase in any given year.
6. **Maintenance, Repair and Alterations.** During the Term, Mines Development is responsible for all decoration, utility, landscaping, maintenance, repair and replacement costs of the Premises and all improvements.
7. **Insurance.** Both Parties shall acquire insurance coverage and name the other as an additional assured. Each Party shall provide the other with proof of insurance in December of each year.
8. **Estoppel Certificates.** Either party shall, upon request of the other, deliver an estoppel certificate to lender, bond holder or other identified interested party which acknowledges the existence or non-existence of any uncured defaults, the number of years which remain in this Agreement, and the amount of rent or other expenses currently payable.
9. **Notices.** Whenever this Agreement requires any notice of any kind, it shall be in writing and delivered personally or by registered or certified mail, postage prepaid, and addressed to the Parties at their respective addresses, with notice to the City being delivered or directed to the City Clerk. Either party may change their address by like notice to the other party. Notice shall be effective upon receipt, if personally delivered, or one (1) business day after mailing, if mailed.
10. **Interpretation.** This Agreement shall bind and benefit the Parties and their respective successors and assigns. This Agreement shall be governed by and interpreted in accordance with the laws of the State of Michigan. Nothing contained in this Agreement shall be deemed or construed by the Parties, nor by any third parties, as creating the relationship of principal and agent or of partnership or of a joint venture between the Parties. Whenever the Parties are required or authorized in this Agreement to exercise discretion or grant approval, the City and Mines Development shall do so in a reasonable manner, without unreasonable delay or condition.
11. **Entire Agreement; Amendments.** This Agreement contains the entire understanding of the Parties with respect to the subject matter of this Agreement and supersedes all prior and

contemporaneous understandings of the Parties (both written and oral) with respect to the subject matter of this Agreement. No amendment of this Agreement shall be effective unless the same is in writing and signed by the Parties, their successors or assigns.

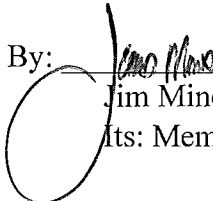
12. **Partial Invalidity.** If any term, covenant or condition of this Agreement or its application to any person or circumstances shall, to any extent, be invalid or unenforceable, the remainder of this agreement, or the application of such term, covenant or condition to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected by such invalidity or unenforceability.
13. **Assignment.** Neither Party may, without written permission from the other Party, assign or in any manner transfer its obligations under this Agreement, which shall not be unreasonably conditioned, delayed or withheld.

The Parties have executed this Agreement on the date first identified above.

City of Muskegon, a Michigan municipality

Jim Mines Real Estate Development, L.L.C.

By: _____
Ken Johnson
Its: Mayor

By:  _____
Jim Mines
Its: Member

By: _____
Ann Marie Meisch
Its: Clerk

EXHIBIT A
LEASED PREMISES

