ATTACHMENTS

PARCEL NO.:

Office Use Only

DATE SUBMITTED:

REVIEW DATE:

CITY OF SHEBOYGAN
ARCHITECTURAL REVIEW APPLICATION

Revised July 2021

FEE $100.00

Completed application must be filed with the Department of City Development, 828 Center Avenue, Suite 208. To be placed on the agenda of the Architectural Review Board, application **must be filed three weeks prior** to date of meeting. Applications that are not complete or that are not legible will not be accepted.

1. APPLICANT INFORMATION

APPLICANT: Sarah Sutherlin

ADDRESS: 125 S. Wacker Dr., Chicago, IL 60606

E-MAIL ADDRESS: sutherlins@cdmsmith.com

PHONE: (312) 780-7738 FAX NO.: (n/a)

2. DESCRIPTION OF THE SUBJECT SITE/PROPOSED PROJECT

NAME OF PROPOSED/EXISTING BUSINESS: Sheboygan Water Utility

ADDRESS OF PROPERTY AFFECTED: 72 Park Avenue, Sheboygan WI 53081

NEW BUIILDING: X ADDITION: REMODELING:

DESCRIPTION OF PROPOSED PROJECT:
New raw water intake from Lake Michigan and brick masonry pump station with site improvements including pavement and architectural security fencing.

DESCRIPTION OF **EXISTING** EXTERIOR DESIGN AND MATERIALS:
Existing water treatment plant buildings have brick exterior facades with limestone accents. There is a mix of flat, peaked shingle, and peaked metal roofs. Most buildings on site repeat features such as the brick and limestone headers from the original 1920s filter plant.

DESCRIPTION OF THE **PROPOSED** EXTERIOR DESIGN AND MATERIALS:
Proposed new building will have a brick facade with limestone accents and a peaked metal roof with colors/materials to match original filter plant. Proposed fence between plant and park matches existing decorative architectural fencing.

3. NAMES AND ADDRESSES

OWNER OF SITE: Sheboygan Water Utility. Contact: Joe Trueblood

ADDRESS: 72 Park Avenue, Sheboygan WI 53081

EMAIL: joetrueblood@sheboyganwater.org

PHONE: (920) 459-3805 FAX NO.: (n/a)

ARCHITECT: CDM Smith: Lee Lohman

ADDRESS: 125 S. Wacker Dr., Suite 700. Chicago IL 60606

EMAIL ADDRESS: LohmanLA@cdmsmith.com

PHONE: (312) 780-7738 FAX NO.: (n/a)

CONTRACTOR: n/a

ADDRESS: n/a

EMAIL: n/a

PHONE: (n/a) FAX NO.: (n/a)

4. **APPLICATION SUBMITTAL REQUIREMENTS**

A. A scale drawing of all exterior elevations showing the design and appearance of the proposed building or structure.

B. Three 11 X 17 colored renderings of the proposed building elevations and material samples.

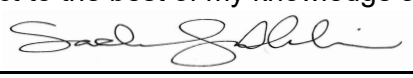
C. A .pdf file of all drawings either by email or CD

D. A scale drawing of the site plan showing the relationship of the building to the site and adjacent properties.

E. A written description of the proposed general design, arrangement, texture, material and color of the building or structure. Describe the relationship of such factors to similar features of buildings located within the same block or located along the frontage or any block across the street from the proposed building or structure for which architectural approval is sought.

5. **CERTIFICATE**

I hereby certify that all the above statements and attachments submitted hereto are true and correct to the best of my knowledge and belief.



APPLICANT'S SIGNATURE

10.18.2021
DATE

Sarah Sutherlin
PRINT ABOVE NAME

OFFICE USE ONLY

Memorandum

To: *Steve Sokolowski, City of Sheboygan Department of Planning and Development*

From: *Sarah Sutherlin, CDM Smith on behalf of Sheboygan Water Utility*

Date: *11.02.2021*

Subject: *Sheboygan Raw Water Improvements Project – Written Explanation*

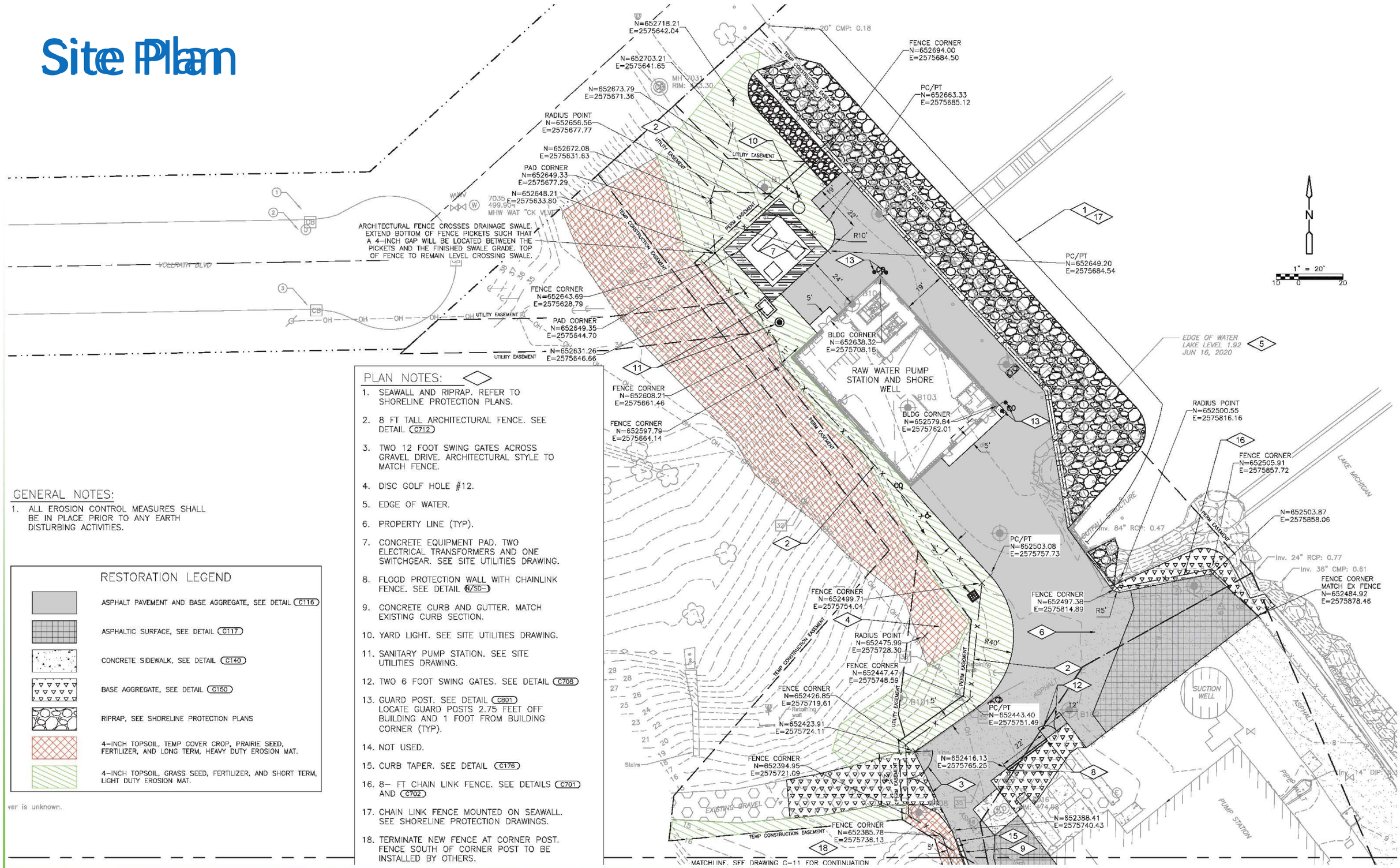
The Sheboygan Raw Water Improvements Project includes a new raw water intake, pump station and associated yard piping, and shoreline protection improvements. The proposed location for this new structure is on an existing easement from Vollrath Park; it will not cross property lines as the Utility has secured this easement in advance. The proposed land use is an extension of the existing adjacent water treatment plant. This new facility will ensure reliability of clean drinking water serving the City of Sheboygan for decades into the future by replacing an existing shorewell built in 1887 and providing redundancy for water intake and electrical infrastructure on site.

The pump station is proposed to be located on existing flat land adjacent to the lake and north of the existing plant. This location allows the shorewell to reach the required depth for the new water intake while maintaining the floor of the structure at 2' above the regional flood elevation. The building has been placed as far away from the lake as possible within the easement to mitigate lake effects and minimize impact on the adjacent park. The requested setback is 41.7'. The intake will originate on the coast of Lake Michigan and terminate 5,500 to 7,000 linear feet into the lake. The shoreline protection improvements will span approximately 250 linear feet along the coast.

Other site improvements include pavement, landscaping and fencing. The proposed fencing is an 8' tall black ornamental metal picket type fence that matches existing railings on site. Along the lakeshore, a variance to use a 8' tall chain link fence is requested, which is in keeping with the existing fencing along the lake. The proposed landscaping is to be coordinated with the adjacent disc golf improvements. The plans include removal of trees and brush on the slope adjacent to the new facility and reseeding of the area to stabilize the slope. A variance is requested from landscaping ordinance in order to integrate landscaping requirements of the adjacent disc golf course project once that project reaches a level of development sufficient to coordinate improvements. The proposed paved drive to access the facility has been coordinated with City of Sheboygan fire department for fire truck access. New metal enclosed switchgear and padmount transformers, will be placed north of the new structure. A sanitary lift station serving the building will also be located north of the building, with underground equipment and only a concrete pad visible from above. Existing materials stored outdoors will be removed.

The proposed building has a floor area of 3900 SF and an overall height of 31’-3”. It is designed to blend in with the existing water treatment plant facilities. The existing buildings on site have brick masonry facades with limestone accents. Most repeat features such as limestone headers and glass block windows from the 1920s filter plant. The proposed new building will have a brick façade with limestone accents and glass block windows to match these existing features. It will also have a peaked standing seam roof which has been selected to match the color of the existing metal roofs. Care has been taken to minimize impact on the adjacent parkland using cutoff light fixtures and acoustic louvers.

Site Plan



PLAN NOTES:

1. SEAWALL AND RIPRAP. REFER TO SHORELINE PROTECTION PLANS.
2. 8 FT TALL ARCHITECTURAL FENCE. SEE DETAIL C712
3. TWO 12 FOOT SWING GATES ACROSS GRAVEL DRIVE. ARCHITECTURAL STYLE TO MATCH FENCE.
4. DISC GOLF HOLE #12.
5. EDGE OF WATER.
6. PROPERTY LINE (TYP).
7. CONCRETE EQUIPMENT PAD. TWO ELECTRICAL TRANSFORMERS AND ONE SWITCHGEAR. SEE SITE UTILITIES DRAWING.
8. FLOOD PROTECTION WALL WITH CHAINLINK FENCE. SEE DETAIL 4/S5
9. CONCRETE CURB AND GUTTER. MATCH EXISTING CURB SECTION.
10. YARD LIGHT. SEE SITE UTILITIES DRAWING.
11. SANITARY PUMP STATION. SEE SITE UTILITIES DRAWING.
12. TWO 6 FOOT SWING GATES. SEE DETAIL C708
13. GUARD POST. SEE DETAIL C801 LOCATE GUARD POSTS 2.75 FEET OFF BUILDING AND 1 FOOT FROM BUILDING CORNER (TYP).
14. NOT USED.
15. CURB TAPER. SEE DETAIL C176
16. 8- FT CHAIN LINK FENCE. SEE DETAILS C701 AND C702
17. CHAIN LINK FENCE MOUNTED ON SEAWALL. SEE SHORELINE PROTECTION DRAWINGS.
18. TERMINATE NEW FENCE AT CORNER POST. FENCE SOUTH OF CORNER POST TO BE INSTALLED BY OTHERS.

GENERAL NOTES:

1. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO ANY EARTH DISTURBING ACTIVITIES.

RESTORATION LEGEND

- ASPHALT PAVEMENT AND BASE AGGREGATE, SEE DETAIL C116
- ASPHALTIC SURFACE, SEE DETAIL C117
- CONCRETE SIDEWALK, SEE DETAIL C140
- BASE AGGREGATE, SEE DETAIL C150
- RIPRAP, SEE SHORELINE PROTECTION PLANS
- 4-INCH TOPSOIL, TEMP COVER CROP, PRAIRIE SEED, FERTILIZER, AND LONG TERM, HEAVY DUTY EROSION MAT.
- 4-INCH TOPSOIL, GRASS SEED, FERTILIZER, AND SHORT TERM, LIGHT DUTY EROSION MAT.

ver is unknown.

Elevations

EAST ELEVATION

1/16" = 1'-0"

NORTH ELEVATION

1/16" = 1'-0"

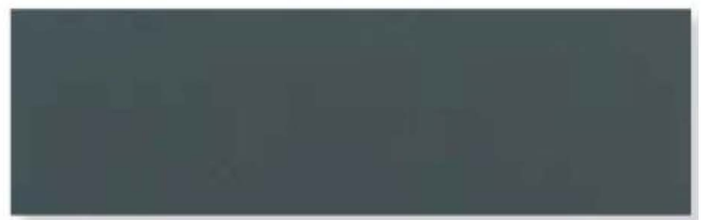
WEST ELEVATION

1/16" = 1'-0"

SOUTH ELEVATION

1/16" = 1'-0"

Materials



<u>Basis-of-Design Materials</u>

Brick (top left): Bowerston '#1545 Blush Buff Flash Ver-tex'

Cast Stone (top center): Custom Stoneworks 'Limestone'

Glass Block (top right): Seves 'Cross-Ribbed'

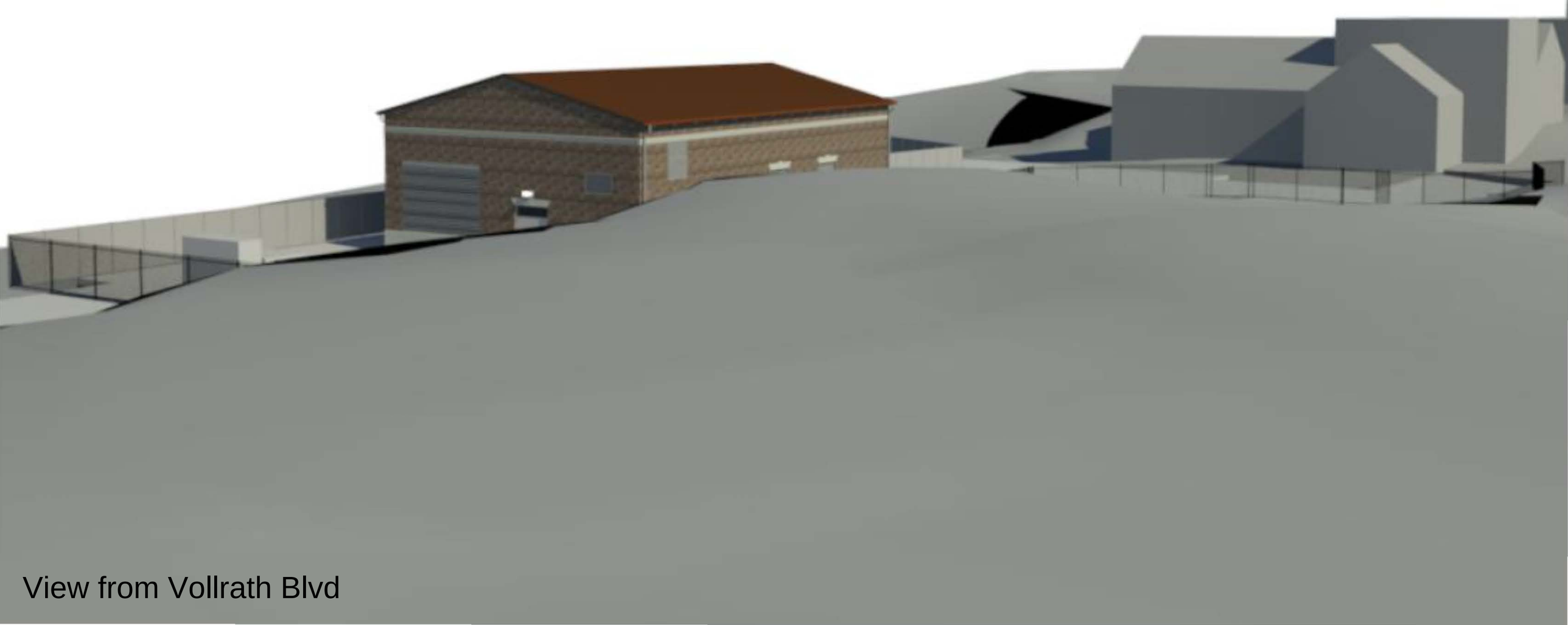
Metal Roof (top left highlighted): Pac-Clad 'Terra Cotta'

Louvers (bottom right): Greenheck 'Charcoal AL214'

Doors: To match louver color

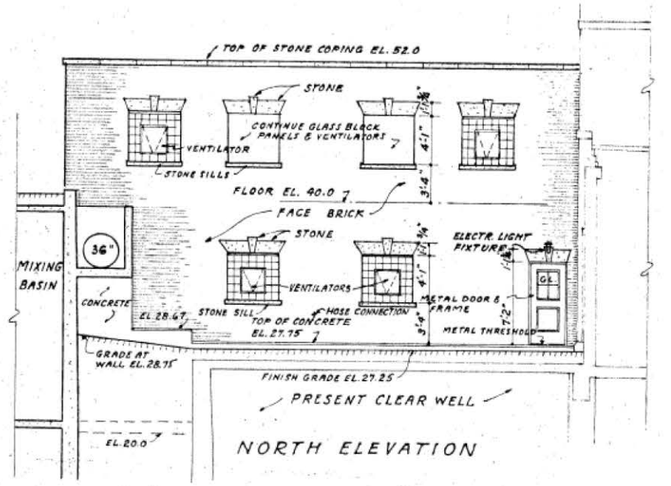
View 1

Aerial view of existing water plant



View from Vollrath Blvd

View 2



ELEVATIONS OF CHEMICAL BUILDING

SCALE: 1/8"=1'-0"

PRESENT BUILDING

View from Vollrath Park

View 3

Typical existing materials

View from existing water plant

View 4

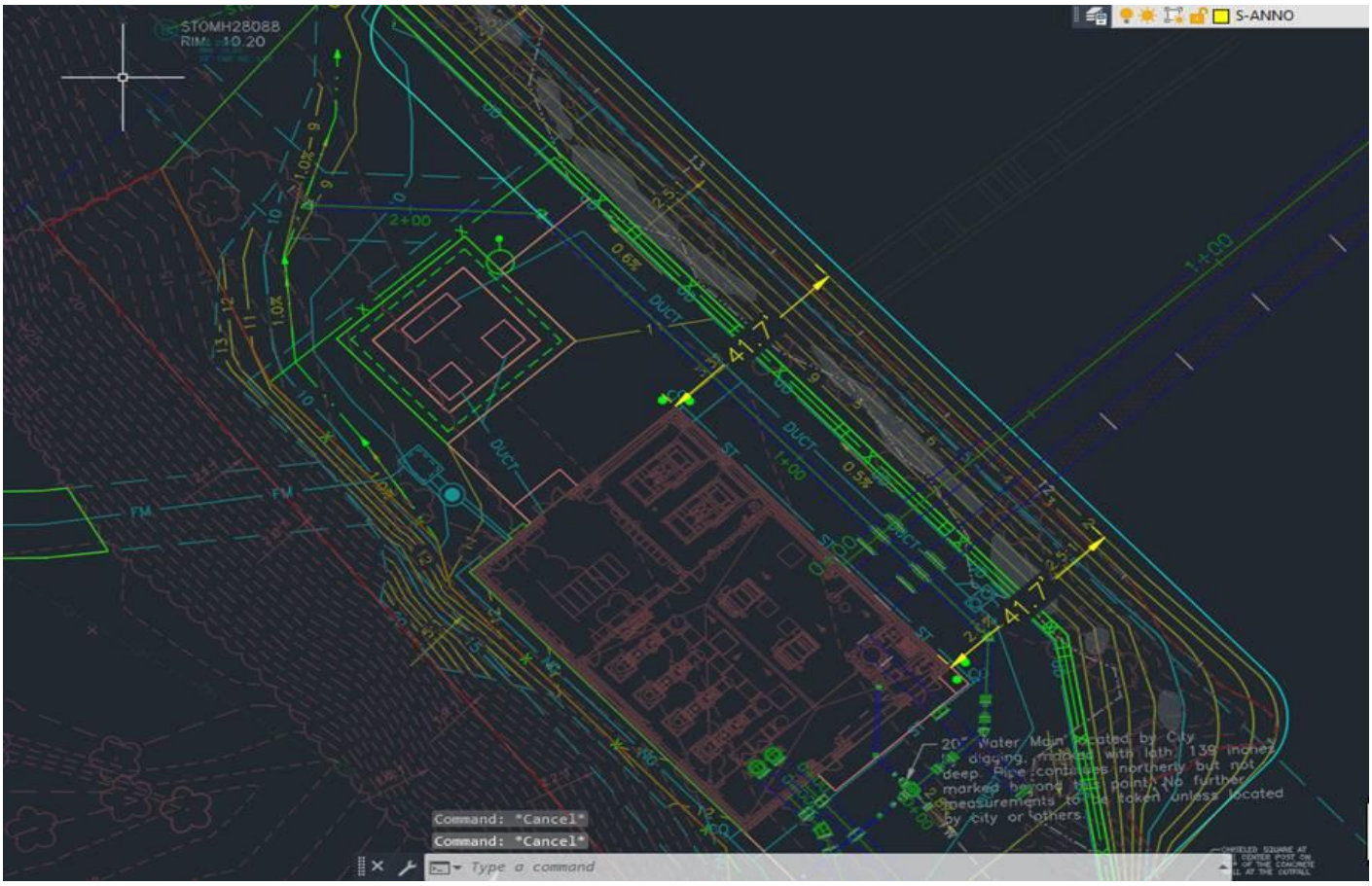
Existing filter plant building

View from Lake Michigan

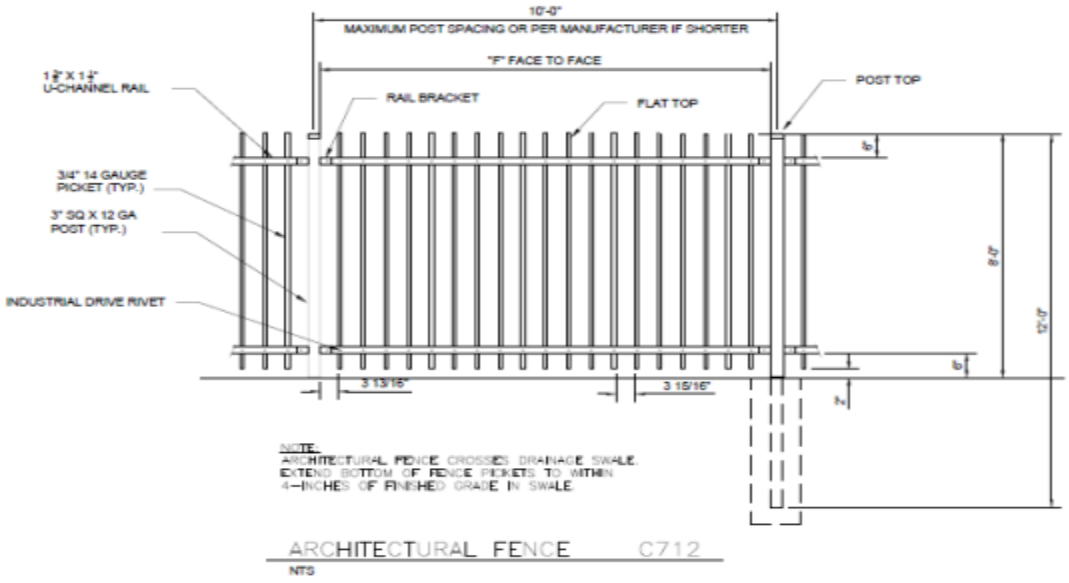
View 5

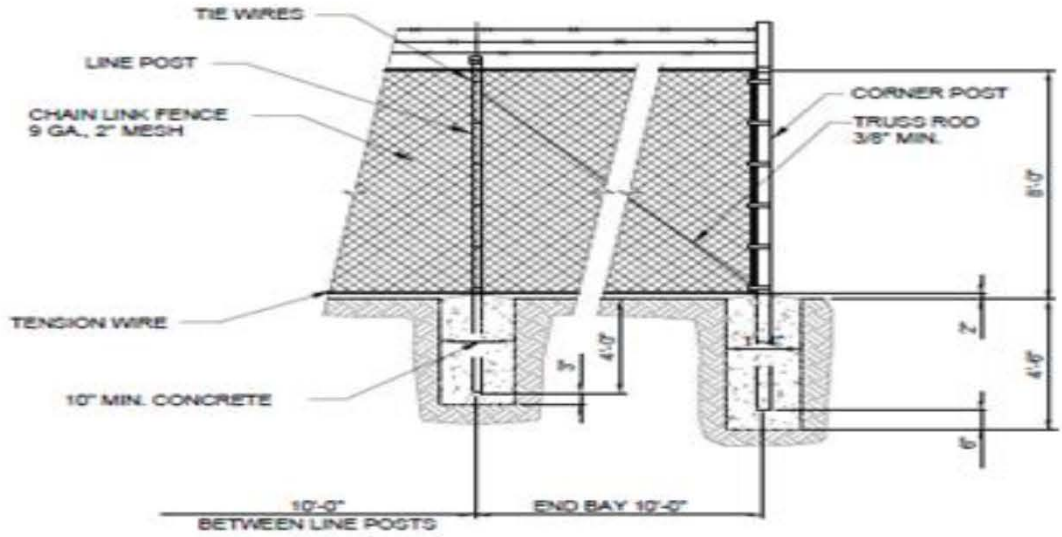
View from the North

What is the actual setback to the ordinary highwater mark so we can request the exact setback exception? Requested setback is 41.7'.



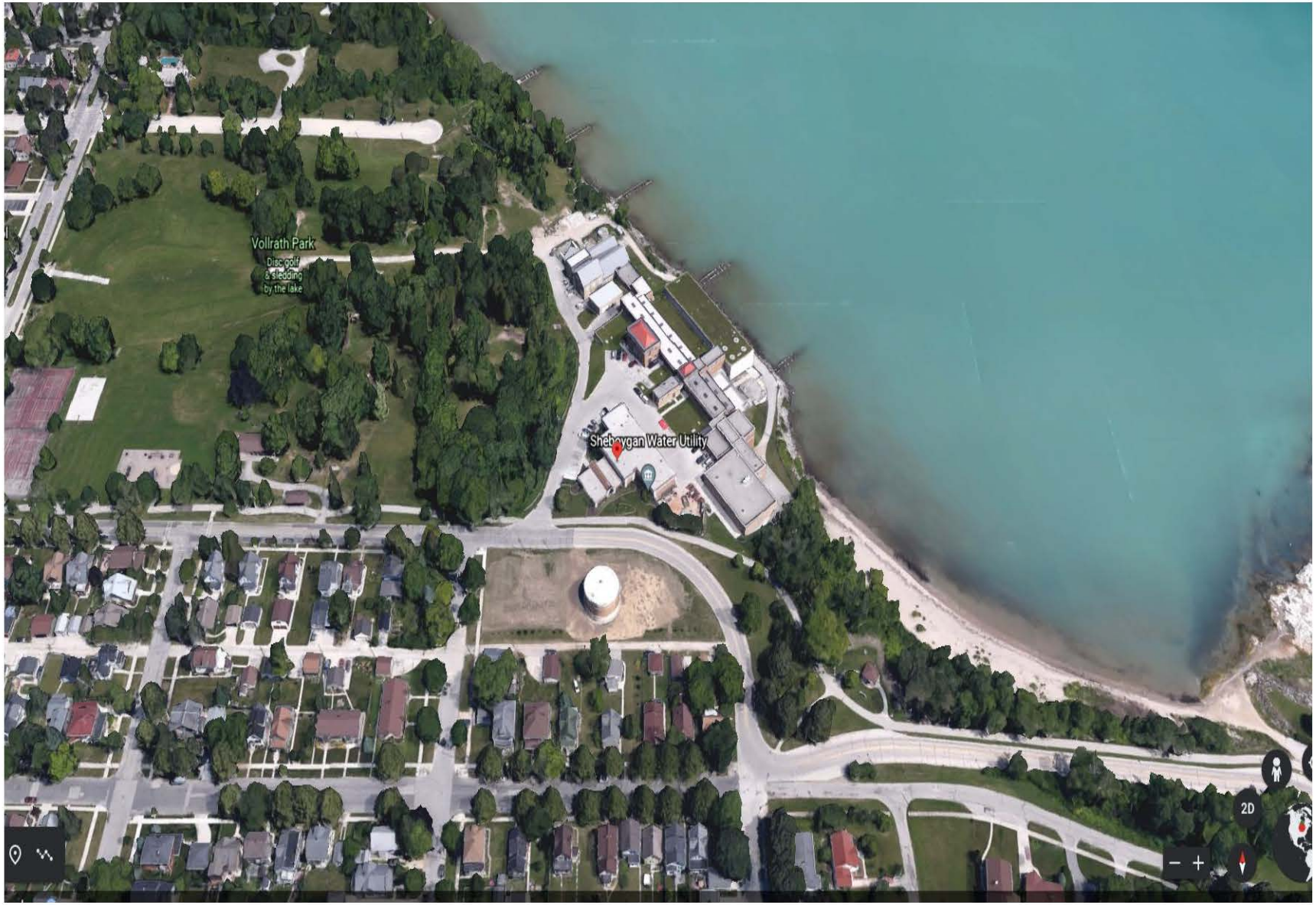
Is the variance for the fence with regards to material and height? What is the height of the proposed fence? The variance requested is for the use of chainlink fence along the lakeshore. Architectural fence is a painted metal picket type fence. Both fence types are 8' tall. I've included snapshots below for each of the proposed designs.





CHAIN LINK FENCE CORNER WITH BARBED WIRE C702

NTS


Vollrath Park
Disc golf
& sledding
by the lake
Sheboygan Water Utility
2D

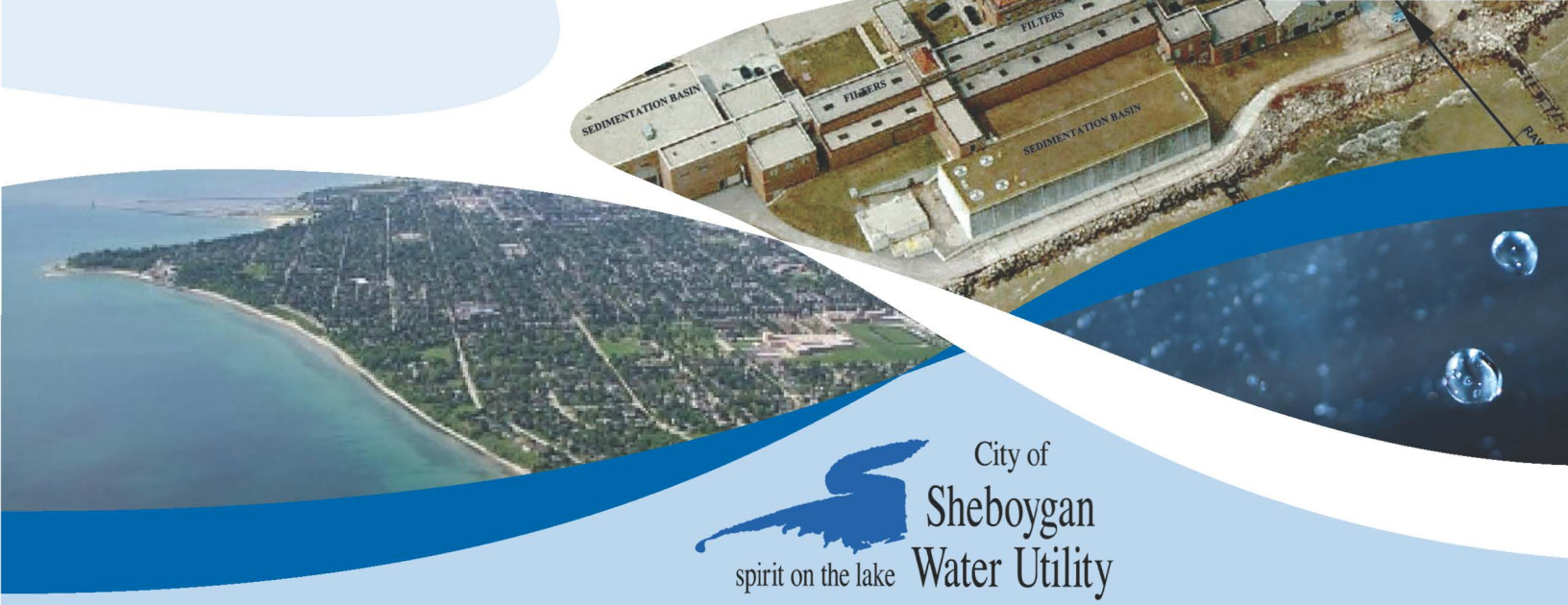

Sheboygan Water Utility
Vollrath Park
Disc golf
& sledding
by the lake
2D


2D


Vollrath Park
Disc golf
& sledding
by the lake
2D


2D


2D

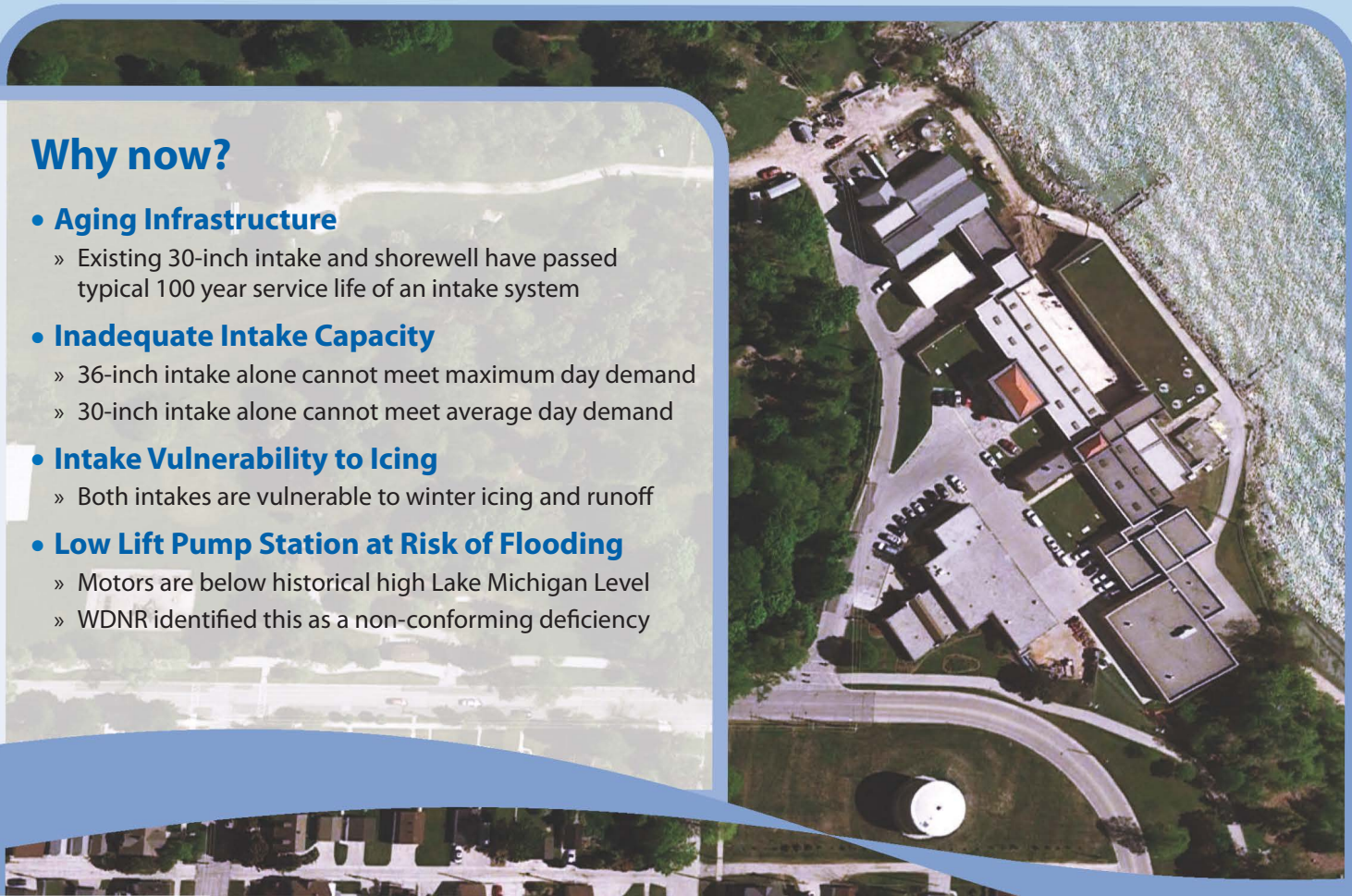


City of Sheboygan
spirit on the lake Water Utility

Replacing Critical Infrastructure:

A New Intake Pipeline System, Shore well, and Low Lift Pumping Station for Sheboygan

The Sheboygan Water Utility has been planning to replace critical raw water infrastructure for many years. This includes all of the systems needed to acquire water from Lake Michigan and then send it through the water treatment plant. These critical systems provide water to all citizens of Sheboygan, Sheboygan Falls, and Kohler. Preliminary engineering design work will begin in 2020. Construction work will begin as early as 2022. This will be the Utility's largest project since 1959. Funding is anticipated to come from Safe Drinking Water loans and/or revenue bonds. Ongoing water rate increases will be needed to pay for the project.

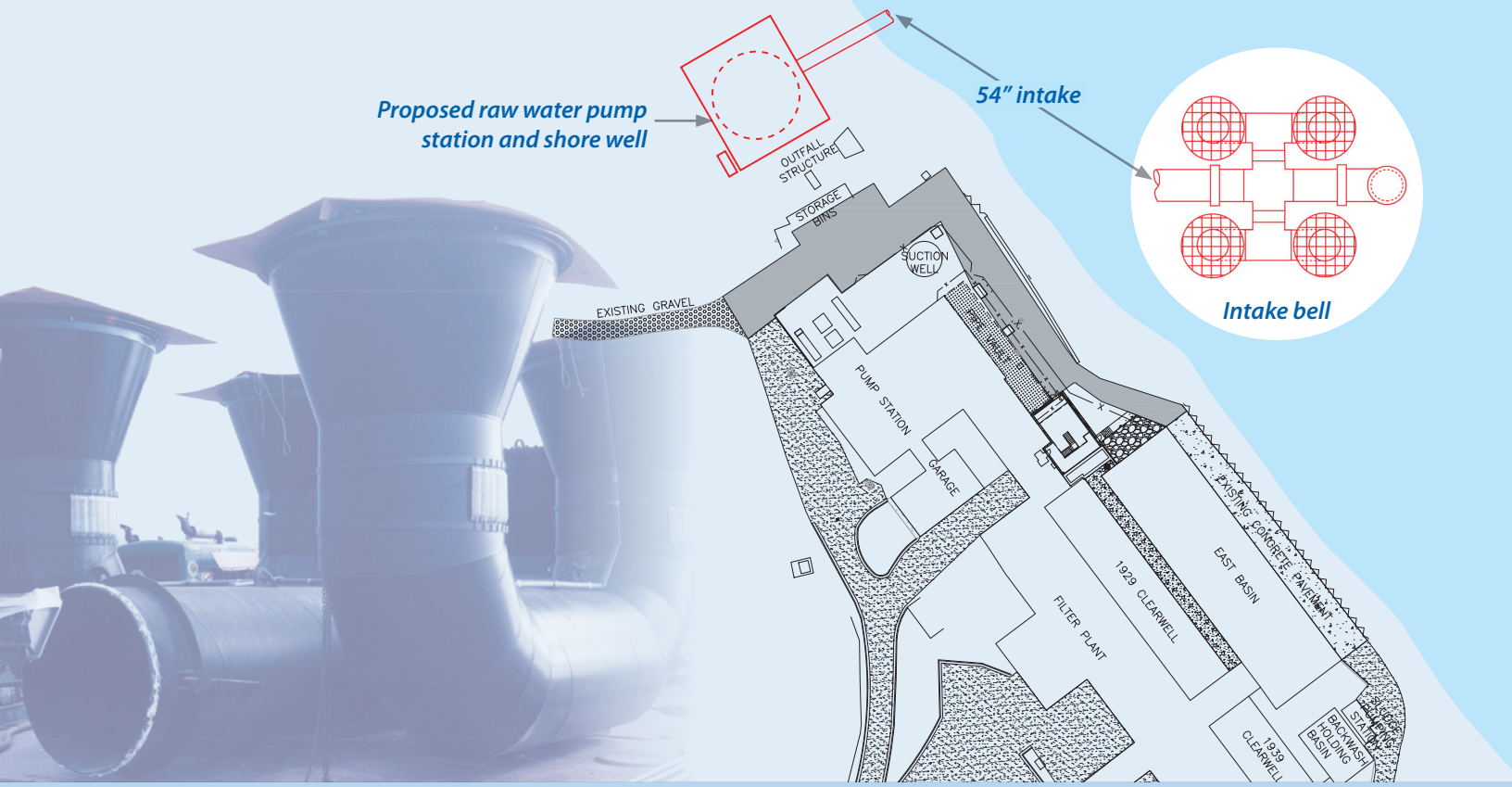


Why now?

- **Aging Infrastructure**
  - » Existing 30-inch intake and shorewell have passed typical 100 year service life of an intake system
- **Inadequate Intake Capacity**
  - » 36-inch intake alone cannot meet maximum day demand
  - » 30-inch intake alone cannot meet average day demand
- **Intake Vulnerability to Icing**
  - » Both intakes are vulnerable to winter icing and runoff
- **Low Lift Pump Station at Risk of Flooding**
  - » Motors are below historical high Lake Michigan Level
  - » WDNR identified this as a non-conforming deficiency

Project Schedule

- **Kickoff of Preliminary Design** — February 2020
- **Completion of Preliminary Design** — August 2020
- **Completion of Detailed Design** — June 2021
- **Completion of Permitting and Bidding** — March 2022
- **Completion of Construction** — September 2024



City of Sheboygan Water Utility
spirit on the lake

Regulated by the WI Public Service Commission and WI Department of Natural Resources, the Sheboygan Water Utility is dedicated to providing the safest possible water to our customers at the most economical price. The Water Utility receives no tax monies but operates entirely on its water revenues.

Project Partners

Wisconsin Dept. of Natural Resources
PSC of Wisconsin
US Army Corps of Engineers.
CDM Smith
DONOHUE

sheboyganwater.org

For More Information

For updated project info, please see
Sheboyganwater.org/intakeproject/updates

Joe Trueblood, P.E.
Superintendent of Sheboygan Water Utility
joetrueblood@sheboyganwater.org
(920) 459-3800
72 Park Ave., Sheboygan, WI 53081

Replacing Critical Infrastructure: A New Intake Pipeline System, Shore Well, and Low Lift Pumping Station for Sheboygan

MARCH 17, 2020 BY MAYOR'S OFFICE

Water treatment plants and water distribution systems contain many pieces of critical infrastructure necessary for modern life. Although designed with a 100-year lifetime, this infrastructure eventually needs replacement. In fact, water and sewer systems often have the most long-lived assets in a municipality.

Since 1888, water has been pumped from 72 Park Avenue to supply the needs of the community. Not long after 1888, a well was dug by hand to bedrock near the lakeshore, and a 20” intake pipeline was constructed about 2,000 feet out into Lake Michigan. This pipe terminated in the well below the ground level. Pumps then drew lake water out of the well.

Currently the Sheboygan Water Utility operates and maintains two intake pipelines including a 30” pipe installed in 1909 and a 36” pipe installed in 1959. Every drop of water for Sheboygan, Sheboygan Falls, and Kohler passes through one of these pipes and then into the shore well. Over the years, the Water Utility made upgrades to the shore well, but the core structure is more than 100 years old.

When raw (untreated) lake water reaches the shore well, pumps must then add enough energy to lift the water through the treatment process itself. These pumps make up the low lift pumping station. After the water completes its journey through the treatment process, a high lift pumping station then gives it enough energy to travel throughout the water distribution system in the city.

For many years, the Water Utility has been developing plans for the replacement of its intake pipeline system, shore well, and low lift pumping station. The 30” 1909 intake pipeline has surpassed its normal working lifetime, and is too small to provide an average water demand on its own. The 36” 1959 intake pipeline has about 40 years of working lifetime left, but, due to a short length of only 2,100 feet, it remains subject to icing and river runoff events.

Although inspections have shown it to be in good repair, the shore well has surpassed a normal working lifetime. If it collapsed or experienced some other failure, water supply would become difficult, if not impossible, to maintain.

These three components: intake pipeline, shore well, and low lift pumping station operate in conjunction with each other. If one link is broken, the remaining elements fall apart.

The Sheboygan Water Utility is poised to replace these pieces of critical infrastructure in the next few years. Working with consulting engineers, the Water Utility has evaluated the feasibility of various ways to complete the replacements. During construction of replacements, the current systems must remain fully operational. Space is extremely limited at the Water Utility, unless expansion into the Vollrath Park area occurs. And the project financing must be spread over time to avoid large rate increases.

The new raw water facility will incorporate an intake pipeline, shore well, and low lift pumping station in a building located on vacant land north of the water treatment plant. Although this will displace a disc golf hole, the course can be routed around the new structure. This location will allow construction of the new facility without impacting the existing water treatment plant. Due to its location detached from the plant, the new facility could also be used in the future to pump raw water to a water treatment plant located elsewhere.

Preliminary engineering design is underway. Many details remain unresolved. The Water Utility has initiated communications with its regulatory agencies — the Public Service Commission of Wisconsin (PSC) and the Wisconsin Department of Natural Resources (DNR) — to help ensure a good project outcome. The PSC will ensure that expenditures are reasonable and suitable. The DNR will ensure that water treatment meets all requirements in an efficient manner, allowing easy expansion in the future.

Although the project will be costly, critical water infrastructure is an investment in ongoing and future reliability in the supply of safe drinking water to the community. Depending on final configurations, the best current cost estimates range from $30M to $40M. The Sheboygan Water Utility will seek long term financing of either 30-year or 40-year water revenue loans in order to spread the cost over a portion of the new infrastructure's lifetime. The high cost stems from expensive underwater construction, thousands of feet of large piping, underwater crib structures to anchor the pipeline, deep shoreline excavation, electrical supply and instrumentation controls, a new building with mechanicals, and lakeshore construction to withstand severe weather and wave conditions.

The Sheboygan Water Utility remains committed to providing the community with a reliable, economical, and safe source of drinking water. The Water Utility operates entirely on water revenues, and this project will have no impact on property taxes or any fees other than water rates. Project updates, including cost information, will be routinely posted at sheboyganwater.org/intake project/updates.

RAW WATER IMPROVEMENTS (RWI) PROJECT:
Replacing **critical infrastructure** to ensure a safe supply of water for the future

Joe R. Trueblood, P.E.

Superintendent

Sheboygan Water Utility

Water Utility plant *and grounds circa 1935*

City of Sheboygan Water Utility
spirit on the lake

What is the Sheboygan Water Utility (SWU)?

- ✓ A public utility providing drinking water to Sheboygan since 1909
- ✓ Regulated by WI PSC, WI DNR, and US EPA
- ✓ Operates entirely on water revenues, not on tax monies or City general fund
- ✓ Governed by the Sheboygan Board of Water Commissioners
- ✓ Customers include all City residents, City of Sheboygan Falls, and Village of Kohler

City of Sheboygan
spirit on the lake Water Utility

There are four steps involved in providing water.

1) Secure a source of raw or untreated water (Lake Michigan)

2) Pump the raw water through a water treatment process to make it safe (water treatment plant at 72 Park Ave)

3) Pump the treated water through a water distribution network to citizens (~207 miles of water mains, water towers, pressure booster stations)

4) Provide accurate metering, billing, and customer services

Water Utility plant and grounds 2020

City of Sheboygan
spirit on the lake Water Utility

SWU uses two raw water pipelines in Lake Michigan

- ✓ A 30" cast iron pipeline installed in 1909 at a length of 5,100 feet and depth of 46 feet
- ✓ A 36" concrete pipeline installed in 1959 at a length of 2,100 feet and depth of 25 feet
- ✓ The 30" can produce 11 million gallons per day (MGD)
- ✓ The 36" can produce 24 MGD
- ✓ Pipelines in Lake Michigan have a normal working lifetime of 100 years
- ✓ SWU produces an average of 12 MGD

City of Sheboygan
spirit on the lake Water Utility

The raw water pipelines deliver water to an underground structure known as a shore well.

- ✓ The shore well is a reservoir for pumps to deliver water to the water treatment plant
- ✓ The shore well dates to its original excavation in 1887
- ✓ Changes have been made over the years including structural evaluations
- ✓ Though serviceable, the shore well has exceeded its normal working lifetime.

City of Sheboygan
spirit on the lake Water Utility

So what are the problems?

- ✓ The 30" intake and the shore well have exceeded normal working lifetime.
- ✓ If the 36" intake fails, the 30" cannot meet average daily demand.
- ✓ Both intake pipelines are subject to winter icing.
- ✓ The 36" intake is a substandard distance off-shore.
- ✓ WDNR has noted the low lift pumps are at or below Lake levels.
- ✓ There are no neighboring water utilities large enough for backup.

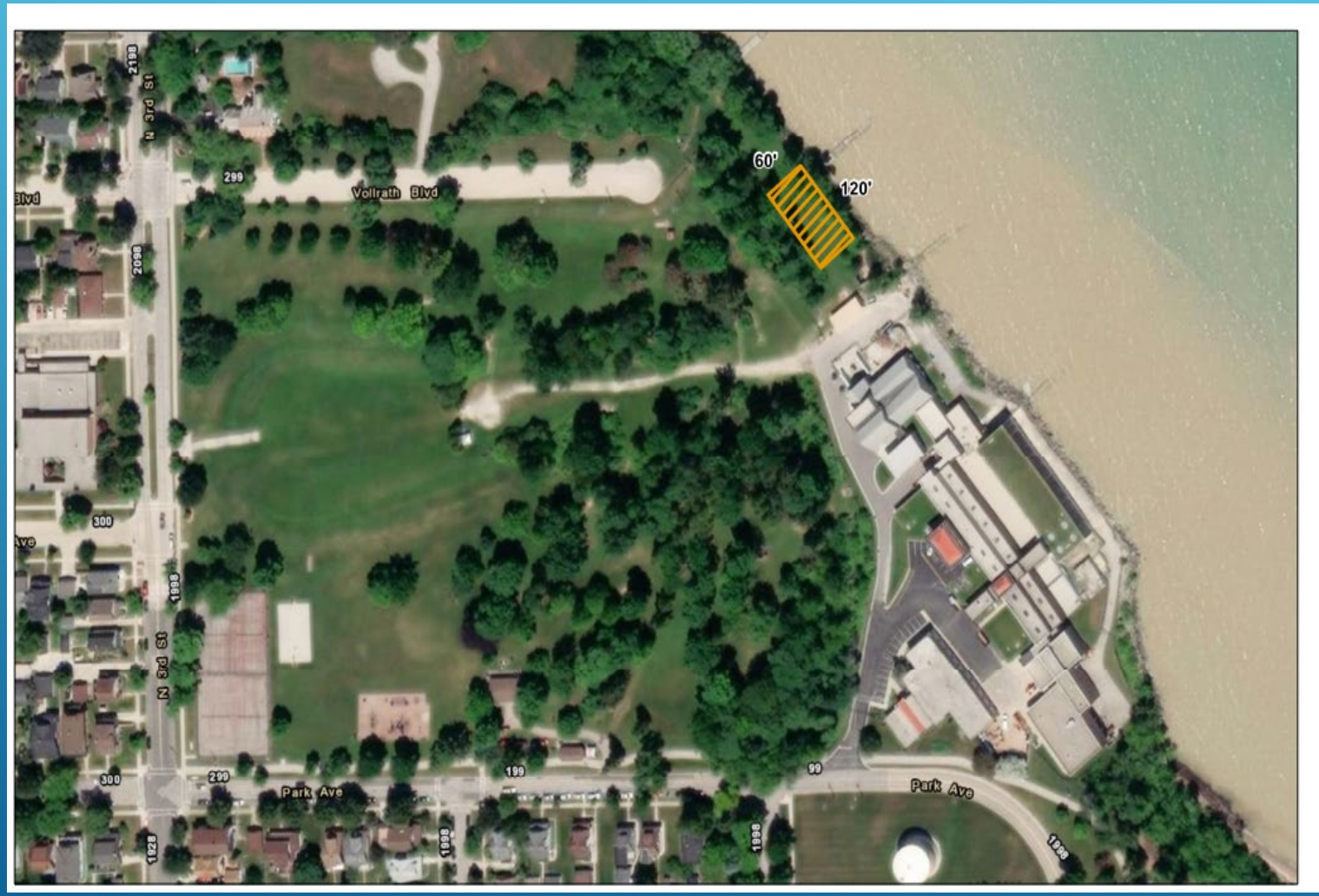
City of Sheboygan
spirit on the lake Water Utility

What should we do about these problems?

- ✓ In 2016 SWU completed a feasibility study focused on a new intake pipeline
- ✓ The study recommended installation of a new 54" intake pipeline
- ✓ The study also recommended construction of a new shore well
- ✓ The new shore well would include a new low lift pumping station
- ✓ These pieces of critical water infrastructure would be designed for 100 year lifetime

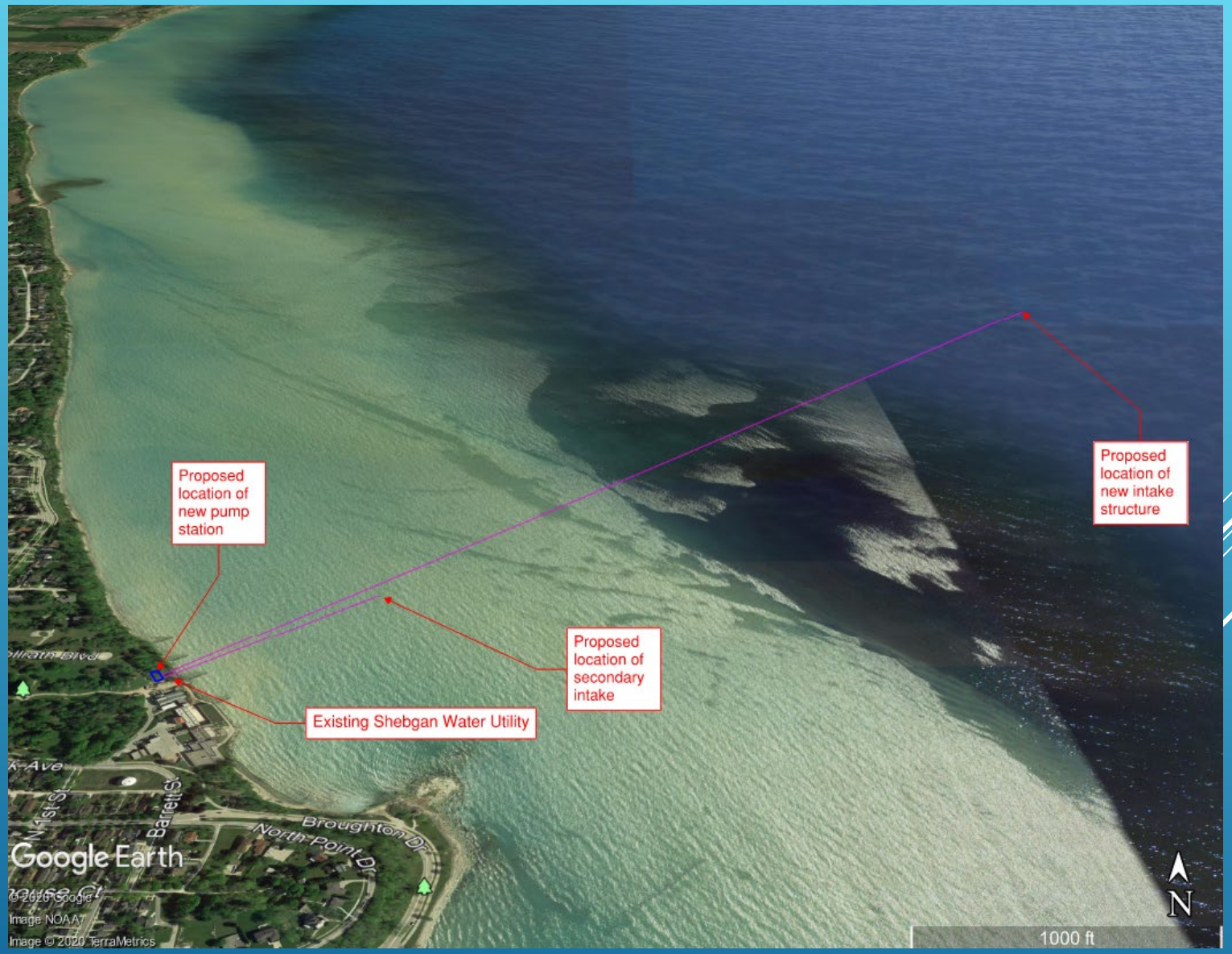
City of Sheboygan
spirit on the lake Water Utility

Anticipating the need for a future intake facility, SWU worked with the City to acquire an easement in 2004



City of Sheboygan
spirit on the lake Water Utility

The new 54” intake pipeline would run out 6,000’ with a possible emergency backup

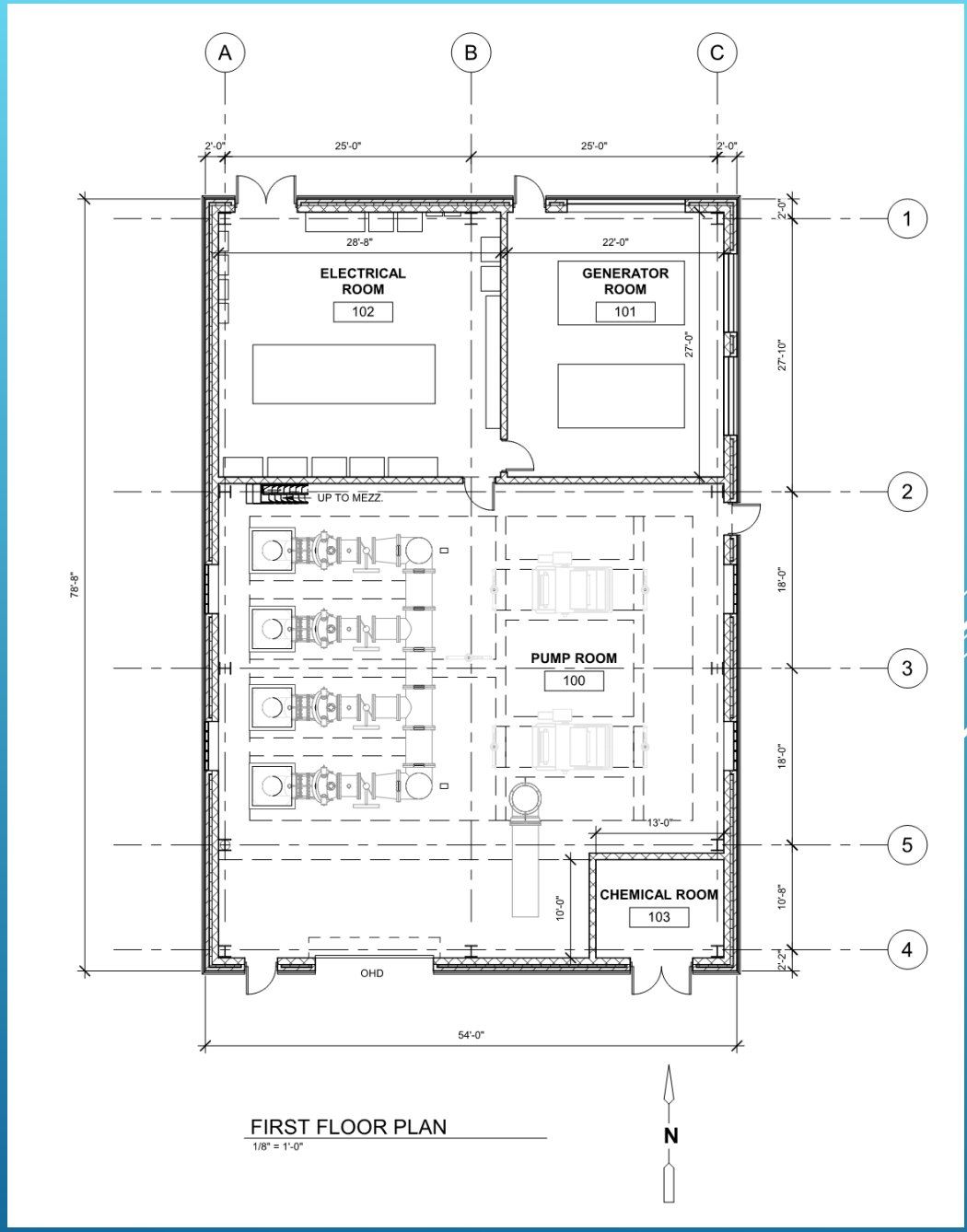


City of Sheboygan Water Utility
spirit on the lake

The RWI building is a small (50'x80')masonry structure with architectural features inspired by the water treatment plant.

City of Sheboygan Water Utility
spirit on the lake

Within the building are the shore well, pumps, electrical equipment, and a chemical feed room.



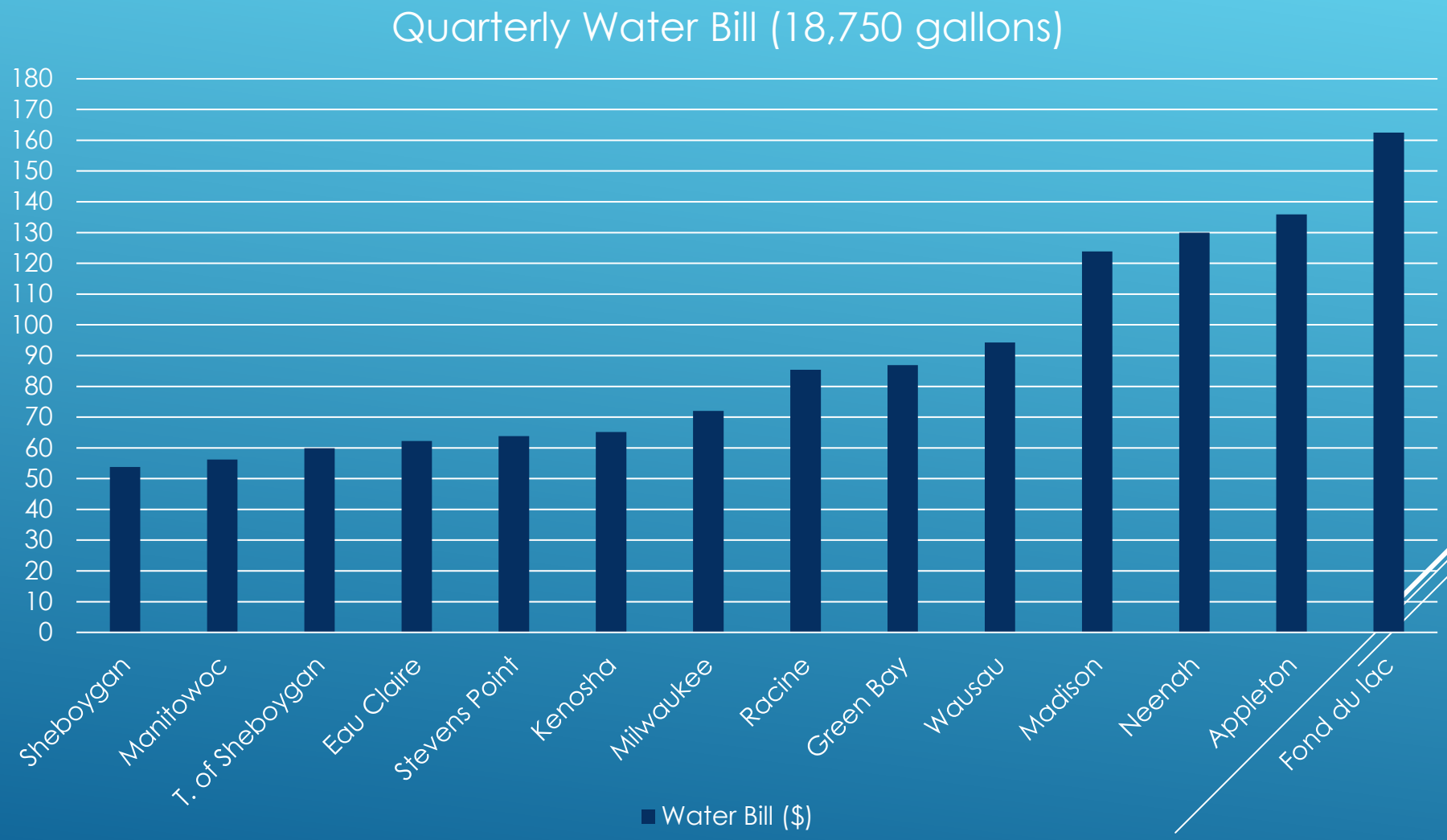
City of Sheboygan Water Utility
spirit on the lake

What will RWI cost: how do we pay for it?

- ✓ Current estimate of construction cost is $35M for this 100 year lifetime **critical infrastructure**
- ✓ SWU has been working with WI Public Finance Professionals on funding plans.
- ✓ Options include 30 year WI safe drinking water loan, 25 or 30 or 40 year private market water revenue bonds, and possible FEMA BRIC grants.
- ✓ The funding plan would have no impact on property taxes or City budget: all SWU debt is paid out of water revenues.
- ✓ New annual debt service ($1.6M - $2.0M) will require ongoing rate cases over the coming decade. Would need about 22% revenue increase to cover annual debt service.
- ✓ Sheboygan Board of Water Commissioners is committed to spreading rate increases over time as much as possible

City of Sheboygan Water Utility
spirit on the lake

Current water rate comparison



City of Sheboygan
spirit on the lake Water Utility

How do we know it's a good investment?

- ✓ SWU worked with AECOM to complete a 50 year water demand study and the results were incorporated to right-size the design at 36 MGD
- ✓ WI PSC must provide construction authorization for such a large project and will minimize any stranded assets as part of their review process. They provide additional objective oversight on public utility expenditures.
- ✓ There is no other water provider in the County.
- ✓ SWU will buy-local whenever possible, helping keep dollars in the local economy.
- ✓ Delays will only increase the costs and increase the possibility of catastrophic water supply failure.

City of Sheboygan
spirit on the lake Water Utility

Where do we go from here?

- ✓ Final design is underway and scheduled for completion in June 2021
- ✓ During the spring 2021, SWU will submit to WI PSC for construction authorization
- ✓ Bidding would take place late in 2021
- ✓ With bid results, SWU would then seek Board and Council approval of final funding package
- ✓ Construction could begin as early as 2022 and will take two seasons

City of Sheboygan
spirit on the lake Water Utility

CITY OF SHEBOYGAN

REQUEST FOR ARCHITECTURAL REVIEW BOARD CONSIDERATION

ITEM DESCRIPTION: Construction of new raw water intake and pump station at the Sheboygan Water Utility located at 72 Park Avenue.

REPORT PREPARED BY: Steve Sokolowski, Manager of Planning and Zoning

REPORT DATE: November 5, 2021 **MEETING DATE:** November 8, 2021

FISCAL SUMMARY:

Budget Line Item:	N/A
Budget Summary:	N/A
Budgeted Expenditure:	N/A
Budgeted Revenue:	N/A

STATUTORY REFERENCE:

Wisconsin Statutes:	N/A
Municipal Code:	N/A

BACKGROUND / ANALYSIS:

The Sheboygan Water Utility is proposing to construct a new raw water intake and pump station at 72 Park Avenue. The applicant states the following:

- The Sheboygan Raw Water Improvements Project includes a new raw water intake, pump station and associated yard piping, and shoreline protection improvements. The proposed location for this new structure is on an existing easement from Vollrath Park; it will not cross property lines as the Utility has secured this easement in advance. The proposed land use is an extension of the existing adjacent water treatment plant. This new facility will ensure reliability of clean drinking water serving the City of Sheboygan for decades into the future by replacing an existing shorewell built in 1887 and providing redundancy for water intake and electrical infrastructure on site.

- The pump station is proposed to be located on existing flat land adjacent to the lake and north of the existing plant. This location allows the shorewell to reach the required depth for the new water intake while maintaining the floor of the structure at two (2) feet above the regional flood elevation. The building has been placed as far away from the lake as possible within the easement to mitigate lake effects and minimize impact on the adjacent park. The intake will originate on the coast of Lake Michigan and terminate 5,500 to 7,000 linear feet into the lake. The shoreline protection improvements will span approximately 250 linear feet along the coast

- The building itself is designed to blend in with the existing plant facilities. The existing buildings on site have brick masonry facades with limestone accents. Most repeat features such as limestone headers and glass block windows from the 1920s filter plant. The new building will have a brick façade with limestone accents and glass block windows to match these existing features. It will also have a peaked standing seam roof which has been selected to match the

color of the existing metal roofs. Care has been taken to minimize impact on the adjacent parkland using cutoff light fixtures and acoustic louvers.

- The proposed building is 3,900sf (50 x 78) and 31.3 feet tall.

- New metal enclosed switchgear and pad mount transformers, will be placed north of the new structure.

- A sanitary lift station serving the building will also be located north of the building, with underground equipment and only a concrete pad visible from above.

- Existing materials stored outdoors will be removed.

STAFF COMMENTS:

Applicant appears to be proposing an addition that matches the existing facility in terms of design, materials and colors.

ACTION REQUESTED:

Motion to approve with possible amendments as determined by the Board.

ATTACHMENTS:

Architectural Review Board Application and required attachments.