

**DOWNERS GROVE SANITARY DISTRICT
BOARD OF TRUSTEES SPECIAL MEETING**

May 5, 2026 – 5:00 PM

**WASTEWATER TREATMENT CENTER
5003 Walnut Ave, Downers Grove**

PROPOSED AGENDA

- I. PUBLIC COMMENT

- II. FACILITY PLAN REPORT
 - A. TOUR OF RECOMMENDED WASTEWATER TREATMENT CENTER IMPROVEMENTS

PUBLIC COMMENT:

The District has an online form for the Public who cannot attend the meeting to submit public comment. District staff shall read aloud any received public comments during the Public Comment portion of the meeting. Public comments for Public not attending the meeting in person need to be submitted before 4:00 p.m. on May 5, 2026. The form can be found here:
<https://www.dgsd.org/government/public-comment/>



Downers Grove Sanitary District

**WASTEWATER TREATMENT CENTER
TOUR OF PROPOSED CAPITAL IMPROVEMENTS**

May 5, 2026



INTRODUCTION

During the May 5, 2026, Special Board Meeting, District Staff will provide a tour of the proposed capital improvements to the Wastewater Treatment Center (WWTC) as identified in the Downers Grove Sanitary District Facility Plan which was recently completed by Baxter & Woodman. The Facility Plan split the recommended WWTC capital improvements into four phased projects. The tour will only cover projects planned to be constructed under the first three phases as those projects have immediate needs and/or regulatory deadlines.

The attached report provides a summary of the purpose, current infrastructure, needs, proposed capital improvements and estimated costs for the major treatment processes and structures which will be on the tour. The following should be noted when reviewing the attached summaries:

- The Facility Plan did not evaluate alternatives to the improvements indicated. Alternatives will be evaluated during preliminary design. In most cases, the most expensive alternative was used to ensure conservative cost estimates. District Staff are hopeful of finding cost savings when alternatives are fully evaluated.
- The costs presented are in 2025 dollars and include engineering and planning level contingencies.

A map of the WWTC is attached for information.

Aerial photos from the 100-year anniversary slide show, which may be found on the District's website, are attached as they provide a good summary of the age of the process tanks and the buildings from the 1950s through the 1990s. Please note that the dates may not match perfectly with the dates in the attached summaries as some dates shown are at the start of construction and some are at the end of construction/process startup.

INTERMEDIATE CLARIFICATION

Purpose

Dry Weather Conditions: To polish secondary treated wastewater (effluent) by removing additional solids and organic matter (measured as BOD) upstream of filtration (i.e., provides tertiary treatment as part of the complete treatment process train).

Wet Weather Conditions: To remove suspended solids and organic matter (BOD) from wastewater and act as chlorine contact tanks for disinfection prior to direct discharge to the St. Joseph Creek (i.e., provides primary treatment for excess flow).

Current Infrastructure

Intermediate Clarifiers 1 – 3 (1972)

Needs

- The extra clarification process between the secondary clarifiers and filtration is not typically needed. At this facility, it provides too much treatment time during summer, low flow conditions and cultures red worms. This is a sign of old sludge age, which can lead to other biological process problems in the aeration tanks where the sludge is returned.
- When treating excess flow, dechlorination is not available for Clarifiers 2 & 3, thereby making chlorine residual limits difficult to meet while also complying with fecal coliform limits.
- Due to the intermediate clarifiers being full of unchlorinated secondary effluent at the beginning of an excess flow event, fecal coliform excursions occur during quick, high intensity wet weather events.
 - Removing the intermediate clarifiers from the complete treatment process train would address this issue. However, this cannot be done unless the performance of the secondary clarifiers is improved as the secondary effluent occasionally plugs the downstream filters when sent there directly.
- Keeping the intermediate clarifiers in the complete treatment process train limits the potential options for future filtration equipment downstream due to the



additional head loss required for the wastewater to flow through the intermediate clarifiers.

Proposed Improvements

- Remove the intermediate clarifiers from the complete treatment process train and only use them for excess flow treatment in the future. (This can only be done after the improvements to secondary clarification are made.)
- Provide dechlorination (Note: Costs included under dechlorination)

Estimated Cost

\$0

ANAEROBIC DIGESTION (DIGESTERS 4 & 5)

Purpose

[Primary Anaerobic Digestion \(Digester 4\)](#) To stabilize waste activated sludge created through the WWTC and hauled grease waste, reducing the volume of sludge for disposal while producing digester gas (renewable energy) and biosolids. The process reduces vector attraction and pathogen levels, making it suitable for land application to farm fields.

[Secondary Anaerobic Digestion \(Digester 5\)](#) This secondary anaerobic digester acts as a settling and storage tank following the primary anaerobic digester. The cover is a gas storage cover used to hold gas for use in the combined heat and power (CHP) engines.

Current Infrastructure

[Digester 4](#)

- Built in 1990
- Digester 4 Cover (Floating)
- Digester 4 Mixing System
 - Lances (1990)
 - Compressor (2025)

[Digester 5](#)

- Built in 1990
- Digester 5 Cover (Gas Holder)

[Digester 4 & 5 Control Building \(K\)](#)

- Built in 1990
- Digester 4 & 5 Heat Exchangers
- Miscellaneous sludge pumps
- Miscellaneous digester gas equipment and appurtenances
- Motor Control Center (MCC) 14

[Digester 5 Waste Gas Burner](#) (1990)

[West Grease Receiving Station](#) (2018)

Needs

- The 2025 Biosolids-Digestion Study Technical Memorandum hypothesized digestion in Digester 4 would improve by reducing the amount grease sent to it and replacing



the mixing system. To maintain adequate digester gas production, the memorandum recommended that a portion of the grease be digested in Digesters 1 & 2 instead of Digester 4.



- Since the District started accepting hauled grease waste, the Digester 4 Heat Exchanger cannot keep Digester 4 at the required temperature, and the Digester 5 Heat Exchanger has been used to supplement it.
- MCC 14 should be replaced due to its age. MCC 14 currently has more connected load than the incoming feeder capacity. The MCC should not be in the heat exchanger room where it is currently located due to the high temperatures in the room.
- All rooms in the Digester 4 & 5 Control Building require explosion proof electrical installations per the current safety code. The electrical installations in the basement and the heat exchanger room will need to be brought up to code when the MCC is replaced.
- The digester covers are the end of their useful life. Staff frequently monitor and repair holes in the Digester 5 cover.
- The 2023 Code Review report recommended that guardrails be installed around the digesters and the roof of the control building.
 - Guardrails have been installed on the Digester 4 walls and the control building roof.
 - Due to the vertical travel of the gas storage cover, the guardrails will need to be mounted on the Digester 5 Cover instead of the digester wall. Due to the age and condition of the cover, the guardrails cannot be welded onto the cover.
- Heavy snow weighs the Digester 5 Cover down, causing loss of digester gas. During severe winter storm events, staff must shovel snow off the Digester 5 cover.
- The Digester 4 Mixing System is very ineffective. Sampling has verified the contents of the digester are vertically stratified. In addition, the Digester 4 Mixing System has reached the end of its useful life.
- The waste gas burner is significantly deteriorated, and the controls need to be replaced.

Proposed Improvements

- Install grease pipe from the West Grease Receiving Station to Digesters 1 & 2

- Replace Digester 4 Heat Exchanger
- Replace the MCC, install the new MCC in a new electrical room, and address any additional electrical code issues
- Replace the digester covers
- Replace Digester 4 mixing system
- Remove the waste gas burner and install a new waste gas burner to replace both the Digester 3 and Digester 5 burners

Estimated Cost

\$12,700,000

EMERGENCY POWER

Purpose

To provide power to the Wastewater Treatment Center (WWTC) if utility power is lost thereby ensuring uninterrupted operations, preventing sewer backups and protecting the biology in the WWTC.

Current Infrastructure

Generator & Electrical Building (N)

- Built in 1986
- Emergency Generators 1 – 3
- MCC 12 (1987)

Underground Diesel Storage Tank (1986)

Needs

- The manufacturer will stop carrying parts for the emergency generators within five (5) years.
- The controls are obsolete.
- The insurance company will not provide pollution coverage for the diesel storage tank beyond the State required minimum due to the age of the tank.
- The utility (ComEd) automatic throw-over switch (ATO) is obsolete.
- Both utility power sources come from the same utility substation and therefore do not meet IEPA’s requirement for redundant power sources.



Proposed Improvements

- Replace emergency generators
- Install new above ground diesel tank
- Remove the utility ATO switch, converting to one utility power source
- Replace MCC 12

Estimated Cost
\$4,600,000

RAW SEWAGE PUMPING

Purpose

To lift raw wastewater over 30' up to the grit tanks from where wastewater can flow through the rest of the WWTC by gravity.

Current Infrastructure

Raw Sewage Pump Station (P)

- Built in 1972
- Pumps 1 – 5
- MCC 3 (1989)

Excess Flow Pump Station (Q)

- Built in 1984
- Pumps 6 – 8
- Pump 9 (1992)
- MCC 7 (1986)
- MCC 7A (1995)

Excess Flow Submersible Pump Station

- Built in 1997
- Pumps 10 - 12



Needs

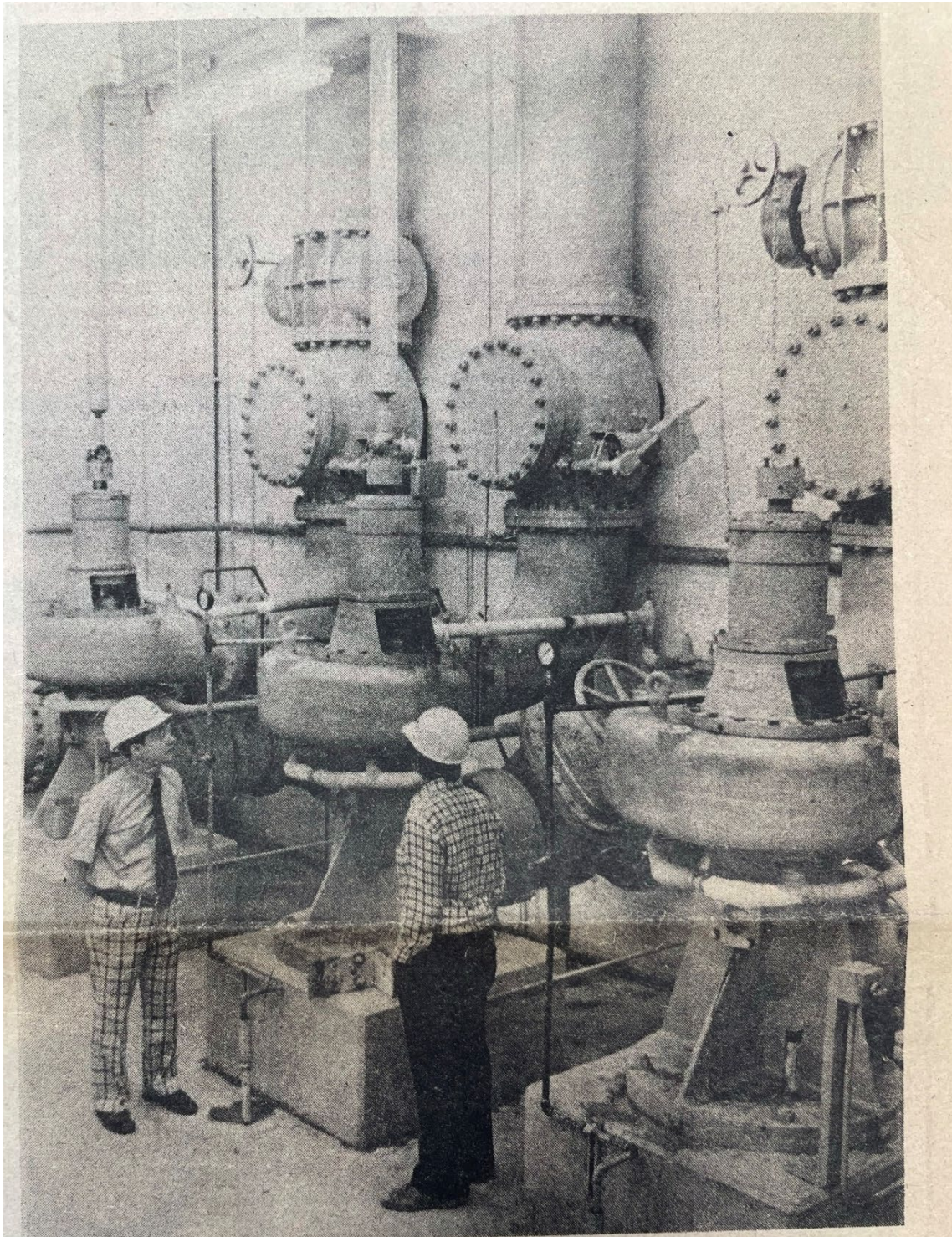
- Pumps, MCCs and valves are past their useful life.
- The manufacturer of Pumps 1 – 8 provides limited support with major parts no longer being available.

Proposed Improvements

- Replace Pumps 1 – 9
- Replace suction and discharge valves for Pumps 1 - 9
- Replace the MCCs in both pump stations

Estimated Cost

\$10,500,000



JIM PAPPAS, Sanitary District manager and Asst. Superintendent of Waste Water Treatment Ralph E. Smith are dwarfed by 3 of the 5 new raw sewage lift pumps. The pumps which lift raw sewage at the beginning of the treatment process, are capable of discharging 7,500 gallons per minute.

Source: *The Reporter*, June 11, 1975, p. 16.

SCREENING

Purpose

To protect downstream equipment and processes by removing large solids such as rags, sticks, floatables, etc. that may cause damage or impact operations and maintenance.

Current Infrastructure

Bar Screen Building (Q) – Built in 1984
w/Excess Flow Pump Station

Bar Rack

- One (1)
- Installed in 1972
- 4” wide openings
- Manually cleaned with a rake

Mechanical Bar Screens

- Two (2)
- Installed in 1984
- 1” wide openings
- Mechanically cleaned



Needs

- Parts are obsolete. Staff have had parts fabricated to keep the screens in operation.
- Bar rake motors are non-submersible, requiring staff to turn them off during high flows, resulting in backup of incoming wastewater as screens become blinded.
- Due to hydraulic issues, the screens are often bypassed during high flows, resulting in debris plugging downstream sludge lines, among other issues.
- Finer bar screens are needed to protect future downstream phosphorus removal processes.

Proposed Improvements

- Replace the screens with four (4) new screens with smaller openings. (Smaller openings create more head loss and thereby more screens are needed to maintain the existing hydraulic profile in the upstream sewers.)
- Expand the building to the south to house the two (2) additional screens
- Construct a new dedicated electrical room

Estimated Cost

\$12,300,000

GRIT REMOVAL

Purpose

To remove abrasive inorganic particles such as sand, gravel, silt and other heavy solid materials that can cause wear on downstream pumps, valves, piping and other equipment and can accumulate in pipes, channels and process tanks.

Current Infrastructure

[Grit Building \(O\)](#) – Built in 1972, expanded in 1990

[Grit Tanks 1 & 2](#) (1972)

[Grit Tanks 3 & 4](#) (1990)

[Auxiliary Equipment](#)

- Blowers 1 – 3 (1972, 2017)
- Classifiers 1 & 2 (1984, 1990)
- Cyclones 1 – 3 (1972, 1990)
- Grit Pumps 1 – 3 (1990, 1992, 1993)
- Grit Conveyor (1990)
- MCC 2 & 2a (1972 & 1989)



Needs

- The MCCs share space with the grit classifiers, conveyor and dumpster, which create a wet, corrosive environment.
- Pumps, blowers and equipment are all at or near the end of their useful life.
- Grit Tanks 1 & 2 (and associated primary clarifiers) are approximately 4 feet lower than Grit Tanks 3 & 4 (and associated primary clarifiers), resulting in uneven flow splits to the downstream primary clarifiers and aeration tanks.

Proposed Improvements

- Replace the grit tanks with a newer, more efficient grit removal system with new auxiliary equipment
- Construct a flow division box to control the flow split to the primary clarifiers
- Install motorized gates in the flow division box so primary clarifiers can easily be removed from service
- Install new MCC(s) and electrical equipment in a clean room

[Estimated Cost](#)

\$6,800,000

PRIMARY CLARIFICATION

Purpose

To remove a portion of the suspended solids and organic matter (measured as BOD) from the wastewater.

Current Infrastructure

[Primary Clarifiers 1 & 2](#) (1956)

[Primary Clarifiers 3 & 4](#) (1964)

[Primary Clarifiers 5 & 6](#) (1972)

[Primary Clarifiers 7 – 9](#) (1989)

[Primary Sludge Pumps 1 – 5](#) (1956, 1972, 2004, 2005 and 2024)

[Primary Sludge Grinders 1 & 2](#) (2004, 2016)



Needs

- Performance is inconsistent across clarifiers due to varying depths and dimensions and the inability to split flow evenly.
- Concrete on Clarifiers 1 – 6 is spalling and corroding. Concrete on Clarifiers 1 – 4 was patched recently as a temporary measure to gain more life out of the tanks and make the walkway safe.
- Due to the lower elevation of Clarifiers 1 – 4, a single clarifier cannot be removed from service as it will be back filled from the neighboring clarifier during high flows.
- A representative location to sample primary effluent is not available, making downstream process control more difficult.

Proposed Improvements

- Replace Primary Clarifiers 1 – 6 with three (3) new rectangular clarifiers at the same elevation and of similar capacity as Primary Clarifiers 7 – 9.
 - Raising the water level of the primary clarifiers provides hydraulic “space” for a primary effluent and return activated sludge (RAS) division structure and for future nutrient removal tanks.
- Replace equipment in Primary Clarifiers 7 – 9.

Estimated Cost
\$11,700,000

ANAEROBIC DIGESTION (DIGESTERS 1 & 2)

Purpose

To stabilize primary sludge created in the WWTC, reducing the volume of sludge for disposal while producing digester gas (renewable energy) and biosolids.

Current Infrastructure

Digester 1

- Built in 1963
- Digester 1 Cover (1990, floating)
- Digester 1 Mixing System (2017)

Digester 2

- Built in 1956
- Digester 2 Cover (1986, floating)
- Digester 2 Mixing System (1986)



Digester 1 & 2 Control Building (M)

- Built in 1956, expanded in 1963 and 1986
- Digester 1 Heat Exchanger (1963)
- Digester 2 Heat Exchanger (1986)
- Miscellaneous sludge pumps
- Miscellaneous digester gas equipment and appurtenances
- MCC 11 (1987)

Needs

- The digester covers are at the end of their useful lives. One hole in Digester 1 Cover has been patched recently.
- The 2023 Code Review report recommended that guardrails be installed around the digesters and certain accessible areas of the control building roof.
- The 2025 Biosolids-Digestion Study Technical Memorandum recommended a portion of the accepted grease be co-digested in Digesters 1 & 2. When the District pilot tested accepting grease into Digesters 1 & 2 around 2012, the gas takeoff piping could not handle the resulting increase in gas flow, and a cover tilted. The gas take-off piping will need to be increased with larger diameter piping before grease can be processed in Digesters 1 & 2.
- The digester mixing system on Digester 2 is very ineffective and has reached the end of its useful life.

- The Digester 1 & 2 Heat Exchangers are at the end of their useful lives.
- The 2023 Code Review report recommended that the stairs to basement be replaced due to their condition and that the guardrail at the top of the stair opening be replaced with a taller guardrail. The report also noted that the clearance between the guardrail and the Digester 1 Heat Exchanger control panel does not meet the code required minimum.
- The MCC is in the hot CHP 1 room and should be replaced due to its age.
- The basement and heat exchanger rooms in the Digester 1 & 2 Control Building require explosion proof electrical installations per the current safety code. The electrical installations in these spaces will need to be brought up to code.
- Digester gas piping from this control building is routed in the tunnel system. Due to the potential for digester gas leaking into the tunnels, the safety code requires a combustible gas detection and alarming system and a fire alarm system in the tunnels. Potential rerouting of the digester gas piping outside of the tunnel system should be reviewed.

Proposed Improvements

- Replace the digester covers
- Add guardrail around Digesters 1 & 2 and at accessible areas on the control building roof
- Replace digester gas take-off piping with larger diameter piping
- Replace the Digester 2 Mixing System
- Replace the heat exchangers
- Replace the MCC
- Address additional electrical code issues

Estimated Cost

\$10,900,000

AERATION SYSTEM/NUTRIENT REMOVAL (ACTIVATED SLUDGE)

Purpose

To remove biodegradable organic matter (BOD), suspended solids and ammonia from the wastewater and to remove phosphorus in the future.

Current Infrastructure

[Aeration Tanks 1 – 4](#) (1956, not in service)

[Aeration Tanks 5 – 7](#) (1964, not in service)

[Aeration Tanks 8 – 10](#) (1972)

[Aeration Tank 11](#) (1986)

[Blower Building \(I\)](#)

- Built in 1972, expanded in 1986
- MCC 4 (1972, expanded 1986)
- Centrifugal Blower 6 (1986)
- Turbo-blower ABS#1 (2008)
- Centrifugal Blowers 7 & 8 and Turbo-blower ABS#2 (to be replaced with 2 new turbo-blowers in 2026)



Needs

- The concrete on Aeration Tanks 1 – 7 is deteriorating.
- Aeration Tanks 1 – 7 are shallower and smaller than the newer aeration tanks, limiting their potential future use.
- Influent flow and RAS are not evenly distributed across the aeration tanks due to upstream hydraulic limitations and the multiple RAS discharge points from two different RAS pumping systems.
- Even distribution of air across all four aeration tanks is difficult to control. (This is likely also impacted by the above-mentioned uneven distribution of influent flow and RAS.)
- Slug loads of high strength recycle streams impact the plant's ability to always meet its ammonia limits.
- Total phosphorus limit of 0.35 mg/L will become effective May 1, 2040, with process improvements required to be in operation by May 1, 2038.

- The MCC is in the hot blower room. As a result, plastic parts have become brittle and break easily. Parts are obsolete.
- Turbo-blower ABS#1 is out of service for maintenance frequently.

Proposed Improvements

- Construct anaerobic and anoxic tanks for biological nutrient removal, including mixers and internal recycle pumps
- Construct a primary effluent and RAS division structure
- Install two (2) new chemical buildings with chemical feed systems for alum and carbon addition for nutrient removal and associated chemical storage tanks
- Air piping modifications to improve air flow distribution, if hydraulic improvements do not address the air distribution
- Replace oldest turbo-blower
- Replace MCC, moving out of blower room and into new electrical room (included with RAS pumping costs below)

Estimated Cost

\$42,700,000

DIGESTED PRIMARY SLUDGE AGING, DRYING AND STORAGE

Purpose

To dry and age digested sludge for two years, providing sufficient time to meet Class A pathogen reduction requirements and reduce the volume of the final product

Current Infrastructure

[Sludge Drying Beds 5 - 29](#) (1964, 1972)

Needs

- The walls of the beds are deteriorating.
- The walls in Beds 5, 6, 23 and 24 do not meet IEPA's minimum height requirement.

Proposed Improvements

- Refurbish or replace drying bed walls, depending on the condition

Estimated Cost

\$800,000



SECONDARY CLARIFICATION

Purpose

To separate biological solids (activated sludge/microorganisms) created in the aeration tanks from the treated wastewater.

Current Infrastructure

[Secondary Clarifiers 1 & 2](#) (1956)

[Secondary Clarifier 3](#) (1964)

[Secondary Clarifiers 4 & 5](#) (1968)

[Secondary Clarifiers 6 & 7](#) (1972)

[Secondary Clarifier 8](#) (1986)

[Secondary Clarifier 9](#) (1990)



Needs

- Performance is inconsistent across the clarifiers due to varying depths and dimensions and the inability to split flow evenly.
- Poor performance results in solids carryover which would blind the downstream filters without the intermediate clarifiers between them.
- The concrete on Clarifiers 1 & 2 is spalling and corroding.
- Algae growth on weirs cannot safely be removed by operators.

Proposed Improvements

- Replace Secondary Clarifiers 1 – 5 with two (2) new clarifiers at the same elevation and capacity as Secondary Clarifiers 8 & 9.
- Replace equipment in Secondary Clarifiers 6 - 9
- Install flow meters and pinch valves on influent pipes to the secondary clarifiers to provide automated, even flow splitting
- Cover weirs (to prevent algae growth)

Estimated Cost

\$20,400,000

RAS PUMPING

Purpose

To return activated sludge from the bottom of the secondary clarifiers to the aeration system to maintain the healthy concentration of active microorganisms (MLSS) needed to effectively treat incoming BOD and ammonia.

Current Infrastructure

RAS System 1

- Located in basement of the Operations Center (H)
- RAS Pumps 4 & 5 (1956)
- RAS Pump 6 (1964)
- Serves Secondary Clarifiers 1 – 4

RAS System 2

- Located in basement of the Blower Building (I)
- RAS Pumps 1 – 3 (1972)
- Serves Secondary Clarifiers 3 & 5 – 9



Needs

- The RAS pumps are reaching the end of their useful life.
- The telescoping valves used to draw sludge off the bottom of the secondary clarifiers make sludge blanket control difficult.

Proposed Improvements

- Remove RAS Systems 1 & 2
- Install six (6) new duty RAS pumps plus one (1) extra pump for redundancy in the basement of the Blower Building
- Remove the telescoping valves and pipe each clarifier to a dedicated RAS pump
- Construct a new dedicated electrical room (Note: This will also house the MCC for blowers.)

Estimated Cost

\$3,000,000

ANAEROBIC DIGESTION (DIGESTER 3)

Purpose

This secondary anaerobic digester acts as a settling and storage tank following the primary anaerobic digesters and is used to maximize liquid-solid separation. The cover is a gas storage cover used to hold gas for use in the combined heat and power (CHP) engines.

Current Infrastructure

Digester 3

- Built in 1986
- Digester 3 Cover (Gas Holder)

Digester 3 Control Building (G)

- Built in 1986
- Digester 3 Heat Exchanger
- Miscellaneous sludge pumps
- Miscellaneous digester gas equipment and appurtenances
- MCC 10



Digester 3 Waste Gas Burner (1986)

Needs

- The waste gas burner has significant corrosion on it, and the controls need to be replaced.
- The digester cover is at the end of its useful life.
- The 2023 Code Review report recommended that guardrails be installed around the digester and the roof of the control building. Due to the vertical travel of the gas storage cover, the guardrails will need to be mounted on the digester cover instead of the digester wall.
- Heavy snow weighs the digester cover down, causing loss of digester gas. During severe winter storm events, WWTC staff must shovel snow off the digester cover.
- The MCC is in the hot heat exchanger room and should be replaced due to its age.
- All rooms in the Digester 3 Control Building require explosion proof electrical installations per the current safety code. The electrical installations in the basement and the heat exchanger room will need to be brought up to code when the MCC is replaced.

Proposed Improvements

- Remove the waste gas burner and install a new waste gas burner to replace both the Digester 3 and Digester 5 burners (Note: This cost is not included here - See the Digester 4 & 5 cost estimate.)
- Replace the digester cover
- Replace the MCC, install it in a new electrical room, and address any additional electrical code issues

Estimated Cost

\$4,100,000

SYSTEM GARAGE

Purpose

To house the operations of the Sewer Maintenance Department

Current Infrastructure

System Garage (F) (1968)

Needs

- The System Garage has two truck bays for the three vehicles that need to be stored inside during the winter (the Vac-Con, the Jetter and the TV truck.) As emergency vehicles, the Vac-Con and the Jetter must be kept warm to ensure the water in the tanks, pipes and hoses do not freeze and are available when needed.
- The building is not tall enough to house all the vehicles, resulting in the sewer system department having to spread its operations across multiple buildings.
 - The Vac-Con was ordered with a lower chassis so that it could fit in the Maintenance Services Building (MSB) garage where it is stored during cold weather. During warm weather, it is stored outside. When the Vac-Con is replaced in seven (7) years, the lower chassis option may not be available and a new, taller location to store it will be needed.
 - The TV truck will be housed in the storage garage on Walnut Ave initially.
- The main room in the Sewer System Garage serves as a storage room and office.
- As the lunchroom in the MSB is not large enough for all WWTC staff, sewer staff often eat in the Sewer System Garage or in their vehicles.
- The SCADA panel is over the water heater.
- The bathroom does not have a sink.
- Staff use the locker room in the MSB.



Proposed Improvements

- Build a new Sewer Services Building to fully house sewer maintenance operations, including:
 - Storage for the sewer department vehicles, equipment, piping and appurtenances
 - A flow meter room
 - Locker room, office, lunch/training space and parking lot. (This will free up space in the MSB locker room, lunchroom and parking lot, so those spaces do not need to be expanded.)

Estimated Cost

\$8,100,000

DISINFECTION

Purpose

To protect public health by killing or inactivating pathogenic microorganisms such as bacteria, viruses and parasites before discharging treated wastewater into the environment

Current Infrastructure

Hypochlorite Feed Building (E)

- Built in 1972
- Hypochlorite Storage Tanks (2006)
- Hypochlorite Feed Pumps 1 – 4 (2006)
- MCC 5 (1972)



Needs

- The hypochlorite generator (OSEC) was removed from service in 2023 due to irreparable leaks. Since then, bulk hypochlorite has been used for all disinfection needs.
 - The OSEC generator was not replaced as it was discovered at that time that MCC 14, which feeds MCC 5, was overloaded.
- The hypochlorite tanks are inspected and repaired every five years. Due to their age, they are expected to need replacement by the next inspection, which will be in 2030.
- The hypochlorite feed pumps have sufficient capacity with all pumps in service but do not have enough capacity should a pump be out of service for maintenance.
- The Hypochlorite Feed Building is not located near any of the processes which need chlorine (i.e., the Chlorine Contact Tank, the Excess Flow Clarifiers or the Intermediate Clarifiers). Plugging of hypochlorite lines has caused fecal coliform excursions. While switching to city water for make-up water has reduced the plugging, District operators recommend locating any future hypochlorite system closer to the demand, if possible.
- Piping is run across the floor, creating tripping hazards.
- The emergency shower and eyewash are not easily visible or accessible.
- The MCC is in the room with the hypochlorite pumps and tanks, which is a corrosive environment.

Proposed Improvements

- Build a new Disinfection Building near the Filter Building for a new disinfection system, including all pumps, tanks and appurtenances.

Estimated Cost

\$8,400,000

MAINTENANCE SERVICES BUILDING (MSB)

Purpose

To house the maintenance operations and to provide employee spaces (locker room, lunchroom and offices) for all employees that report to the WWTC

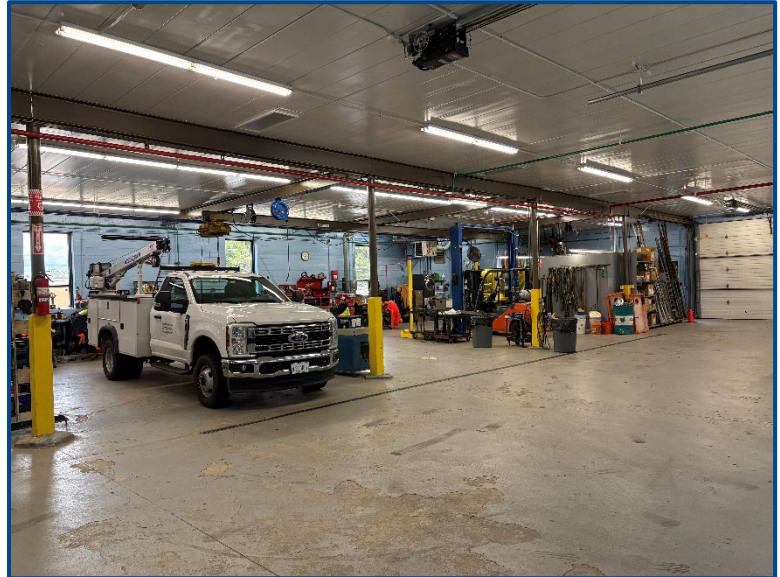
Current Infrastructure

Maintenance Services Building (D) –

Built in the 1960s by a printing company and purchased by the District in 1984

Needs

- The parking spots around the MSB are often all in use. This parking area is used for employee personal vehicles and District vehicles and equipment.
- The existing bridge crane does not have sufficient capacity for all loads. The crane does not extend the entire length of the garage.
- Working in the garage is uncomfortable during hot summer days.
- The MSB garage becomes very crowded during cold weather as this is one of the few spaces where vehicles can be brought inside.
- The MSB garage is the only space the District has which is large enough to hold all employee luncheons or training or to host seminars. Noise both within the garage and outside (i.e., the train) makes this less than ideal. Setting up and tearing down for these events takes staff time away from work. In addition, maintenance work requiring use of the garage must be delayed when the garage is being used for other purposes.
- The lunchroom comfortably seats 16 employees whereas about 25 employees report to the WWTC.
- Additional lockers are needed in the locker room.
- The locker room changing area is visible to the garage when the door opens.



Proposed Improvements

- Upgrade the garage bridge crane system to one that can handle larger loads and extends along the entire length of the garage.
- Upgrade the building HVAC to provide cooling in the garage in the summer.
- Improvements to the locker room, lunchroom and parking area and addition of a training room are not included as they will not be needed if the proposed Sewer Services Building and Biosolids Buildings are built.

Estimated Cost

\$900,000

EXCESS FLOW CLARIFICATION

Purpose

To remove suspended solids and organic matter (BOD) from wastewater and act as chlorine contact tanks for disinfection prior to discharge.

Current Infrastructure

[Excess Flow Clarifiers 1 - 4 \(1984\)](#)

[Excess Flow Sludge Pump Building \(C\)](#)

- Built in 1984
- Excess Flow Sludge Pumps 1 & 2 (1984)
- Excess Flow Sludge Grinder (2015)
- MCC 8 (1984)

Needs

- The clarifier and sludge draw-off controls located in the building are obsolete.
- The MCC needs to be replaced due to age.
- The 2024 derailment of the traveling bridge (sludge scraper) in Excess Flow Clarifiers 1 & 2 has left the equipment out of alignment, making it highly vulnerable to derail again.
- Concrete repairs are needed where the fiberglass effluent troughs come through the walls and around the scraper and at other miscellaneous locations.
- Grout repairs are needed under the rail supports.
- The 2023 Code Review report recommended that guardrails and sidewalk be installed around the Excess Flow Clarifiers.



Proposed Improvements

- Replace the control panels
- Replace MCC 8
- Replace the traveling bridge for Excess Flow Clarifiers 1 & 2
- Rehabilitate the traveling bridge for Excess Flow Clarifiers 3 & 4
- Repair concrete/grout where needed
- Install guardrail and sidewalk around the clarifiers

Estimated Cost
\$8,100,000



NOTICE
ALL UNAUTHORIZED PERSONS
ENTERING THIS AREA WITHOUT
PROPER PERMISSION
MUST KEEP OUT

DECHLORINATION

Purpose

To protect aquatic life by removing toxic residual chlorine from the treated wastewater prior to discharge into the environment

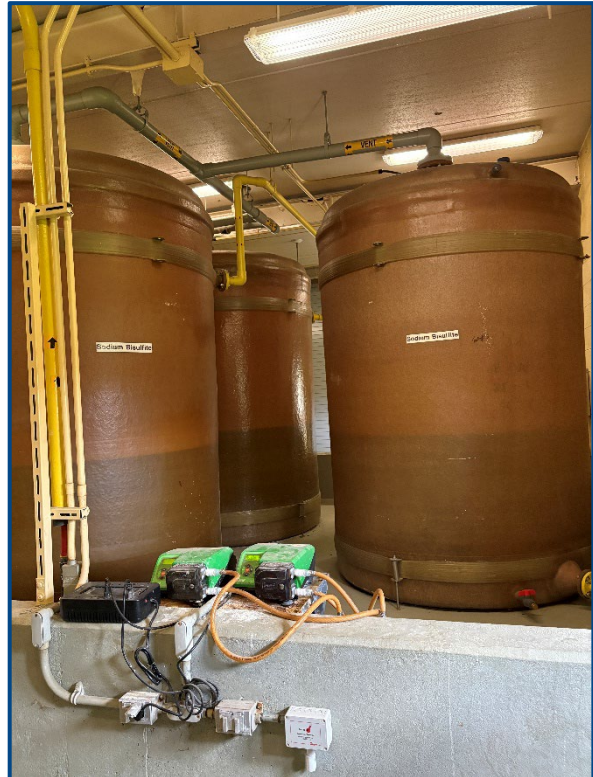
Current Infrastructure

Bisulfite (B)

- Built in 1986
- Bisulfite Storage Tanks (2006)
- Bisulfite Feed Pumps 1 (2011)
- Bisulfite Feed Pump 2 (2012)
- MCC 13 (1986)

Needs

- The bisulfite tanks are inspected and repaired every five years. Due to their age, they are expected to need replacement by the next inspection, which will be in 2030.
- The excess flow effluent from the Intermediate Clarifiers is not dechlorinated, making it difficult to meet both fecal coliform limits and total residual chlorine limits at the same time.



Proposed Improvements

- Replace the existing Bisulfite Storage Tanks
- Install a bisulfite pump skid and piping to serve the Intermediate Clarifiers
- Replace MCC 13

Estimated Cost

\$600,000

BIOSOLIDS OPERATIONS

Purpose

To house the biosolids operations

Current Infrastructure

Old Pickup Station

Needs

- Biosolids vehicles and equipment are stored randomly throughout the WWTC where space is available.
- With the desire to protect the District’s investment, District Staff are concerned about the impact of the elements (and especially UV light) on the dump trucks and loaders while stored outside.
- In the winter, large vehicles are stored in the storage building on Walnut, creating safety issues due to how much is squeezed into that building.



Proposed Improvements

- Build a new Biosolids Services Building to fully house biosolids operations, including:
 - Indoor storage for the dump trucks and end loaders
 - Outdoor, covered storage for the augers and sweeper
 - Employee facilities for the biosolids mechanics. (This will free up space in the MSB locker room, offices, lunchroom and parking area, so those spaces do not need to be expanded.)
 - Evaluate combining this with the Sewer Service Building for cost savings.

Estimated Cost
\$5,200,000

DEWATERED SLUDGE AGING, DRYING AND STORAGE

Purpose

To store dewatered sludge for two years, providing sufficient aging time to meet Class A pathogen reduction requirements and reduce the volume of the final product by drying.

Current Infrastructure

[Sludge Drying Beds 31 - 33](#) (1986)

[Old Pickup Station](#)

[Big Top \(S\)](#) (1991)

Needs

- Dewatered sludge is hauled away for Class B land application on farm fields due to lack of paved areas to age, dry and store sludge. (Class B land application is much more expensive than Class A public distribution.)
- The East Berm Area has asphalt screenings on the ground, making it difficult to move biosolids around.
- Storm runoff from the Big Top and neighboring area discharges into a retention pond that has no outlet.



Proposed Improvements

- Pave the East Berm Area to provide additional aging/storage of dewatered sludge.
- Reroute stormwater to the head of the plant.

Estimated Cost

\$1,200,000

SLUDGE DEWATERING

Purpose

To remove water from the digested sludge resulting in a solid “cake” with significantly reduced volume and weight.

Current Infrastructure

Belt Filter Press Building (A)

- Built in 1986
- Belt Filter Press (2009)
- Belt Press Sludge Feed Pump 1 (2021)
- Belt Press Sludge Feed Pump 2 (2026)
- Polymer System (2017)
- Conveyor (2009)
- MCC 9 (1987)



Needs

- Since the District started co-digesting with hauled grease waste, the sludge has been harder to dewater.
- Future phosphorus removal will increase sludge production. In addition, sludge produced from biological phosphorus removal will be more difficult to dewater.
- The MCC is in the wet, corrosive environment with the belt filter press.
- When the belt filter press is out of service for maintenance, digested sludge is sent to drying beds and/or lagoons, taking up space needed for other purposes.
- The belt filter press is run during the day, four (4) days per week. The filtrate, which is recycled to the incoming sewer, is very high in ammonia, resulting in slug loads to the WWTC.
- The sludge hopper room, which is an explosion proof area, is connected to the main room.

Proposed Improvements

- Install new redundant dewatering equipment
- Expand the building to provide space for redundancy and a dedicated electrical room for a new MCC.

Estimated Cost

\$8,700,000

- Construct ammonia equalization tanks to spread out the filtrate return evenly throughout the day/week.
- Remove the door between the hopper room and the main room and construct an exterior door to the hopper room.

FILTRATION

Purpose

To polish secondary or intermediate effluent by removing additional solids and organic matter (measured as BOD) and phosphorus (in the future).

Current Infrastructure

Sand Filter/Microstrainer Building (J)

- Built in 1972, expanded in 1986 and 1992
- Sand Filters 1 & 2 (1986)
- Sand Filters 3 – 6 (1992)
- MCC 6 (1992)
- MCC 6A (1972)

Needs

- The traveling bridges (backwash carriages) are in poor condition and need to be replaced.
- The control cabinets are in poor condition also, and some parts are obsolete.
- The sand filters plug up during high flow events when the intermediate clarifiers are bypassed and at times when secondary clarification is not performing well.
- The flow split is not balanced with Sand Filters 5 & 6 receiving proportionally more flow than Sand Filters 1 – 4.
- Total phosphorus limit of 0.35 mg/L will become effective May 1, 2040, with process improvements required to be in operation by May 1, 2038. The existing sand filters will not provide sufficient treatment to ensure the future phosphorus limit is always met.
- All electrical equipment is rusting due to the damp, corrosive environment.
- Parts are obsolete for MCC 6A. MCC 6A has openings on bucket cover plates, which create hazardous conditions.



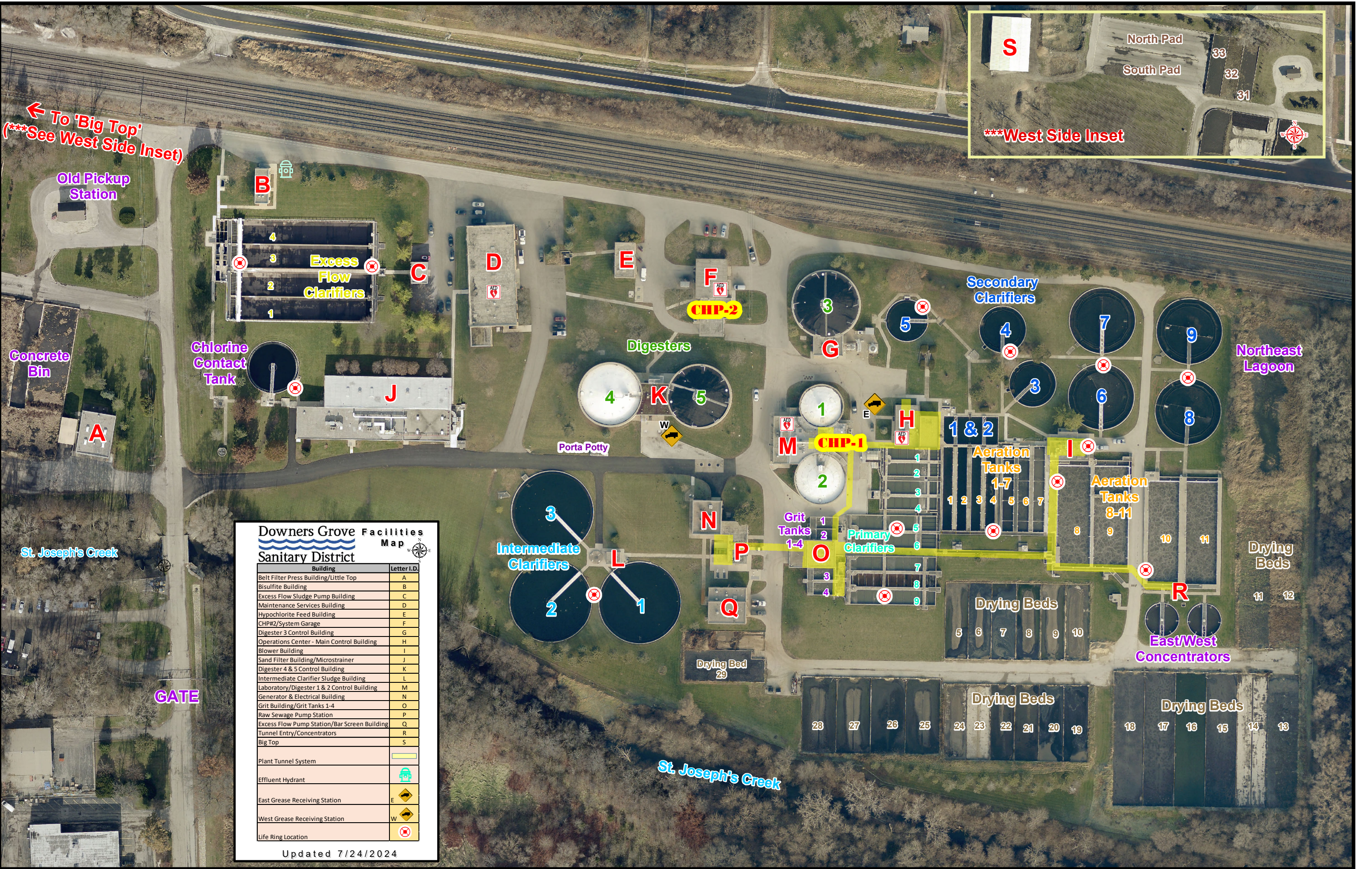
Proposed Improvements

- Demolish the existing sand filters
- Install disc filters inside the existing building to meet future phosphorus limits
- Replace the MCCs in a new clean electrical room

Estimated Cost

\$8,400,000





← To 'Big Top'
 (***) See West Side Inset)



Old Pickup Station

Concrete Bin

St. Joseph's Creek

GATE

Building	Letter I.D.
Belt Filter Press Building/Little Top	A
Bisulfite Building	B
Excess Flow Sludge Pump Building	C
Maintenance Services Building	D
Hypochlorite Feed Building	E
CHP#2/System Garage	F
Digester 3 Control Building	G
Operations Center - Main Control Building	H
Blower Building	I
Sand Filter Building/Microstrainer	J
Digester 4 & 5 Control Building	K
Intermediate Clarifier Sludge Building	L
Laboratory/Digester 1 & 2 Control Building	M
Generator & Electrical Building	N
Grit Building/Grit Tanks 1-4	O
Raw Sewage Pump Station	P
Excess Flow Pump Station/Bar Screen Building	Q
Tunnel Entry/Concentrators	R
Big Top	S

Plant Tunnel System	—
Effluent Hydrant	Ⓜ
East Grease Receiving Station	E Ⓜ
West Grease Receiving Station	W Ⓜ
Life Ring Location	Ⓧ

Updated 7/24/2024

Excess Flow Clarifiers

Chlorine Contact Tank

Digesters

Porta Potty

Intermediate Clarifiers

CHP-2

CHP-1

Secondary Clarifiers

Aeration Tanks 1-7

Aeration Tanks 8-11

Primary Clarifiers

Drying Beds

Drying Beds

East/West Concentrators

Drying Beds

Drying Beds

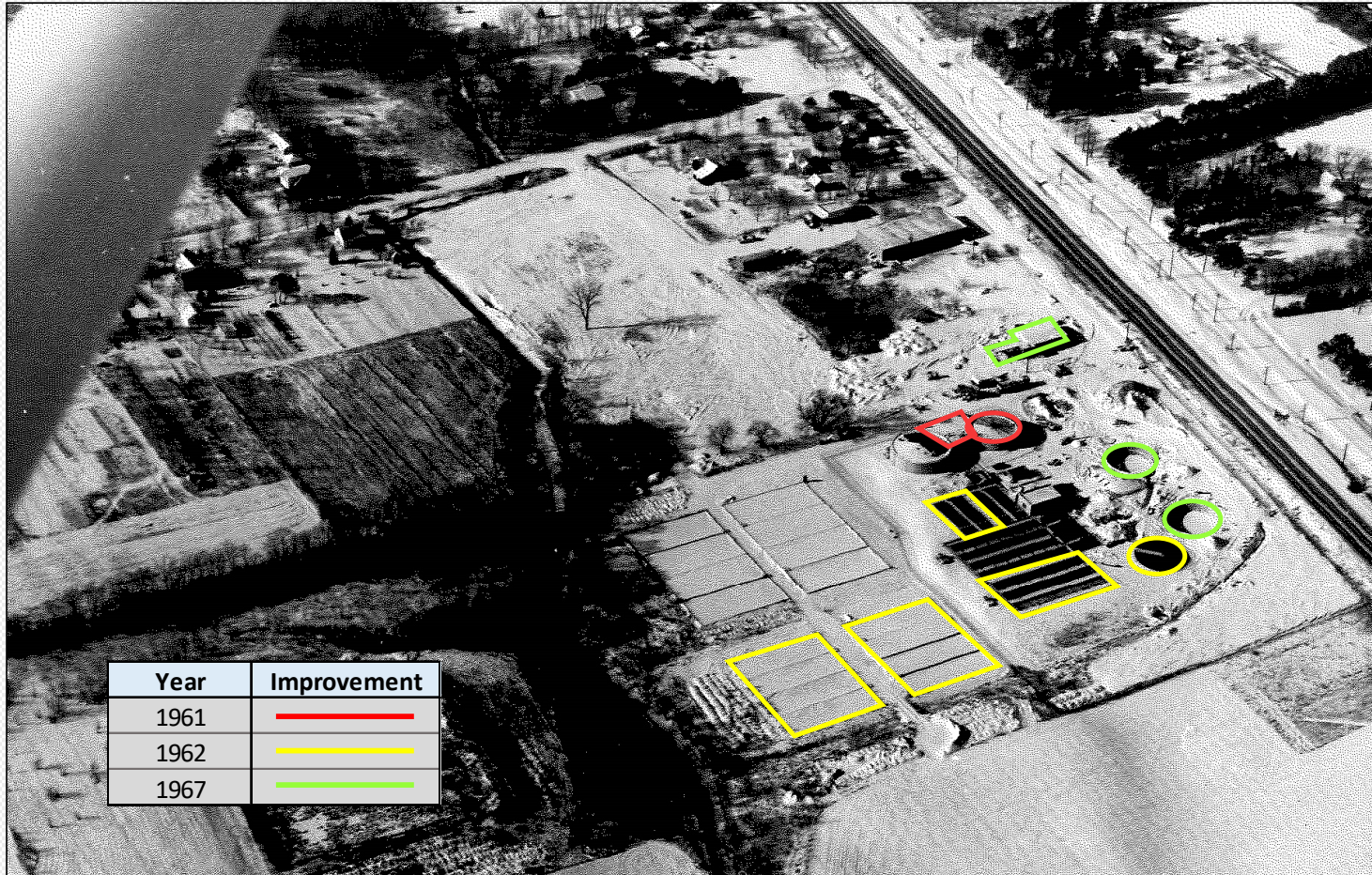
Drying Beds

Northeast Lagoon

St. Joseph's Creek

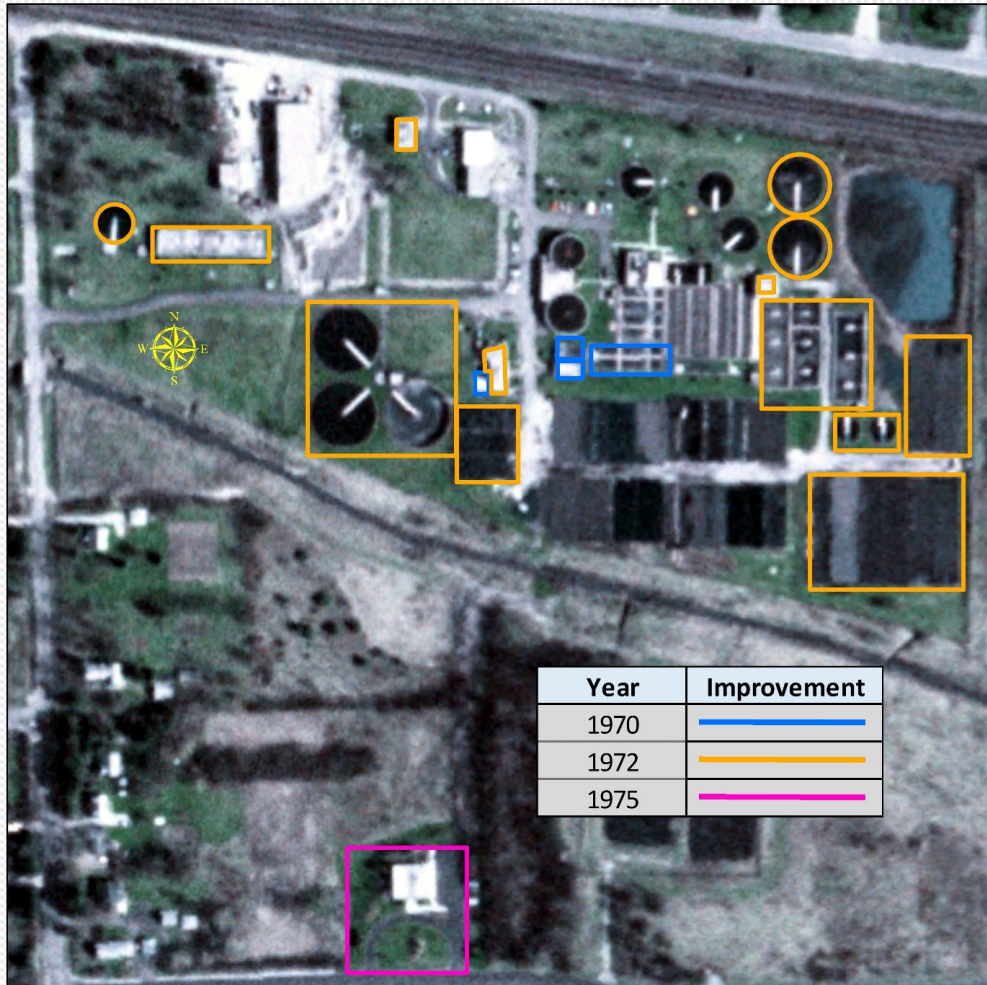


1957
Aerial of the Wastewater Treatment Center



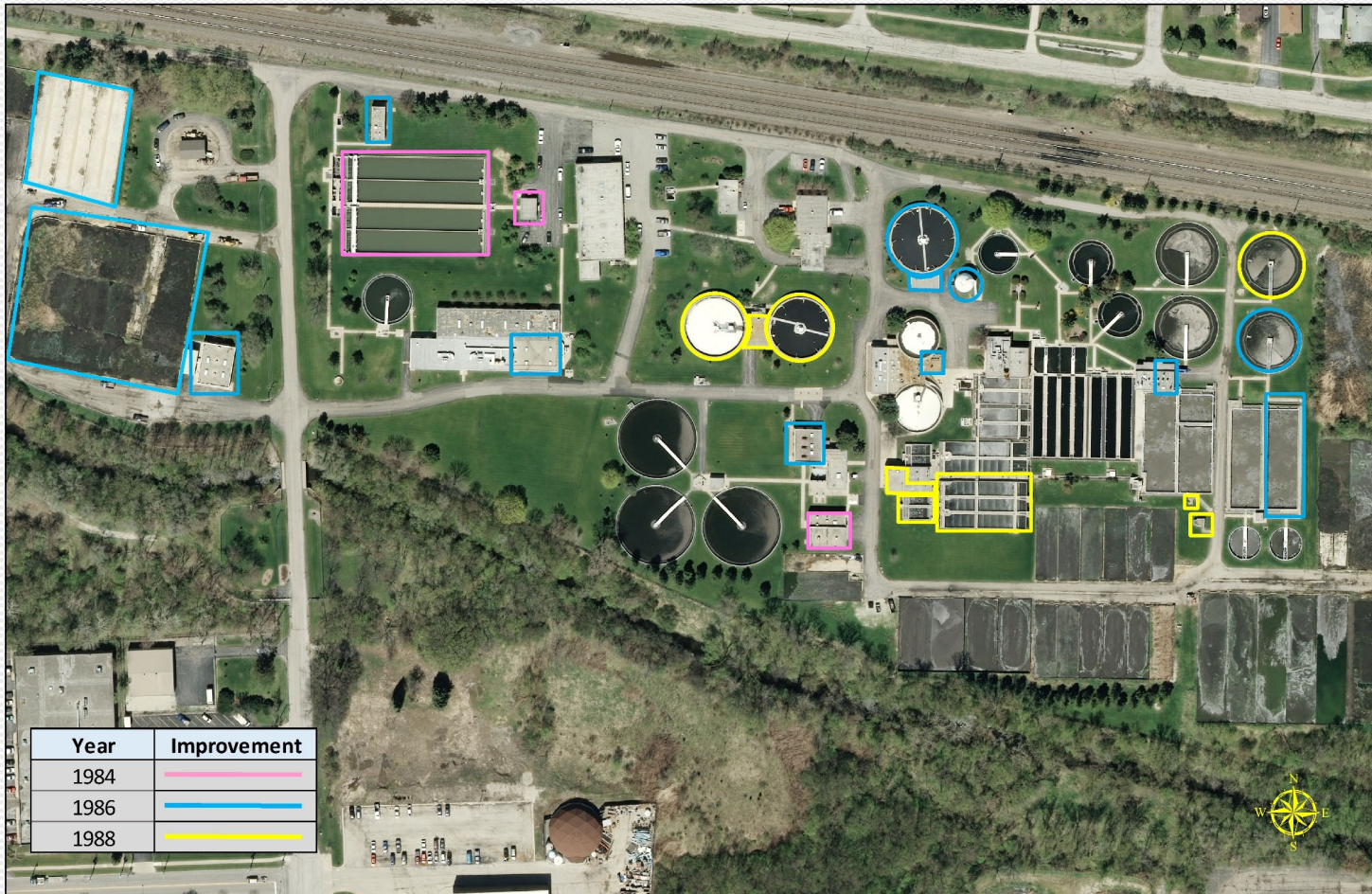
1967

Aerial of the Wastewater Treatment Center during its expansion

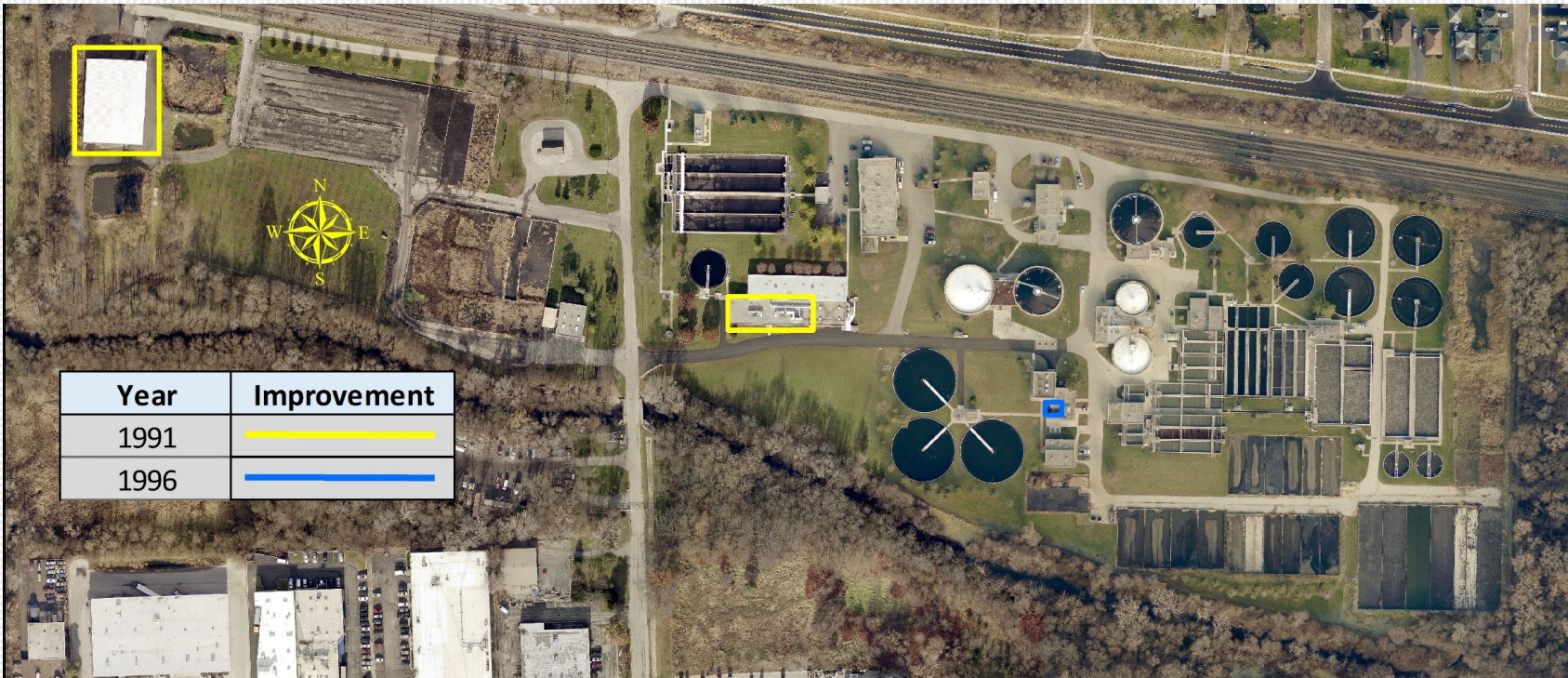


1970s

Aerial of the Wastewater Treatment Center



1980s
Aerial of Wastewater Treatment Center



Year	Improvement
1991	—
1996	—

1990s
Aerial of Wastewater Treatment Center