Town of Byron
Wastewater Treatment Plant Improvements
Preliminary Engineering Report (PER)

Presented by:

MRB Group

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Town Board

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Public Information Meeting Purpose

- *Explain Preliminary Engineering Report (PER) developed and it's role in pursuing grant funding opportunities for the Town*
- *Review work completed to date*
- *Review next steps*
- *Answer residents questions*

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Goals and Objectives

- Provide affordable sanitary sewer service.
- Maximize potential grants and provide best funding package to Town
  - WQIP (Water Quality Improvement Program) Grant awarded early 2023 - $1 million for disinfection
  - Hardship financing eligible – 0% interest loan for the Consolidated Sewer District over 30 years through the Clean Water State Revolving Fund (CWSRF)
  - WIIA (Water Infrastructure Improvement Act) Grant application
  - BIL (Bipartisan Infrastructure Law) Funding application
- Create a long-term plan for the Town's sanitary sewer system that will position the Town to meet current and future NYSDEC discharge requirements to State waterbodies

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Background

- Town Wastewater Treatment System consists of three (3) outfalls:
  - Central Byron (Outfall 001)
  - South Byron (Outfall 002)
  - North Byron (Outfall 003)

- One (1) State Pollutant Discharge Elimination System (SPDES) permit issued to Town thru NYSDEC gives Town the right to discharge from the 3 outfalls to Black Creek (Central and South) and Spring Creek (North)

- Current facilities were built in the mid-1980s

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Current Wastewater Infrastructure

- All three (3) wastewater treatment plant sites are similar:
  - Residences/businesses have septic tanks
  - Septic tank effluent ("gray water") flows to sanitary sewer collection system
  - Collection system brings gray water to either North, Central or South Byron wastewater treatment plants which consist of:
    - Lift station
    - Septic tank
    - Flow meter
    - Dosing pumps and valves
    - Sand filter beds for treatment of the gray water (i.e. community leach fields)
    - Outfall to either Black Creek or Spring Creek

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Problem Identification

1. Seasonal Effluent Disinfection Requirement by NYSDEC
2. Age of Infrastructure and Ammonia SPDES Limit Compliance
3. Future Concerns – Total Phosphorous

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Problem Identification

1. Seasonal Effluent Disinfection Requirement by NYSDEC
   - Statewide effort requiring effluent disinfection prior to entering waterbody
   - Town SPDES permit compliance timeline requires this to be complete by May 1, 2025, and the Town must be able to comply with a fecal coliform limit
   - Town petitioned NYSDEC for disinfection waiver for North Byron outfall based on low fecal coliform numbers in existing configuration. NYSDEC granted waiver, but noted this waiver "does not guarantee disinfection will not be required in the future"

Problem Identification

2. Age of Infrastructure and Ammonia SPDES Limit Compliance
   - Similar to residential leach fields, community sand filter beds have a useful life
   - Sand filter beds are +/- 40 years old
   - Sewer District-wide - Septic tanks require replacement now
   - Equipment at both Central and South Byron require replacement
   - South Byron sand filter beds currently have operational issues – sections with minimal or no flow capacity

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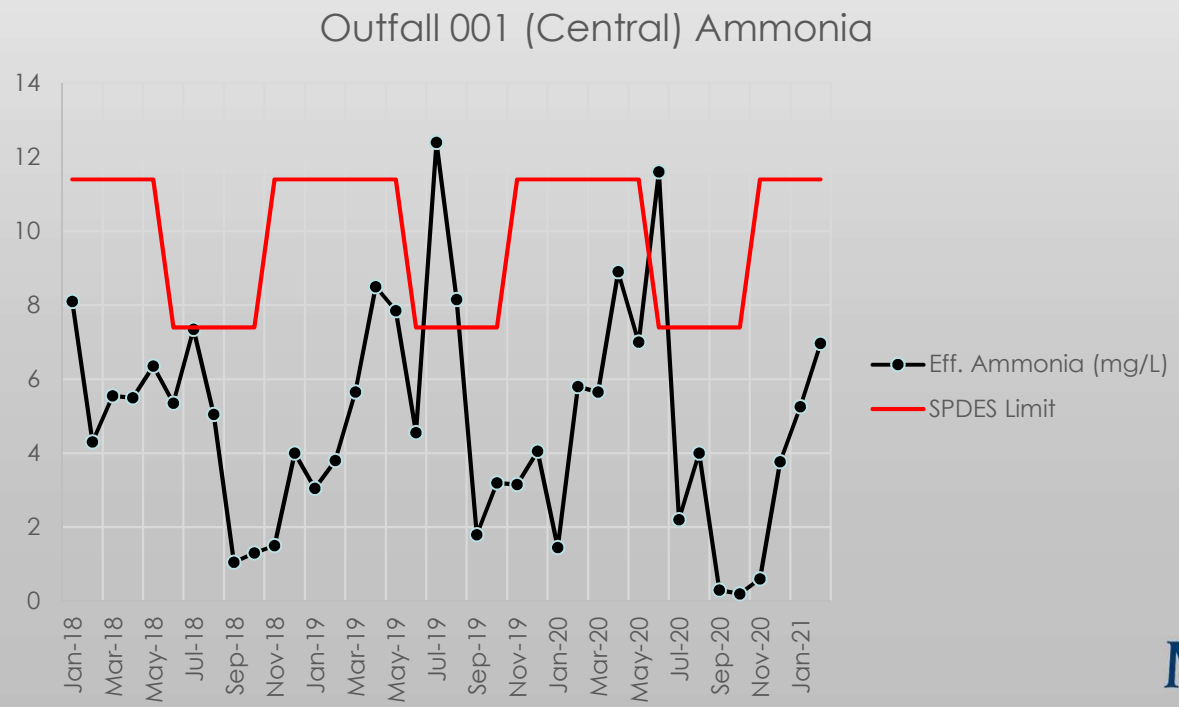
Problem Identification

2. Age of Infrastructure and Ammonia SPDES Limit Compliance (continued)
   - Central Byron sand filter bed has highest flows and loading
   - Central Byron (below) has experienced issues meeting seasonal NYSDEC permit limits for Ammonia during peak loading events (flow and BOD)



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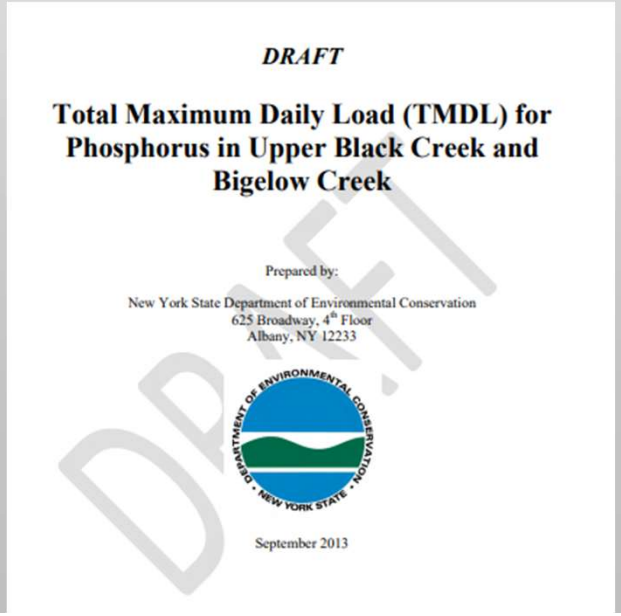
Problem Identification

3. Potential Future modifications to SPDES Permit
   - Phosphorous - Draft Total Maximum Daily Load (TMDL) – Black Creek
     - Current SPDES permit does not have a limitation for total phosphorous for any of the three (3) Town outfalls
     - DEC has indicated to the Town that a phosphorous limit is a possibility in the future, most recently in Dec. 2021 when SPDES permit and fact sheet was issued
     - Draft TMDL produced by NYSDEC identifies large reductions in total phosphorous from South Byron specifically



DRAFT

Total Maximum Daily Load (TMDL) for Phosphorus in Upper Black Creek and Bigelow Creek

Prepared by:

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September 2013

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Alternatives Evaluation

1. Disinfection Improvements Only
2. Rehabilitation of Sand Filtration Beds at Central and South Byron [1,2]
3. New Wastewater Treatment Plants at Central and South Byron [1,2]
4. Consolidation of Central and South Byron into one (1) new Wastewater Treatment Plant [1,2]
5. Pump Station and Forcemain Conveyance to Monroe County Sewer System [1,2]

1) Includes Disinfection Improvements

2) Includes Septic Tank Replacements

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Alternatives Evaluation

1. Disinfection Improvements Only
   - Town is required to comply with a disinfection limit by May 1, 2025 (fecal coliform based limit)
   - Ultraviolet disinfection recommended
   - Would require projects to occur at Central and South Byron
   - Addresses immediate regulatory requirements, however other significant infrastructure issues not addressed:
     - Sand Filter Beds will require a project within 1-3 years based on age and performance, and current operational issues
     - Future modifications to SPDES permit (e.g. phosphorous) would need to be provided at each outfall

Estimated Project Cost: $1.68 million**

($533 annually per EDU)

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Alternatives Evaluation

2. Rehabilitation of Sand Filtration Beds at Central and South Byron (*includes Disinfection Improvements*)
   - Excavation and removal of sand filter beds, subsurface piping, liners, etc.
   - Alternative would be to replace in-kind
   - Pros: Long-term solution assuming no changes to SPDES permit
   - Cons: Requires 2 separate disinfection projects; Labor intensive; Significant disposal costs of used sand – DEC would need to approve reuse; Future modifications to SPDES permit would require multiple projects

Estimated Project Cost: $13.02 million
($1,101 annually per EDU)

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Alternatives Evaluation

3. New Wastewater Treatment Plants at Central and South Byron (*includes Disinfection Improvements*)
   - Abandon sand filter beds
   - Construct two (2) new "package plants" at Central and South Byron
   - Pros: High quality effluent exceeding SPDES permit (e.g. ammonia); easily accommodate a future phosphorous limit
   - Cons: Cost-prohibitive – requires twice the effort for:
     - Required disinfection projects;
     - Any future improvement projects going forward;
     - Operation and maintenance costs;
     - SPDES compliance sampling costs and labor;

Estimated Project Cost: $13.09 million
($1,105 annually per EDU)

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Alternatives Evaluation

4. Consolidation of Central and South Byron into one (1) new Wastewater Treatment Plant (*includes Disinfection Improvements*)
   - Abandon sand filter beds
   - Construct one (1) new "package plant" at Central Byron
   - New Pump Station at South Byron with forcemain to Central Byron
   - Size new wastewater plant to accept North Byron when needed in future
   - Pros: Simplifies all future modifications to Town wastewater infrastructure; high quality effluent exceeding SPDES permit (e.g. ammonia); easily accommodate a future phosphorous limit

Estimated Project Cost: $11.83 million
($1,037 annually per EDU)

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Alternatives Evaluation

5. Pump Station and Forcemain Conveyance to Monroe County Sewer System (*Disinfection Requirements met by Monroe County SPDES permit*)
   - Abandon Central and South Byron (North Byron remains as/is)
   - Construct three (3) new pump stations (Central Byron, South Byron, intermediate pump station) and send to Monroe County Collection System
   - Assumed connection point would be Churchville Pump Station
   - Pros: Removes 2 outfalls from SPDES permit, along with disinfection requirements
   - Cons: Approx. 10 mile forcemain is cost-prohibitive, crosses several jurisdictions and would require land acquisition, would require approval of Monroe County Pure Waters

Estimated Project Cost: $17.16 million
($1,375 annually per EDU)

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Recommendations

- Alternative #4 - Consolidation of Central and South Byron into one (1) new Wastewater Treatment Plant (including Disinfection Improvements)
- Note: PER recommendation is submitted to NYSEFC in mid-June
- This submittal is for consideration by NYSEFC to provide a funding package to the Town for the project
- Many programs available right now for water infrastructure – great time to achieve long-term solutions (e.g. BIL funds)
- Anticipated to know best available funding by December 2023

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Summary of Estimated Costs

Total Estimated Project Cost	$	11,825,000
Assume 25% WIIA Grant Award	$	2,706,250
WQIP Disinfection Grant Award	$	1,000,000
Assume BIL Grant	$	2,706,250
Remaining Project Costs	$	5,412,500
Assume Hardship Financing:		
Yearly Debt Service @ 0%, n=30 years	$	180,417
Current Sewer EDUs		312.5
Yearly Debt Service Cost per EDU	**$**	**577**
Annual Sewer Rate per EDU	**$115 x 4 = $460**	
Estimated Annual Cost per EDU	**$**	**1,037**

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Project Schedule

July 2023 *– Complete Funding Applications*

August 2023 *- Receive DEC/EFC PER Approval*

December 2023 *- Notice of WIIA/BIL Grant Awards*

Spring 2024 *- Survey/Geotech work*

Begin Engineering Design and Bidding Documents

Spring 2025 *- Start Construction*

Spring 2027 *- Construction Completion*

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Thank You

QUESTIONS?

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