Building Condition Report, Outfall and Upgrades Proposed Implementation Plan

Lunenburg WWTP

Introduction

- This presentation contains a Proposed Implementation Plan for the work identified in the WWTP Building Condition, Outfall, Upgrades, and Expansion project

Outfall Extension Summary

- **Recommendation: Detailed design and construction of a relocated effluent outfall near Burma Rd.**

- **Next Steps:**
  - **Send Predesign report to NSECC**
  - **Confirm with NSECC if a Receiving Water Study (RWS) is required**
  - **Begin RWS if needed, as soon as possible**
  - **Begin discussions around land and water lot access or acquisition.**
  - **Begin regulatory consultation process**
  - **Apply for funding as soon as opportunity allows**
  - **Geotechnical investigation and bathymetric survey**
  - **Detailed design**
  - **Following Regulatory Approval, complete tender and construction**

Outfall Extension Interconnections

- **Consultation and regulatory steps take significant time and should be started as soon as possible to avoid delaying subsequent steps**
- **Construction could be done at any time compared to other steps**
- **Reduced effect on Commercial Fishing Fleet during tie-ins if complete before SBR construction**

Near-Term Upgrades Summary

- **Recommendation: Detailed design and construction of eight of the eleven items investigated**

- **Next Steps:**
  - **Send Predesign report to NSECC**
  - **Detailed design of flood control including Regulatory Approval**
  - **Detailed design of UV disinfection and polymer pumps including Regulatory Approval**
  - **Develop plan for other near-term items relevant to SBR expansion**
  - **Tender and construct UV disinfection and polymer pumps**
  - **Tender and construct flood control**
  - **Detailed design of other near-term items relevant to SBR expansion, as needed prior to expansion**

Near-Term Upgrades Interconnections

Item	When to implement	Interconnections and constraints
Headworks Modifications	2-6 years	During expansion if within 5-6 years
Aeration Upgrades	1-6 years	Inspect and refurbish by Manufacturer's Tech, and if there is 5 years' service life left, replace during expansion if within 5-6 years
Online instrumentation	1-3 years	Consider doing this as soon as Polymer Dosing Trials are complete, for best existing process performance.
Polymer pumps	0-1 year	Not required for SBR upgrades, but process-critical item.
UV upgrades	0-1 year	
Standby generator	3-6 years	During expansion if within 5-6 years
Building mechanical upgrades	1-6 years	Some overlap with Facility Maintenance Items, some items during expansion if within 5-6 years
Flood Control	0-1 year	

Long-Term Expansion Summary

- **Recommendation: Proceed with predesign, including a thorough geotechnical investigation, then detailed design and construction of SBR-based expansion**

- **Next Steps:**
  - **Send Conceptual report to NSECC**
  - **Continue influent sampling**
  - **Saltwater exclusion work plan and implementation**
  - **Sewer separation plan**
  - **Apply for funding as soon as opportunity allows**
  - **Predesign of expansion, including Geotechnical Investigation**
  - **Send Predesign report to NSECC**
  - **Detailed design, regulatory package and approval, tender and construction**

Long-Term Expansion Interconnections

- Can be started right away or once Project Lunenburg initiatives are showing results
- Starting sooner rather than later can reduce costs of near-term items, and also give operational cost savings
- Planning for sewer separation and salt water exclusion are integral to the successful expansion
- Predesign could be carried out with confirmed project funding, or during funding application process
- Geotechnical conditions should be investigated during the predesign to lower project risk

Building Condition Summary

- **Recommendation: Prioritize the 0-5 year recommendations and begin to implement them**

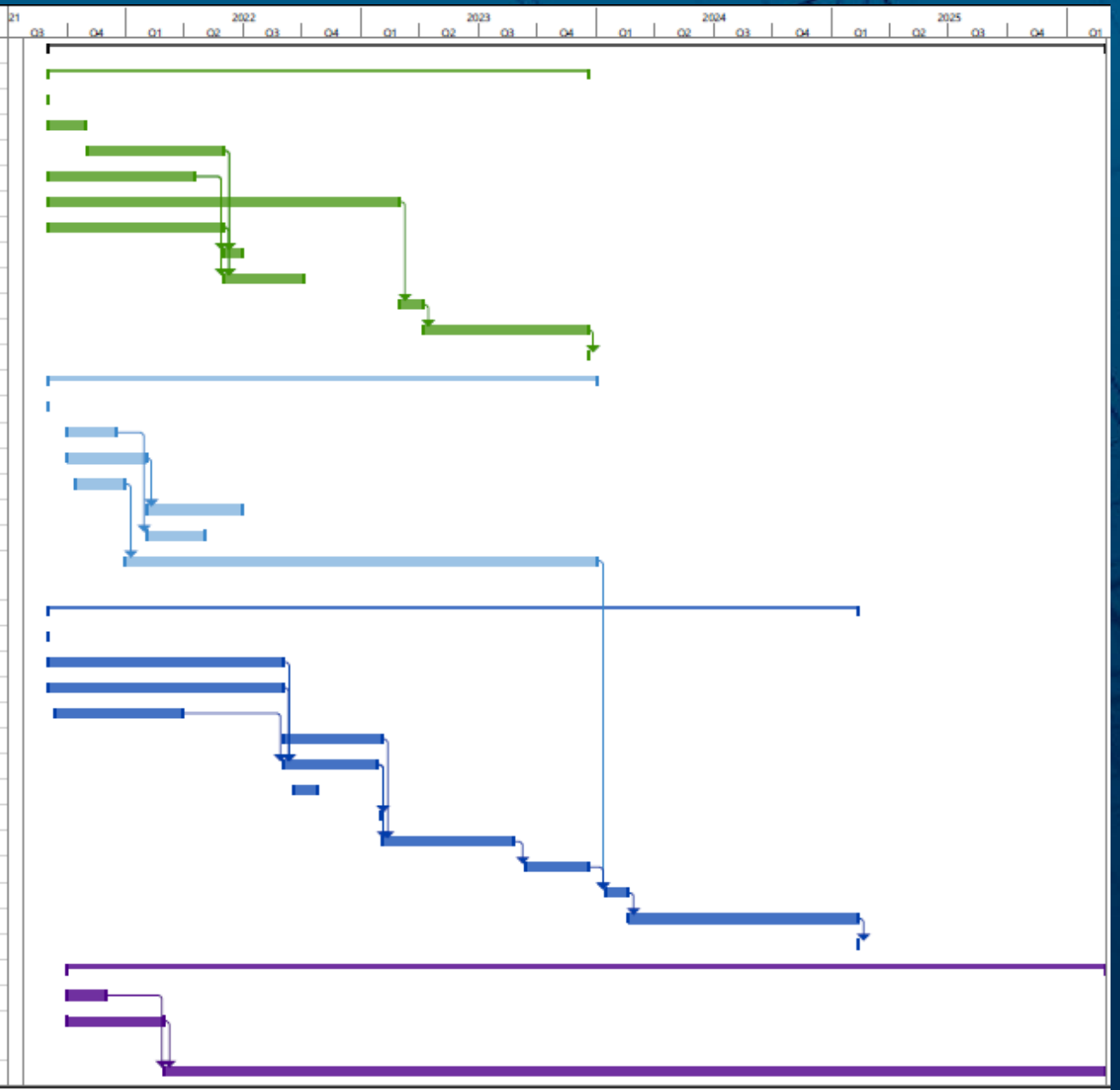
- **Next Steps:**
  - **Plan roof replacement for main process building**
  - **Plan blower room fan replacement, headworks plumbing repairs, and other 0-5 year items**
  - **Implement 0-5 year facility maintenance**

Building Condition Interconnections

- **Process building will continue to be used, so roof replacement has long-term value**
- **Replacement of the blower room supply fan with an exhaust fan and replacement of the headworks service water supply pipework are included in both Near-Term report and BCA; these can be implemented either as Facility Maintenance or as Near-Term process improvements**

Proposed Implementation Schedule

ID	Task Name
1	**TOL WWTP & Outfall Predesign and BCA**
2	**Outfall**
3	Predesign sent to NSECC
4	Receiving water study required?
5	Receiving water study, if needed
6	Obtain land
7	Regulatory consultation, applications, and approval
8	Apply for funding as soon as opportunity allows
9	Geotechnical investigation and bathymetric survey
10	Detailed design
11	Tender construction
12	Construction
13	Operational
14	**Near-Term Upgrades**
15	Predesign sent to NSECC
16	Detailed design of flood control including Regulatory Approval
17	Detailed design of UV disinfection and polymer pumps inc. Reg. App.
18	Develop plan for other near-term items relevant to SBR expansion
19	Tender and construct UV disinfection and polymer pumps
20	Tender and construct flood control
21	Detailed design and construction of other near-term items relevant to SBR expansion, as needed prior to expansion
22	**Long-Term Expansion**
23	Conceptual Report sent to NSECC
24	Continue influent sampling
25	Saltwater exclusion work plan and implementation
26	Develop sewer separation plan
27	Apply for funding as soon as opportunity allows
28	Predesign of expansion
29	Geotechnical Investigation
30	Predesign Report sent to NSECC
31	Detailed design
32	Regulatory package and approval
33	Tender construction
34	Construction
35	Operational
36	**WWTP Facility Maintenance**
37	Plan roof replacement for main process building
38	Plan blower room fan replacement and headworks plumbing repairs, and other 0-5 items
39	Implement 0-5 year facility maintenance



Ongoing related work at WWTP this year

- **Salt Water Intrusion Report recommendations:**
  - **Engineering for the Bluenose Drive pipe repair. Construction is identified in next year's budget look-ahead**
  - **Purchase and installation of check valves at the three pumping stations identified in the report**
- **Sewer separation**
  - **Project #1 of 4 small separation projects. Master Plan is identified in the look-ahead budget for next year.**
- **WWTP Blower replacement:**
  - **Reconsider this project if expansion project will begin soon**
- **Chemical feed pumps replacement**
- **AC unit at the WWTP has been replaced**
- **Polymer dose reduction by staff as time permits**

Any questions?