

Sewer Extension South Liquid Waste Management Plan Addendum  
Joint Technical and Public Advisory Committee  
Meeting #3.5 – March 14, 2023



# Welcome

*The CVRD respectfully acknowledges that the proposed Sewer Extension South Project will be constructed and operated on the unceded traditional territory of the K'ómoks First Nation, the traditional keepers of the lands and waters this project strives to protect.*

# Today's Goals

## ***Decisions*** on:

- On-site Septic System Programs
- Collection System – Gravity/LPS
- Project Phasing / Equity Principles/Costs

## ***More details*** on:

- Value Planning
- Meeting #4

# Meeting #3 Recap

- Minutes
  - Sewer Extension South Project
    - Draft Environmental Impact Study
    - Sewer Service Structure
    - Project Costs
  - Decision Making Process

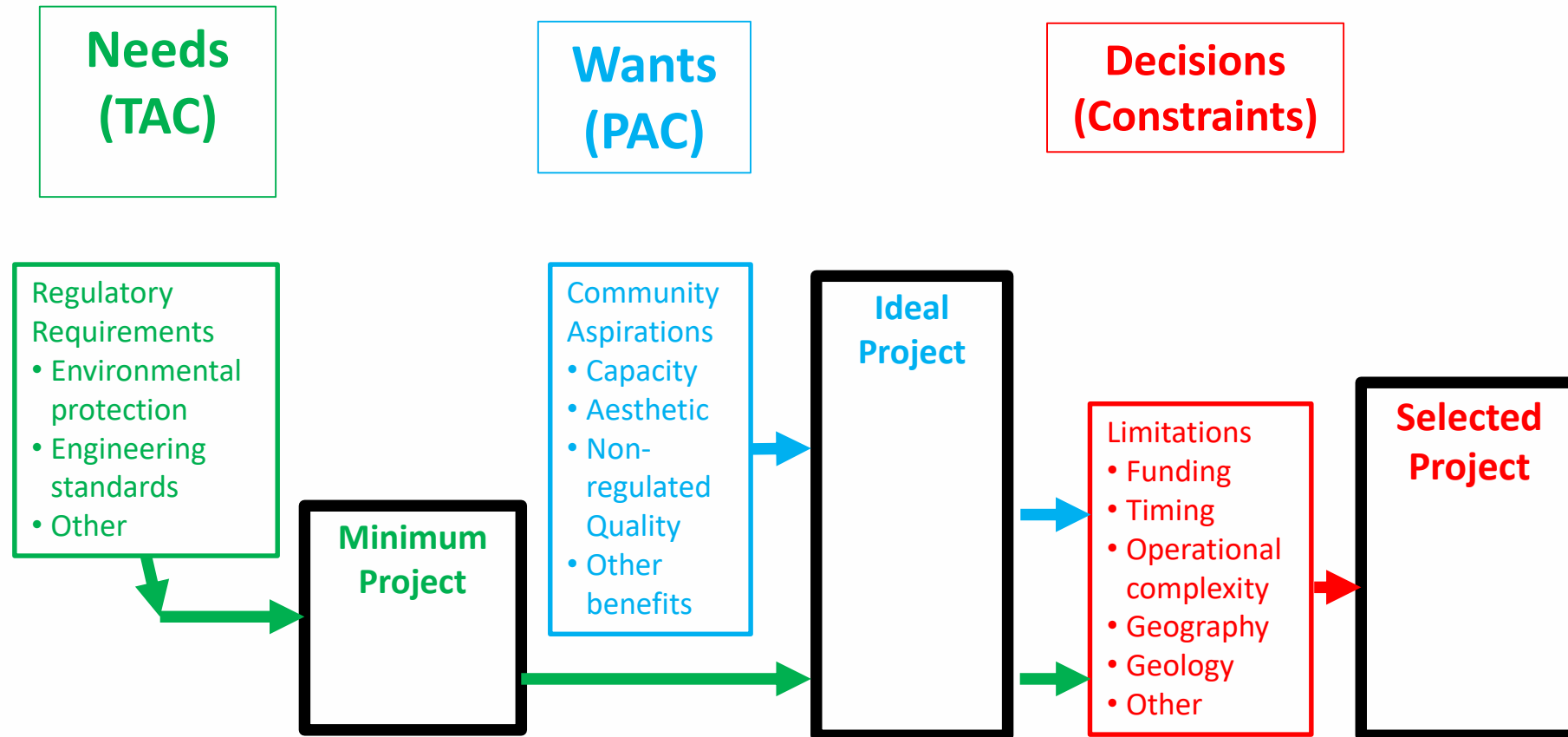
# Meeting #3 Questions

- Briefing notes
- One-time upfront cost - commutation
- Capital improvement cost charges (CICC)
  - Secondary dwellings
  - Financing options

# Committee Decision Points

- Septic Systems
  - Regulatory program, deferral program for new systems
- Collection Systems
  - LPS/gravity hybrid system, additional LPS applications
- Project Phasing/costs
  - Support for Phase 1a, cost equity between phases
  - Overall comments regarding costs

# Reconciling Needs, Wants and Reality



# Questions





# CVRD Updates & Briefing Notes

## Septic Systems



# Briefing Note #1 – Septic vs. Sewer

- Comparison over 50 years
- Type 2 septic systems
- Includes mandatory inspection program
- Sewer – Phase 1a costs presented in December

## Results:

- Community Sewer
  - \$2,000 per year
- Private Septic Systems
  - \$3,060 per year

# Briefing Note #2 – Septic Regulatory Program

- Risk-based approach
  - Mandatory Inspection in higher risk areas
  - Mandatory Pump Out in other areas
- Phased roll-out, initial focus on highest priority areas
  - High-risk areas along Baynes Sound outside of proposed sewer service area
- Electoral Areas Services Committee consideration in Spring 2023

# Briefing Note #2 – Septic Regulatory Program

Year	Description	Cost estimate
1	Assessment of high-risk areas, property owner and industry outreach, identify septic inspector capacity	\$100,000
2	Implement mandatory inspection in highest priority areas (high-risk areas along Baynes Sound, outside of Sewer Extension South proposed service area – Ships Point)	\$250,000
3	Implement mandatory inspection in other high-risk areas (Robinson Lake, Bates Beach, parts of Hornby Island)	\$350,000
4	Continued mandatory inspection roll out (Saratoga Beach, other identified areas, possibly Royston and Union Bay dependent upon status of Sewer Extension South project implementation)	\$450,000
5	Initiate mandatory pump out program in all other areas, continued mandatory inspections in high-risk areas	\$500,000

# Briefing Note #3 – Newer Septic Systems

- Assess options & impacts of deferral program for newer septic systems
- Case Study – City of Langford
- Two options assessed:
  - All septic systems less than 5 years old
  - Type 2 & 3 septic systems less than 5 years old

# Briefing Note #3 – Newer Septic Systems

<b>Deferral Program Option</b>	<b>Impact – Operating Costs only</b>	<b>Impact – Operating &amp; Financing</b>
Five years or newer, Type 2/3 systems	\$30/year	\$110/year
Five years or newer, all systems	\$70/year	\$260/year

- Type 2/3 systems, operating costs only?

# Committee Recommendations – Septic Systems

(1) Does the committee support a septic regulatory program in the plan area?

→ Committee recommendations for program options, timing, phasing.

(2) Does the committee support a sewer connection deferral program?

→ Balance of community need for sewer while providing some financial relief to owners with new septic systems.



# Collection Systems

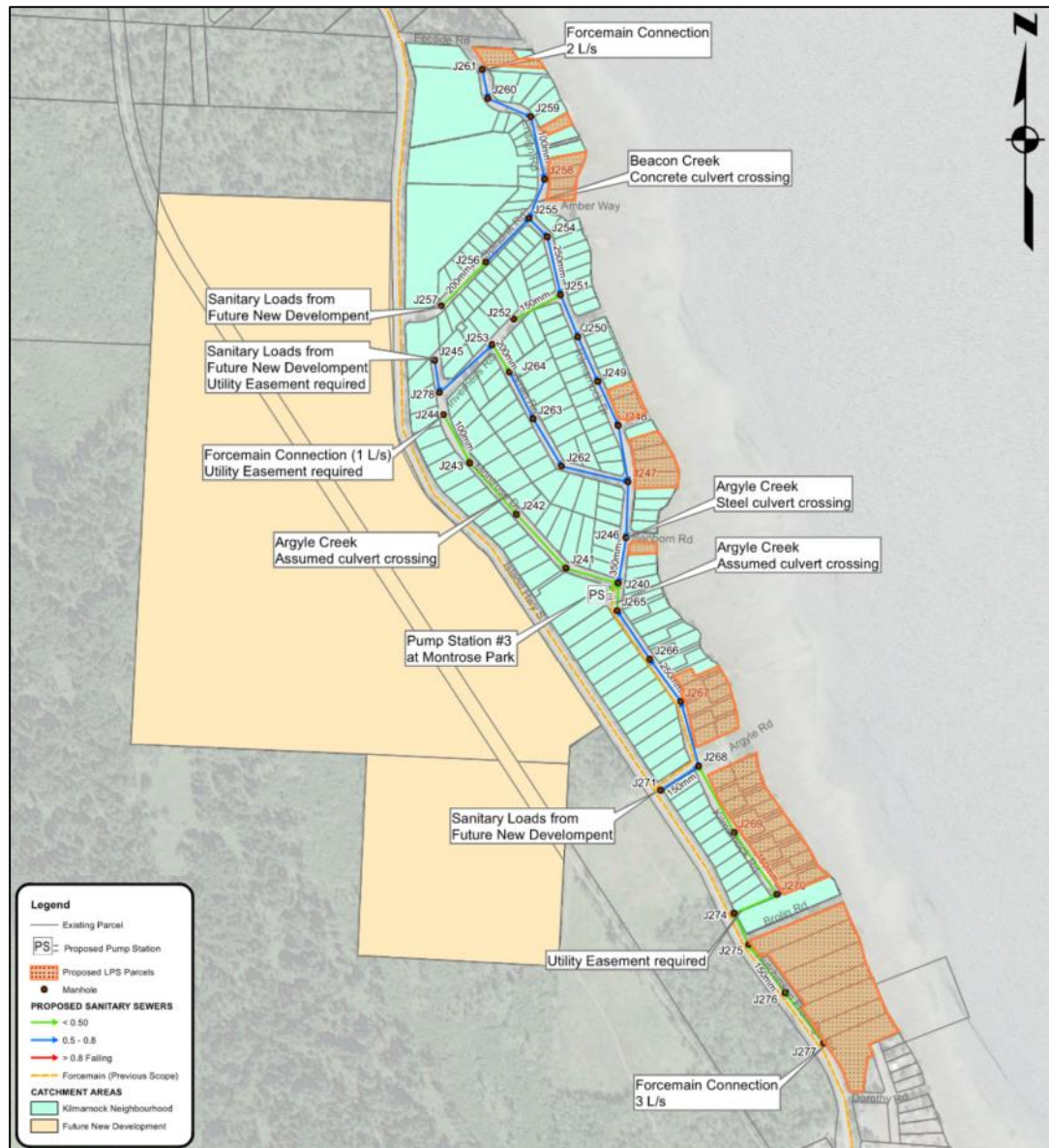
## Kilmarnock, LPS Considerations



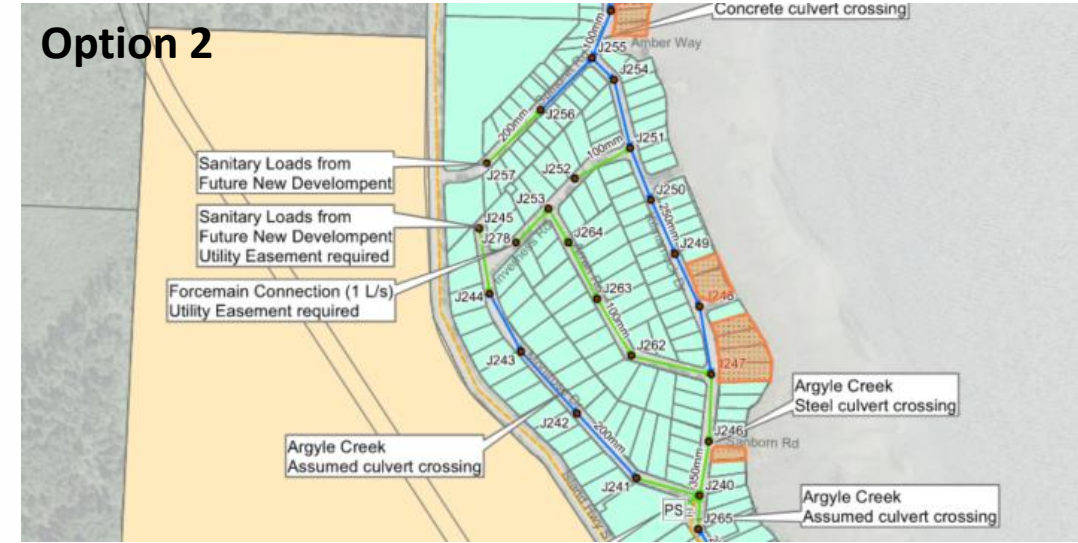
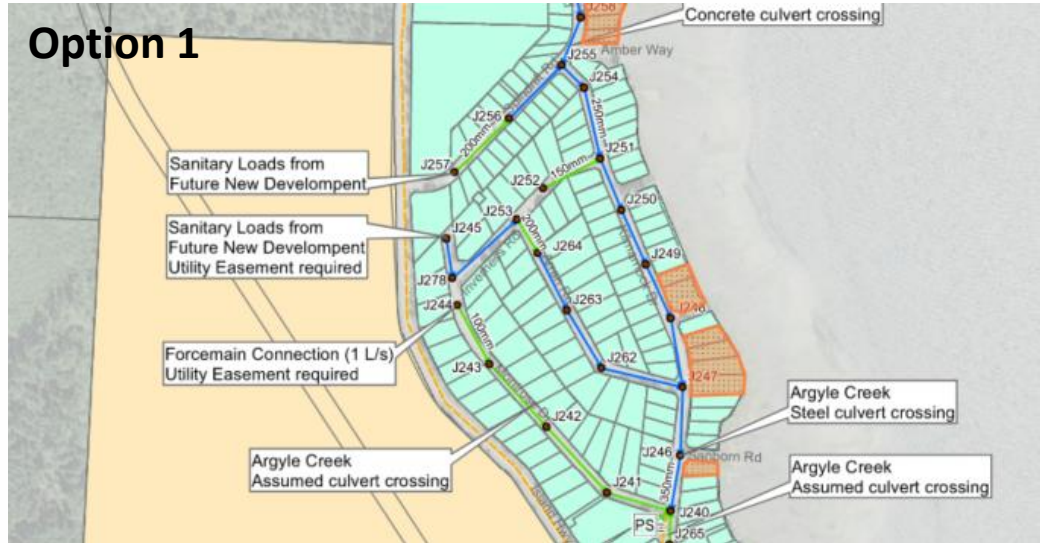


# Kilmarnock Collector System - Design Considerations

- Minimum velocity of 0.6 m/s
- Minimum cover of 1m and maximum cover of 4.5m
- Minimum pipe size of 200mm or 150mm for upstream sections of a residential sewer where future extension is not possible.
- The pipes are designed to be flowing at a maximum capacity of 80%.



# Kilmarnock Collector System



- Pipe Diameter - 100 - 350mm
- Future New Development Sanitary Load connections at 3 locations
- 3 forcemain connections to flush the collector system
- 46 LPS properties connections

# Collector System Cost Estimate

DESCRIPTION	OPTION 1	OPTION 2
Sanitary Sewer- Gravity & LPS	\$ 3,475,000	\$ 3,460,000
Forcemain Connection	\$ 223,000	\$ 223,000
Site Works	\$ 954,000	\$ 949,000
General	\$ 468,000	\$ 466,000
<b>Subtotal All Items</b>	<b>\$ 5,120,000</b>	<b>\$ 5,098,000</b>
Contingency (40% of Subtotal)	\$ 2,048,000	\$ 2,039,000
Engineering (15% of Subtotal + Contingency)	\$ 1,075,000	\$ 1,071,000
<b>Total</b>	<b>\$ 8,243,000</b>	<b>\$ 8,208,000</b>

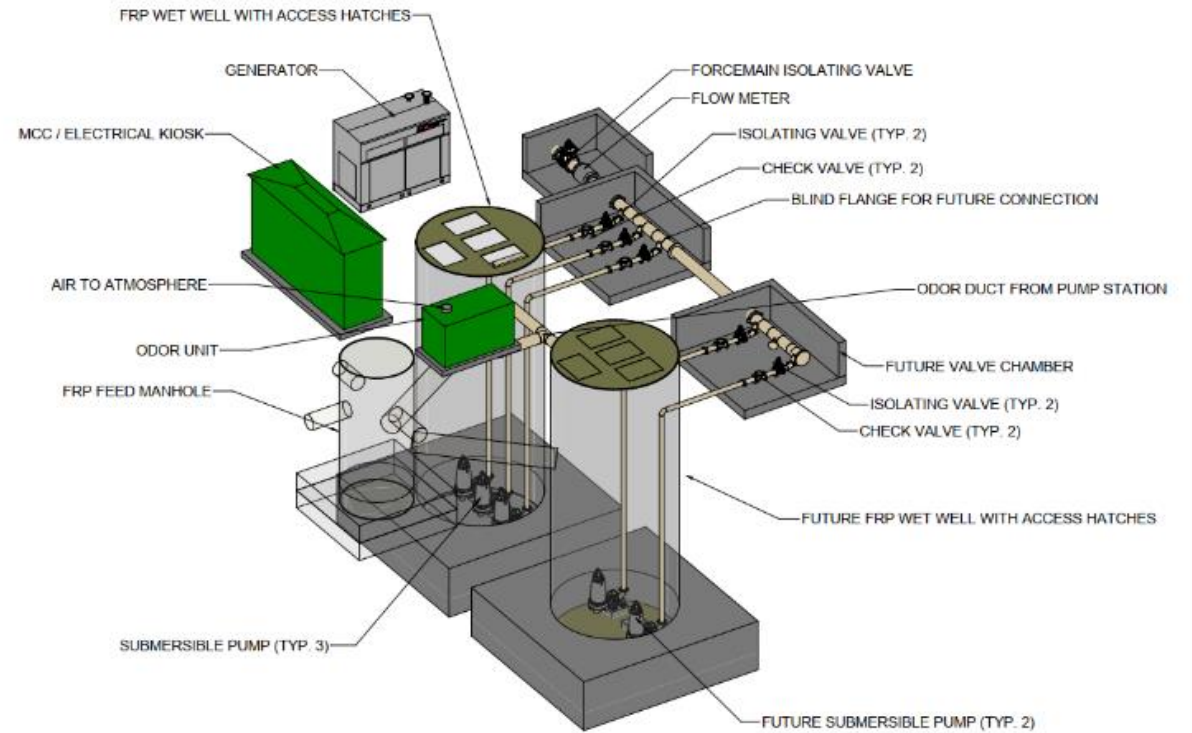


# Pump Station #3 - Kilmarnock

- Siting Considerations
  - 2016 Report recommended PS#3 to be located in Montrose Park.
  - Option 1 is within the Coastal Flooding Zone



# Pump Station #3



# Pump Station Cost Estimate

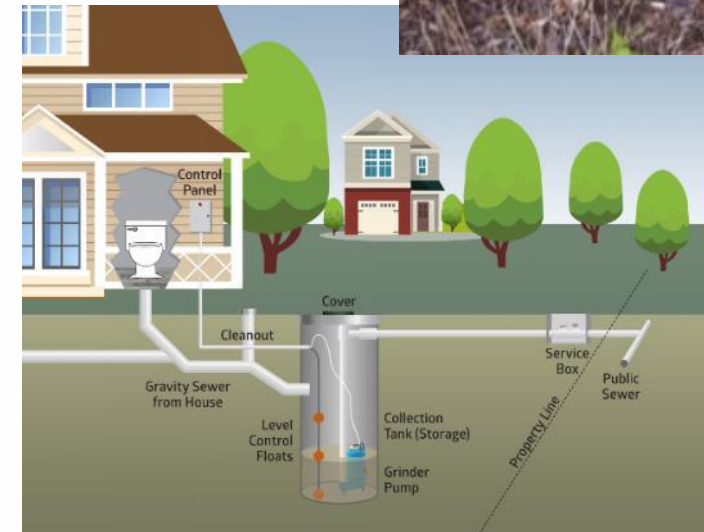
DESCRIPTION	OPTION A
Earthworks and Site Works	\$ 79,000
Building	\$ 100,000
Mechanical	\$ 483,000
Electrical	\$ 462,000
General (Pump Stations)	\$ 230,000
<b>Subtotal All Items</b>	<b>\$ 1,354,000</b>
Contingency (30% of Subtotal)	\$ 406,000
Engineering (15% of Subtotal + Contingency)	\$ 264,000
<b>Total</b>	<b>\$ 2,024,000</b>

# Questions/Comments



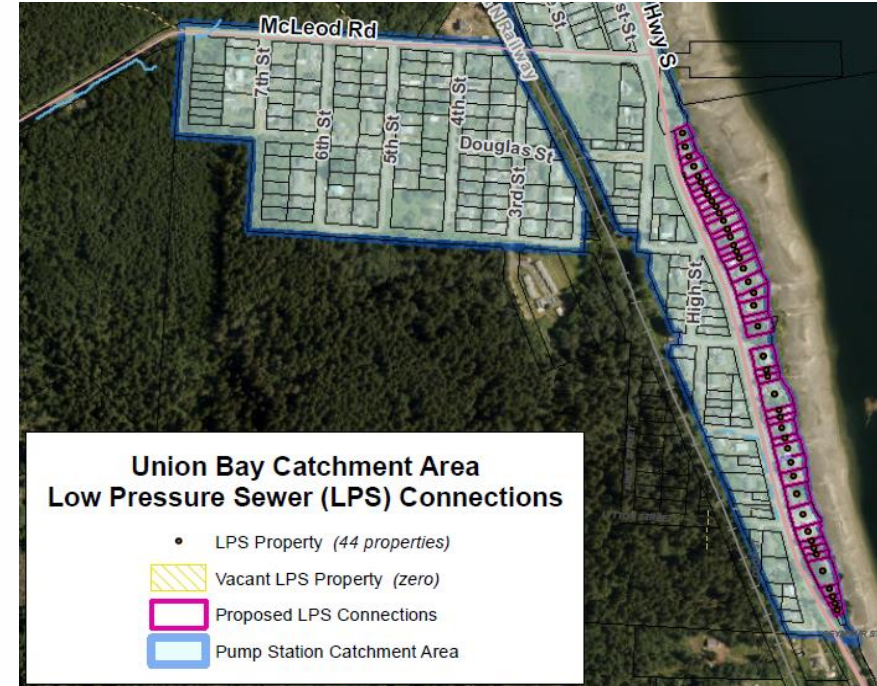
# Briefing Note #4 – LPS Considerations

- Waterfront – no sewer infrastructure on foreshore
- Limit excavation depths for gravity mains
- Proposed reliability/cost equity measures
  - CVRD to provide pump-outs for LPS properties during prolonged power outages
  - Initial LPS pump supply/install included as part of overall project cost
  - CVRD to maintain inventory of LPS pumps to provide at cost when replacement needed





# Proposed LPS connections



# Committee Recommendations – Collection System

(3) Which of the collection options does the TAC/PAC prefer? (or in order of preference)

- Hybrid Gravity/LPS
- Gravity
- LPS Grinder Pumps

(4) For Hybrid Gravity/LPS option:

- Support of LPS to minimize installation of infrastructure along the foreshore, limit excavation depths?
- Other applications where LPS should be considered?

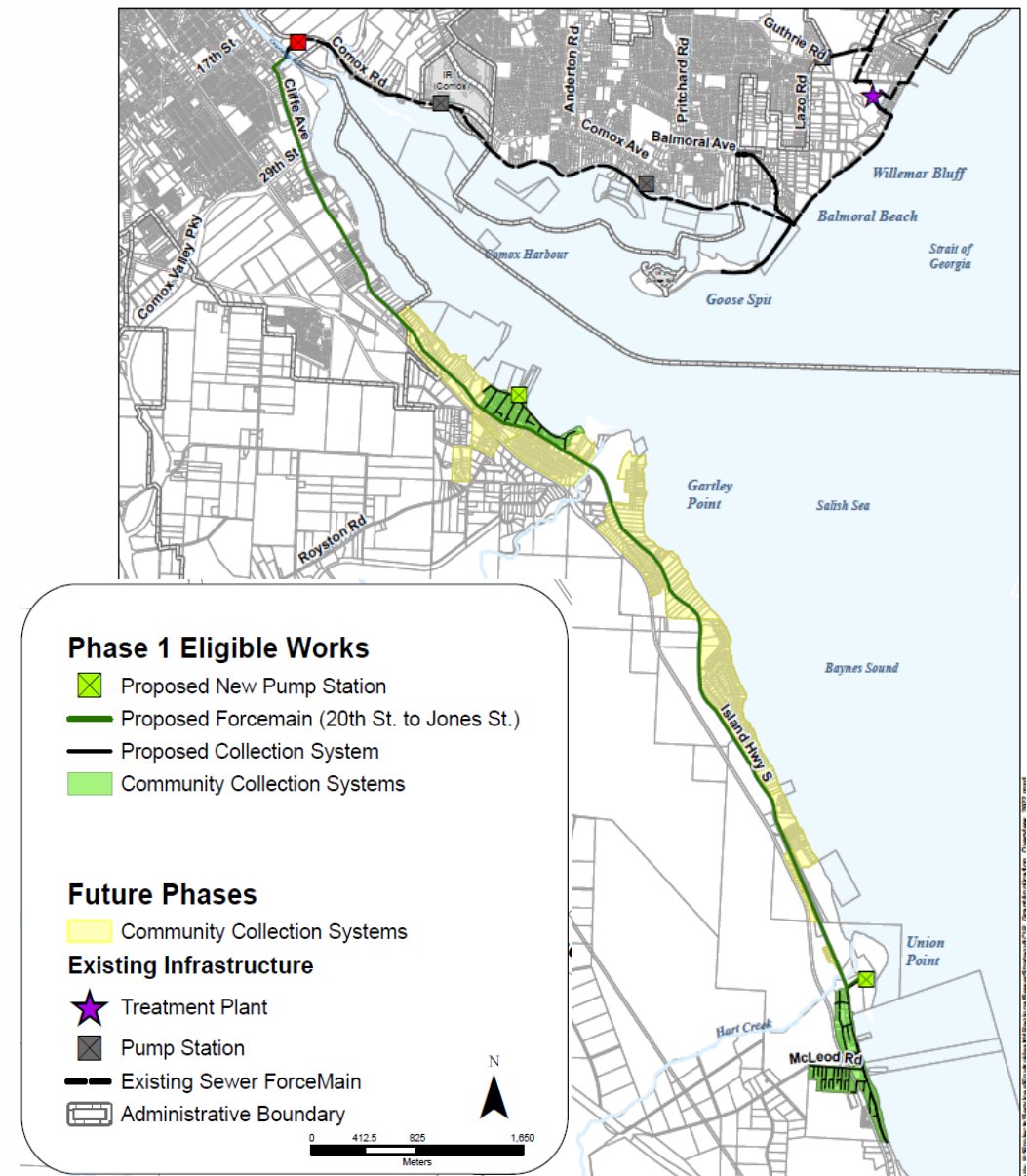


# Project Phasing



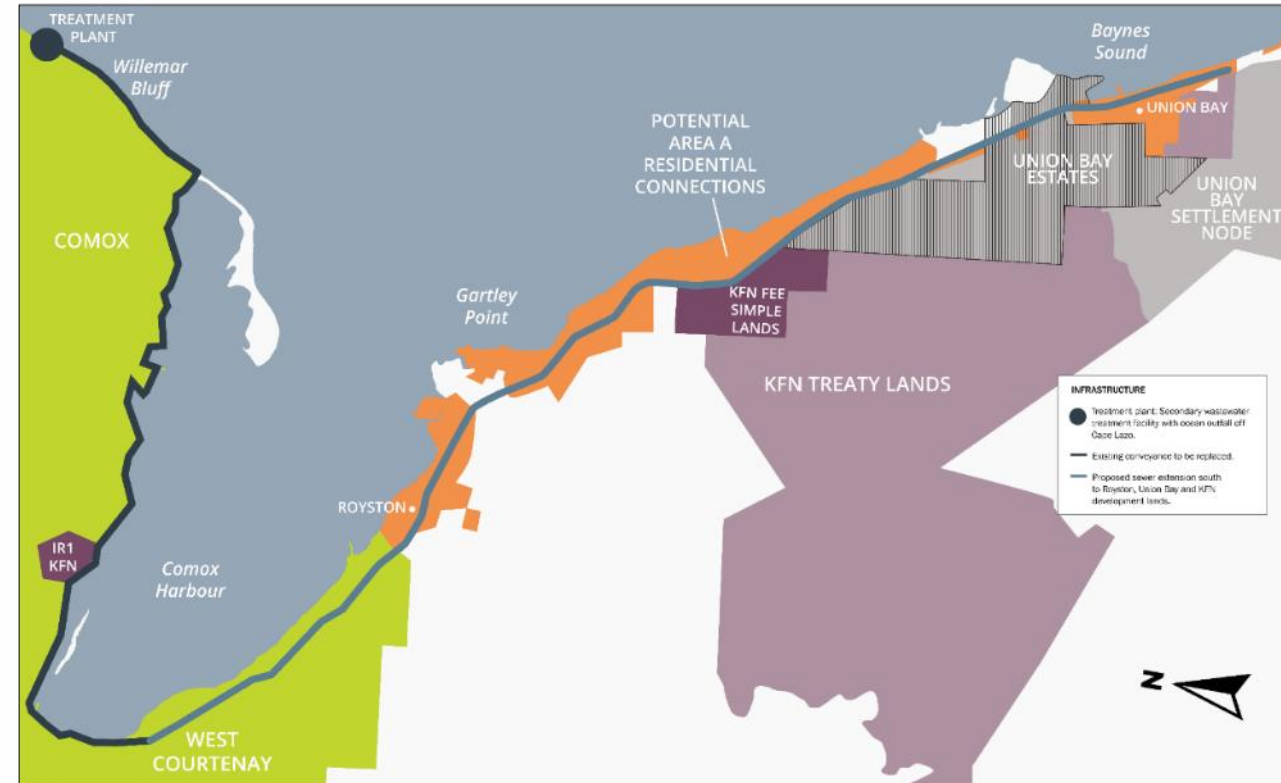
# Briefing Note #5 - Phase 1a Rationale & Methodology

- Historic core of Union Bay & Royston
- Environmental need
  - Oldest septic systems
  - Smallest lots
- Technical considerations
- Project funding



# Briefing Note #6 - Project Phasing Equity Considerations

- Future grant funding could allow for cost equity
- Many uncertainties → timing, inflation, grant success
- Suggest policy statements added to plan to address inequities



# Committee Recommendations – Phasing/Costs

(5) Does the TAC/PAC support Phase 1a as proposed?

(6) What policy statements would the TAC/PAC like to see added to the plan to address cost equity between phases?

(7) Other TAC/PAC comments regarding costs.



# Value Planning



# Briefing Note #7 – Value Planning Summary

- 60 ideas generated by value management team
- Four advanced for further consideration
  - Use the E&N rail corridor for the forcemain alignment
  - Modify sewer loading design criteria to reduce sizes
  - Use majority of native soil as backfill material
  - Move pump stations above coastal flood level
- Technical Memo in development
  - Presented to Steering Committee this spring



# Next Steps



# Next Steps - Summary

- May - PACTAC Recommendations - Steering Committee
- June - Public Open Houses – in-person & online
- July/August - Project team – develop draft Addendum report
  - Including Class ‘C’ estimates
- September 13, 2023 - PACTAC Meeting #4
  - Review draft Addendum report & estimates

# Round Table

Discussion / Questions

