

# Engineering Capital Works Plan

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2024

# Introduction

Thank you for reviewing the 2024 Engineering & Public Works Department's annual Capital Works Plan, which outlines the District's infrastructure priorities for water, sewer, active transportation, roads, and sidewalks.

## Objective

**THAT the Engineering Capital Works Plan dated February 26, 2024, be received as information by Council.**

# Overview

Project Phases

Capital Project Delivery

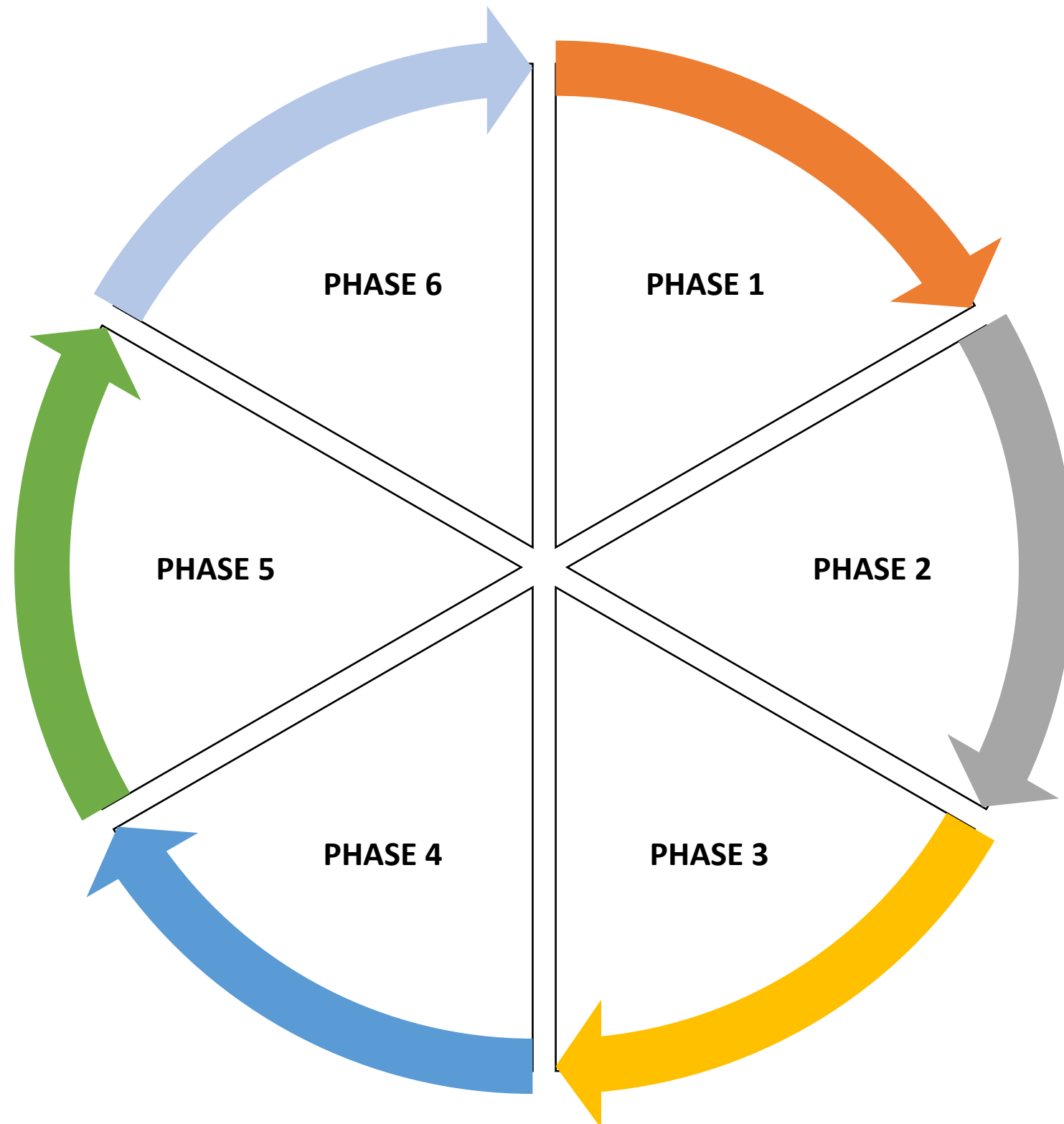
Capital Projects

- Water
- Sanitary Sewer
- Storm Sewer
- Active Transportation
- Miscellaneous Capital

Asset Management Summary

Reports and Studies

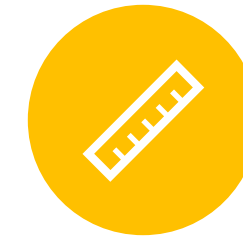
# Project Phases



**PROJECT INITIATION**



**PROCUREMENT FOR CONSULTANT**



**DESIGN**



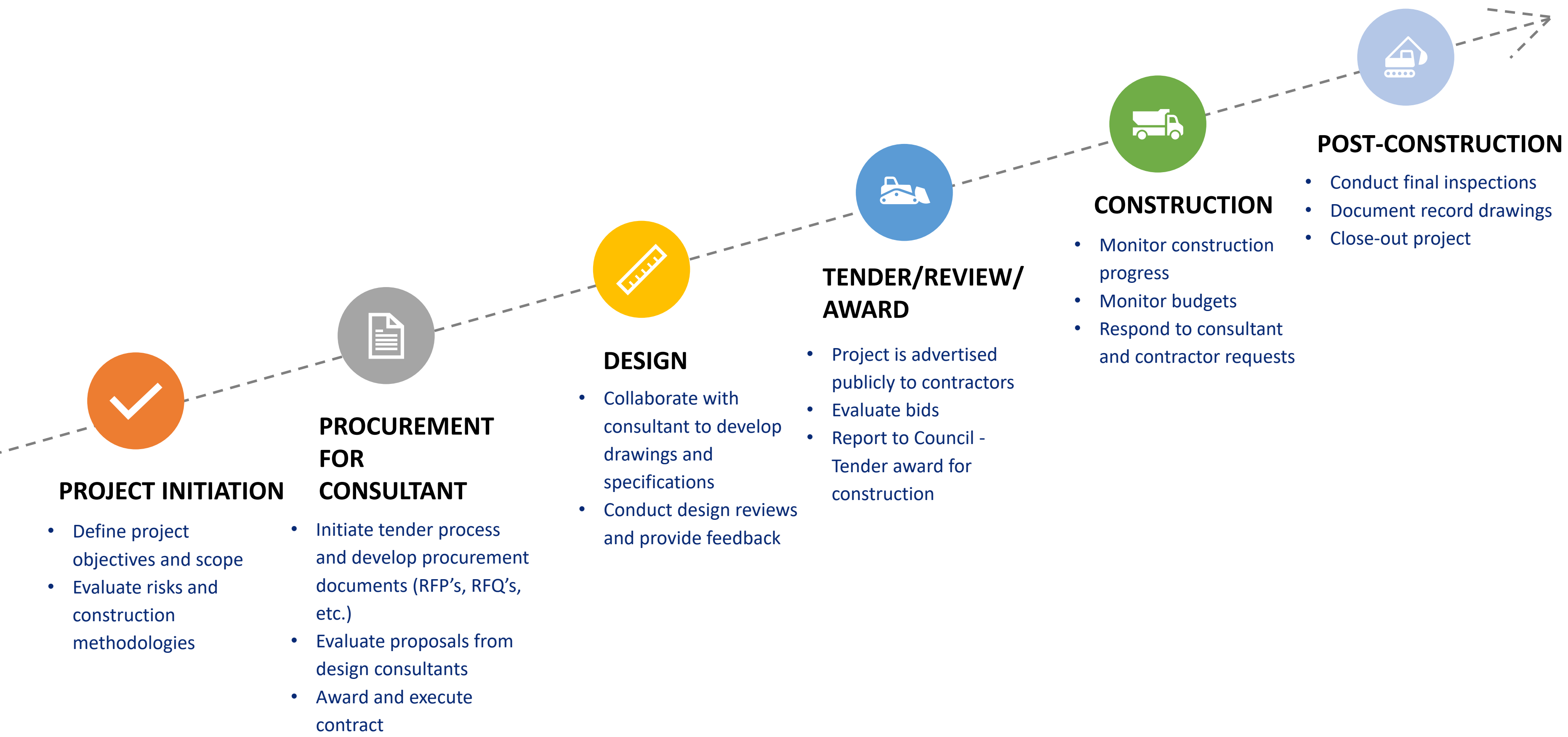
**TENDER/REVIEW/AWARD**



**CONSTRUCTION**



**POST-CONSTRUCTION**



### PROJECT INITIATION

- Define project objectives and scope
- Evaluate risks and construction methodologies



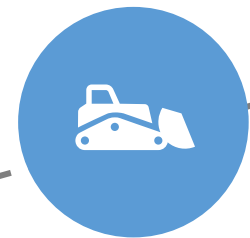
### PROCUREMENT FOR CONSULTANT

- Initiate tender process and develop procurement documents (RFP's, RFQ's, etc.)
- Evaluate proposals from design consultants
- Award and execute contract



### DESIGN

- Collaborate with consultant to develop drawings and specifications
- Conduct design reviews and provide feedback



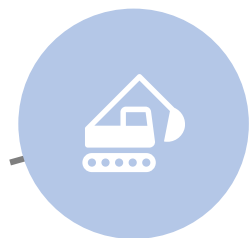
### TENDER/REVIEW/AWARD

- Project is advertised publicly to contractors
- Evaluate bids
- Report to Council - Tender award for construction



### CONSTRUCTION

- Monitor construction progress
- Monitor budgets
- Respond to consultant and contractor requests



### POST-CONSTRUCTION

- Conduct final inspections
- Document record drawings
- Close-out project

# Cost Estimate Definitions

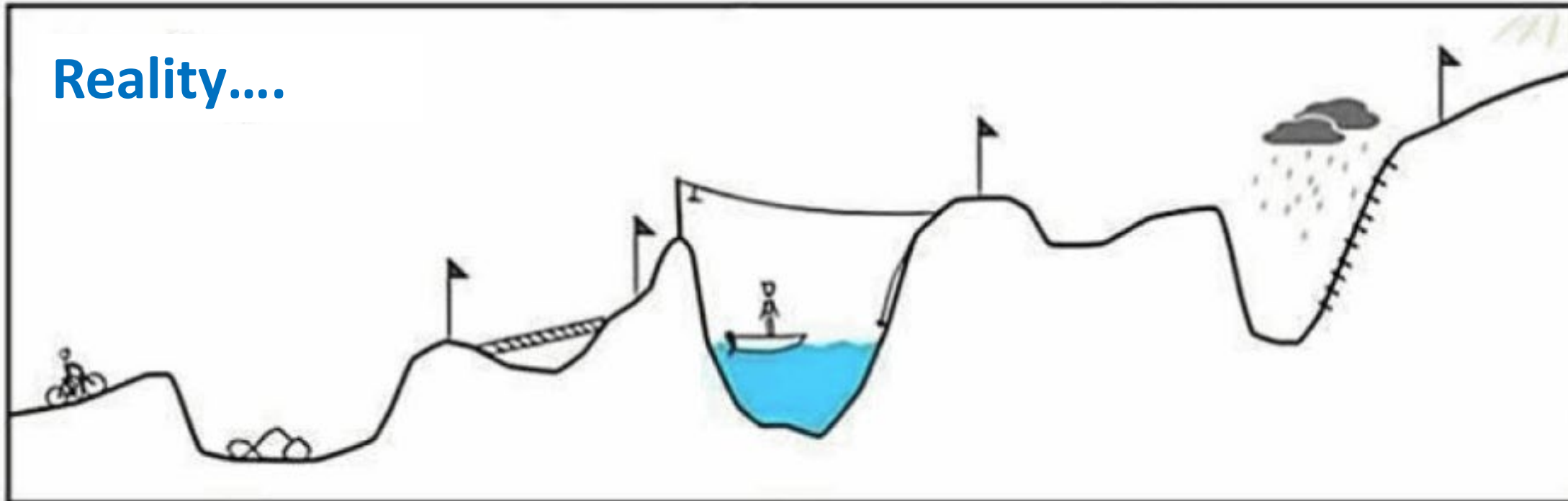
Cost Estimate Class	Project Milestone	Accuracy
Class D	Based on early project scope definitions and screening of options. Prepared at the <i>beginning</i> of the "Design" phase.	30 to 50%
Class C	Based on completed Preliminary Design Drawings	20 to 30%
Class B	Based on completed Detailed Design Drawings	15 to 20%
Class A	Based on completed Issued for Construction Drawings. Typically called a "Pre-Tender" estimate. Prepared at the <i>end</i> of the "Design" phase.	5 to 10%

# Capital Project Delivery

## Expectations



## Reality....



- Minimize and mitigate the “valleys”
- Target and capitalize on the “peaks”

# The “Peaks”



Timely Delivery of  
Material



Early Identification of  
Conflicts



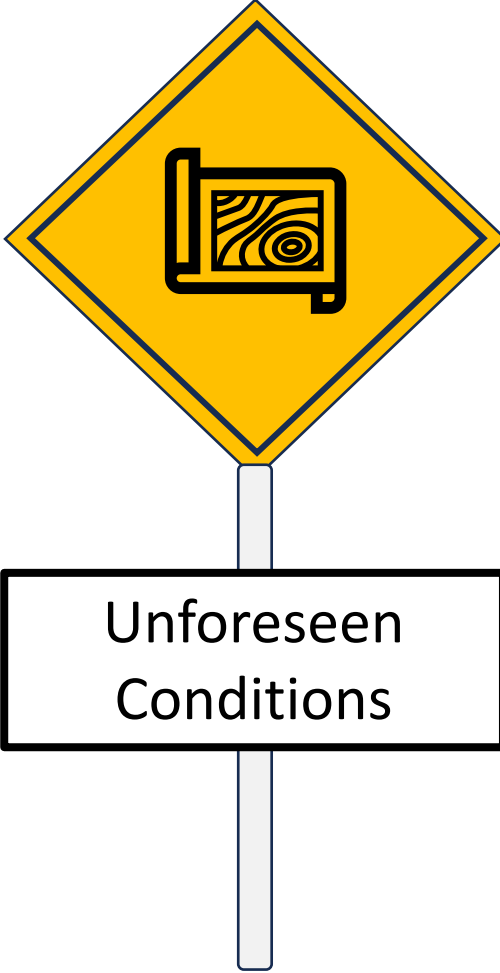
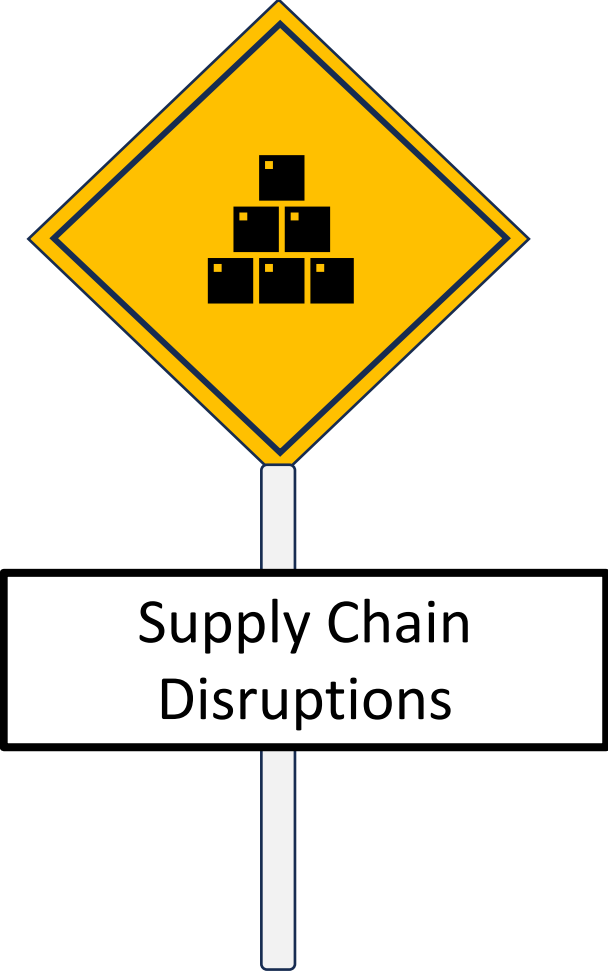
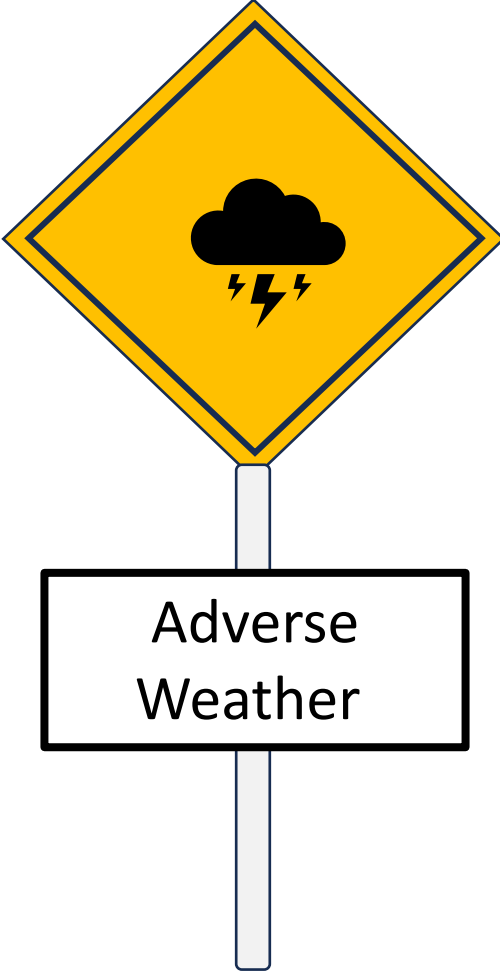
Innovative Designs



Consistent  
Standards



# The “Valleys”



# Balancing the Peaks and Valleys

## Comprehensive Design Phase

Overall Lower Costs



Optimized Designs



Lower Risk During Construction



## Compressed Design Phase

Higher Risk During Construction



Rushed Designs



Overall Higher Costs

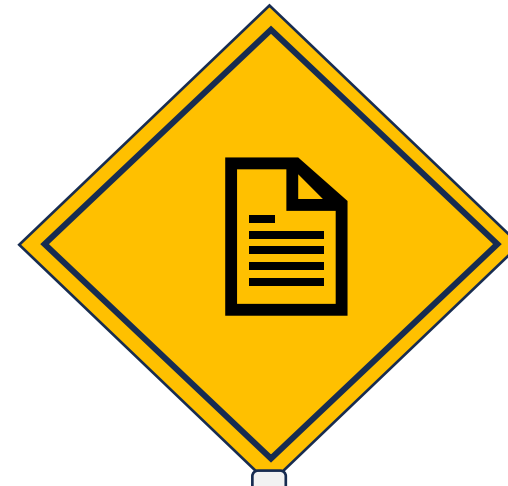
**Risks** include potential schedule delays, changes in scope, and unforeseen conditions

# Additional Elements to Consider



Public Engagement

- Always required for Active Transportation Projects
- While a valuable process, this will add additional time to the project



Grant Applications

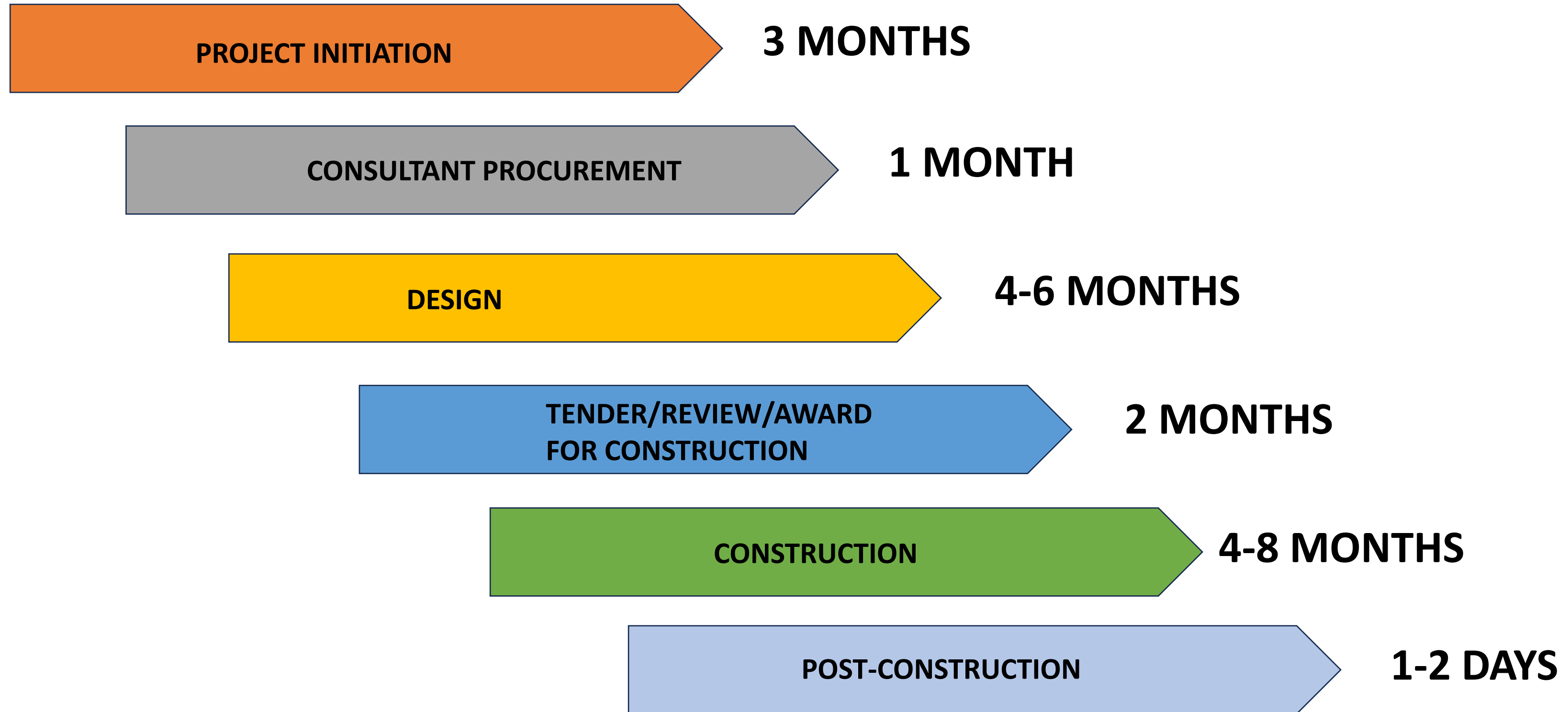
- Will delay start of construction depending on application complexity and notice of award timing
- Increases reporting requirements



External Resource Constraints

- Resource availability can impact project timing and cost
- Impacted by high demand and low supply of contractors/consultants

# Typical Project Timeline



# 2024 Water Capital Projects

- Oliver Street Water Main Replacement (Phase 2)
- Topp Avenue Water Main Replacement
- Cadboro Bay and Thompson Water Main
- McNeill Avenue Utility Upgrades
- Uplands Water Mains (Norfolk, Exeter, and Ripon)



# Oliver Street Water Main (Phase 2)

## Project Phases

## Rationale

## Overview Map



### PROJECT INITIATION

COMPLETE



### PROCUREMENT FOR CONSULTANT

COMPLETE



### DESIGN

COMPLETE



### TENDER/REVIEW/AWARD

N/A – WORK BY PUBLIC WORKS



### CONSTRUCTION

NOT STARTED (MAY TO AUGUST)



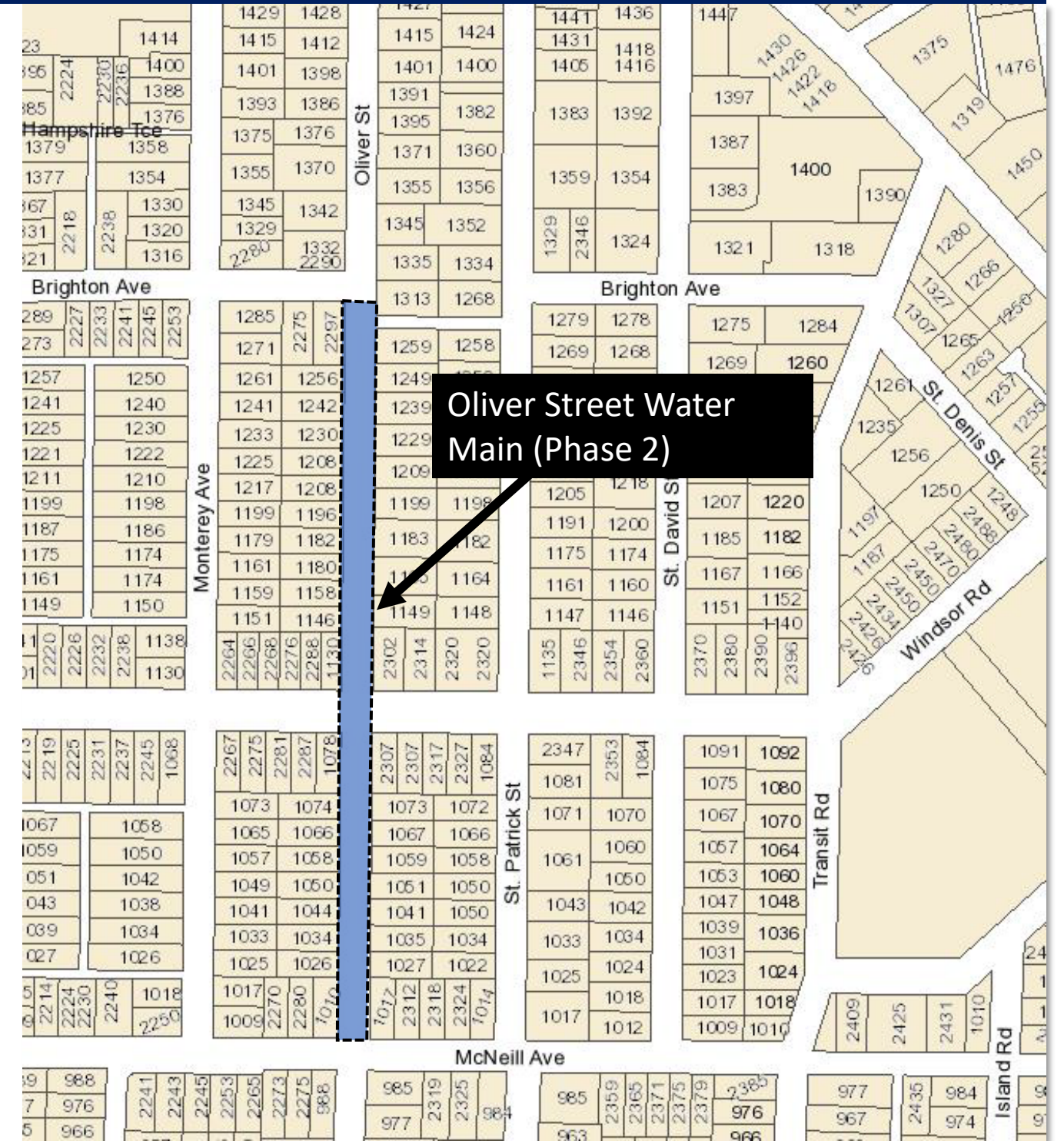
### POST-CONSTRUCTION

NOT STARTED

Improved domestic use and fire flow supply by increasing pipe size

Replacement driven by physical characteristics and age of existing pipes

Project extends from McNeill Avenue to Brighton Avenue



# Topp Avenue Water Main Replacement

## Project Phases

## Rationale

## Overview Map



### PROJECT INITIATION

COMPLETE



### PROCUREMENT FOR CONSULTANT

COMPLETE



### DESIGN

COMPLETE



### TENDER/REVIEW/AWARD

N/A – WORK BY PUBLIC WORKS



### CONSTRUCTION

NOT STARTED (JUNE TO SEPT)



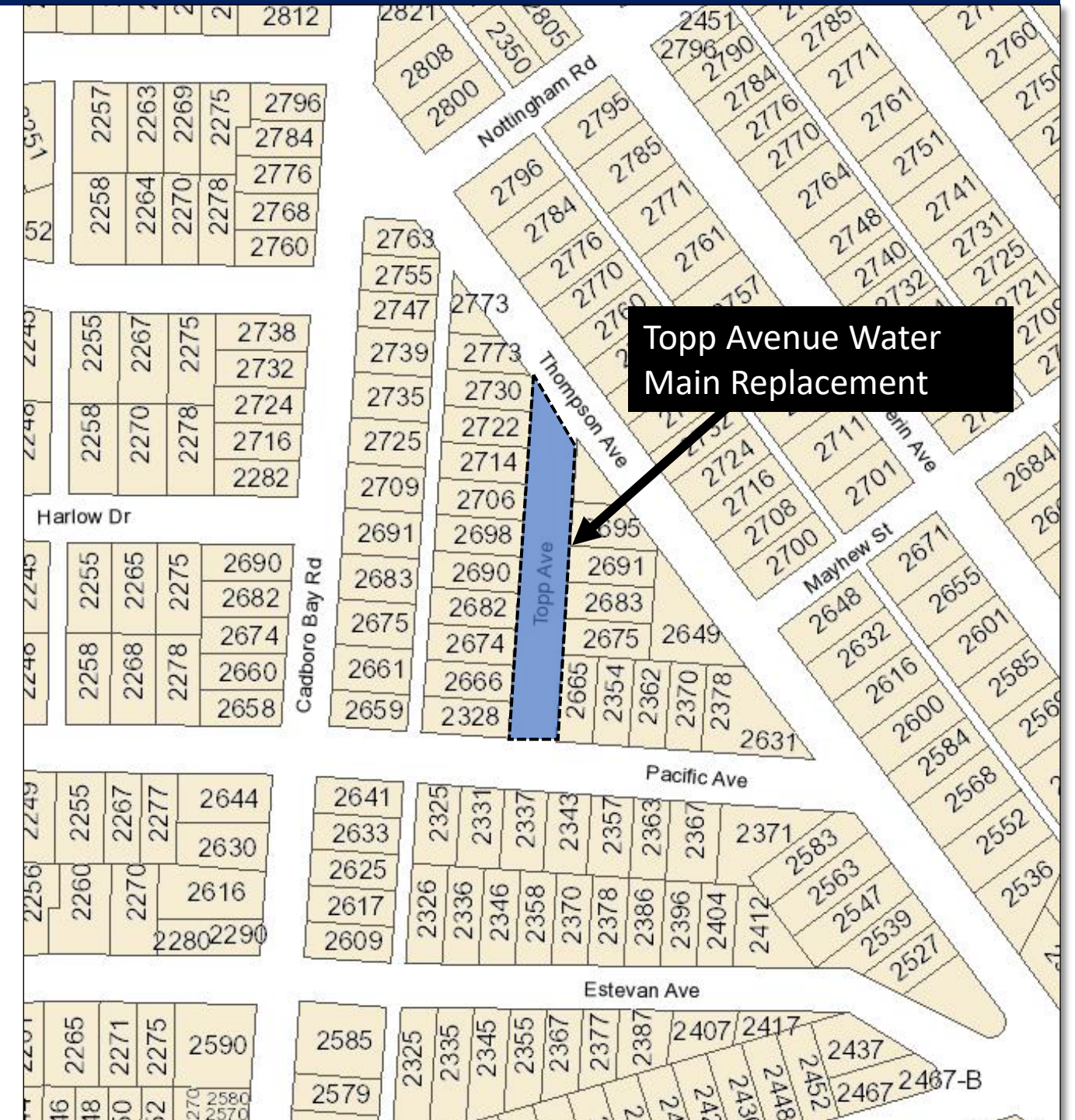
### POST-CONSTRUCTION

NOT STARTED

Water upgrade to improve domestic use and fire flow supply by increasing pipe size

Replacement driven by physical characteristics and age of existing pipes

Storm sewer upgrade to improve drainage conveyance



# Cadboro Bay and Thompson Water Main

## Project Phases

## Rationale

## Overview Map



### PROJECT INITIATION

COMPLETE

Underground deep utility work (water, storm, sewer) required before surface work improvements



### PROCUREMENT FOR CONSULTANT

COMPLETE

Improve domestic water supply and fire flow supply



### DESIGN

COMPLETE

Lengthen life of sewer main and decommission storm sewer



### TENDER/REVIEW/AWARD

NOT STARTED



### CONSTRUCTION

NOT STARTED



### POST-CONSTRUCTION

NOT STARTED





# McNeill Avenue Utility Upgrades

## Project Phases

## Rationale

## Overview Map



### PROJECT INITIATION

COMPLETE

Underground utility work (water, storm, sewer) required before surface work improvements



### PROCUREMENT FOR CONSULTANT

ONGOING – IN TENDER PROCESS



### DESIGN

NOT STARTED

Improved domestic use and fire flow supply by increasing pipe size



### TENDER/REVIEW/AWARD

NOT STARTED



### CONSTRUCTION

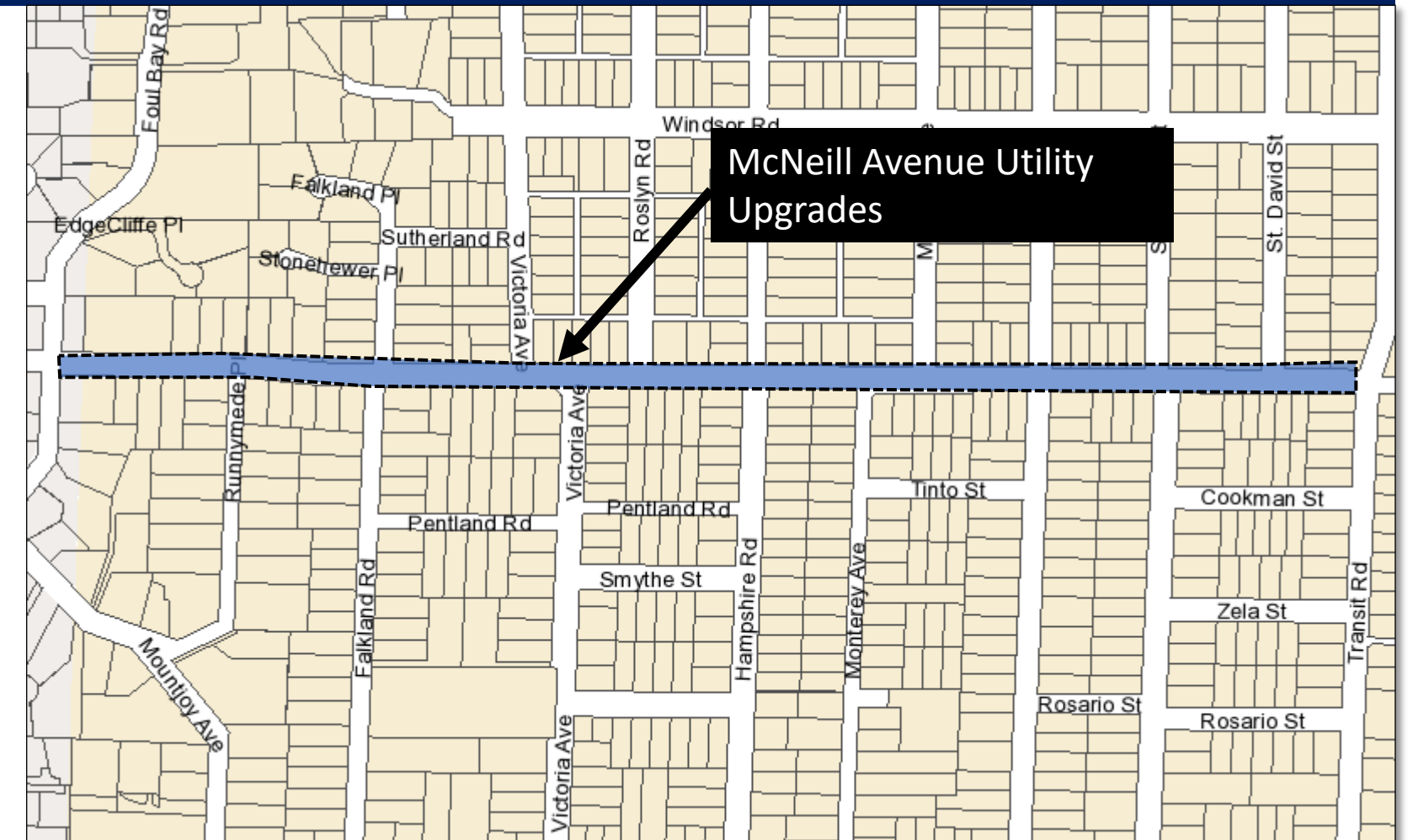
NOT STARTED

Allow for decommissioning of watermain on Hampshire Road that has a history of breaks



### POST-CONSTRUCTION

NOT STARTED



# Uplands Water Mains (Norfolk, Exeter, and Ripon)

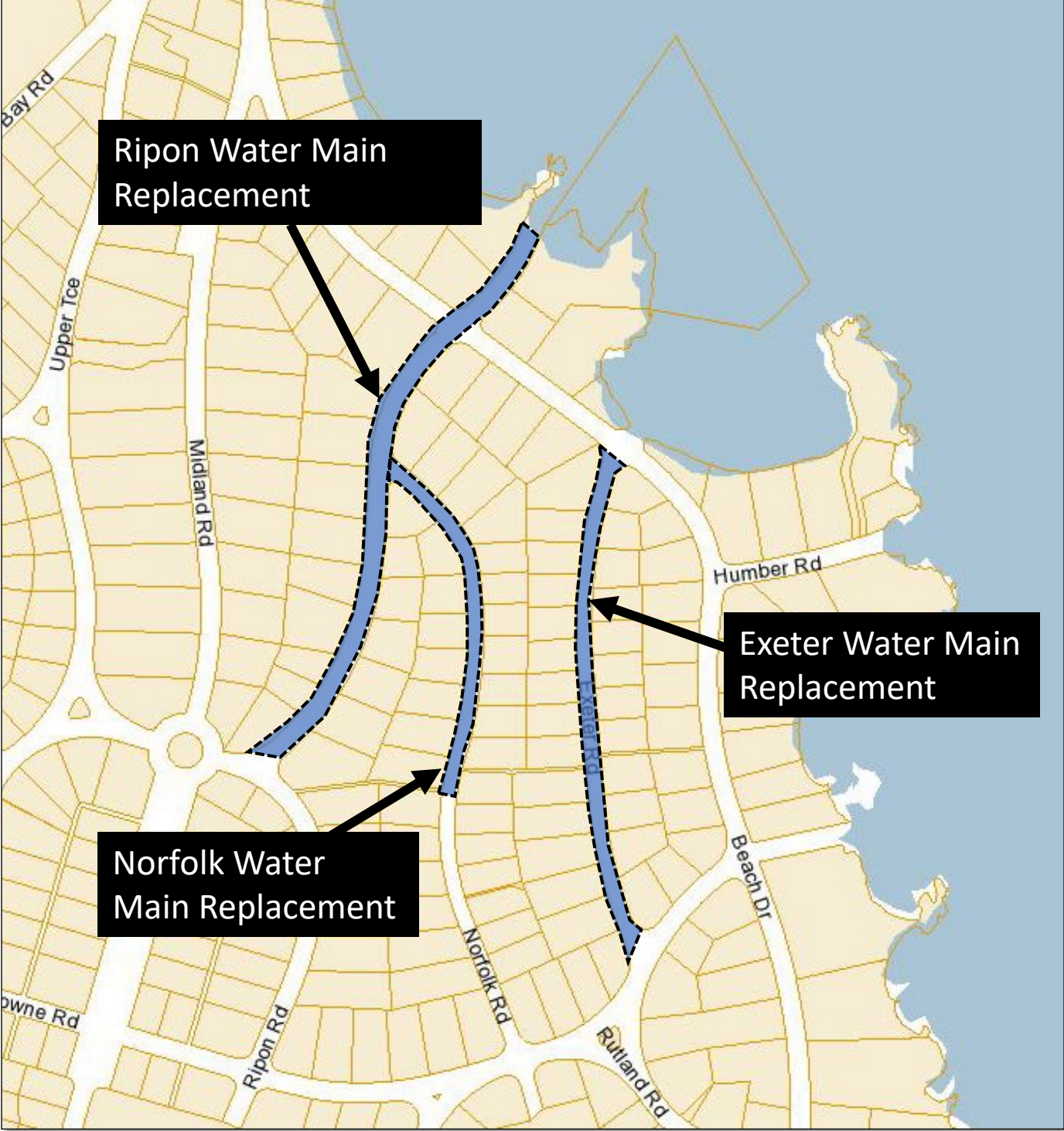
## Project Phases                      Rationale                      Overview Map

- 
**PROJECT INITIATION**  
 COMPLETE
- 
**PROCUREMENT FOR CONSULTANT**  
 COMPLETE
- 
**DESIGN**  
 COMPLETE
- 
**TENDER/REVIEW/AWARD**  
 COMPLETE
- 
**CONSTRUCTION**  
 NOT STARTED (COMPLETION BY 2025)
- 
**POST-CONSTRUCTION**  
 NOT STARTED (COMPLETION BY 2025)

Improve domestic use and fire flow supply by increasing pipe size

Improvement in water quality

Replacement of asbestos/cement water main on Norfolk Road



# 2024 Sanitary Sewer Capital Projects

- Dalhousie Sanitary Sewer Replacement
- Currie Road Sanitary Sewer Replacement
- Florence Street Sanitary Sewer Replacement



# Dalhousie Sanitary Sewer Replacement

## Project Phases

## Rationale

## Overview Map



**PROJECT INITIATION**  
COMPLETE



**PROCUREMENT FOR CONSULTANT**  
COMPLETE



**DESIGN**  
COMPLETE



**TENDER/REVIEW/AWARD**  
COMPLETE



**CONSTRUCTION**  
ONGOING (COMPLETION BY APRIL 2024)

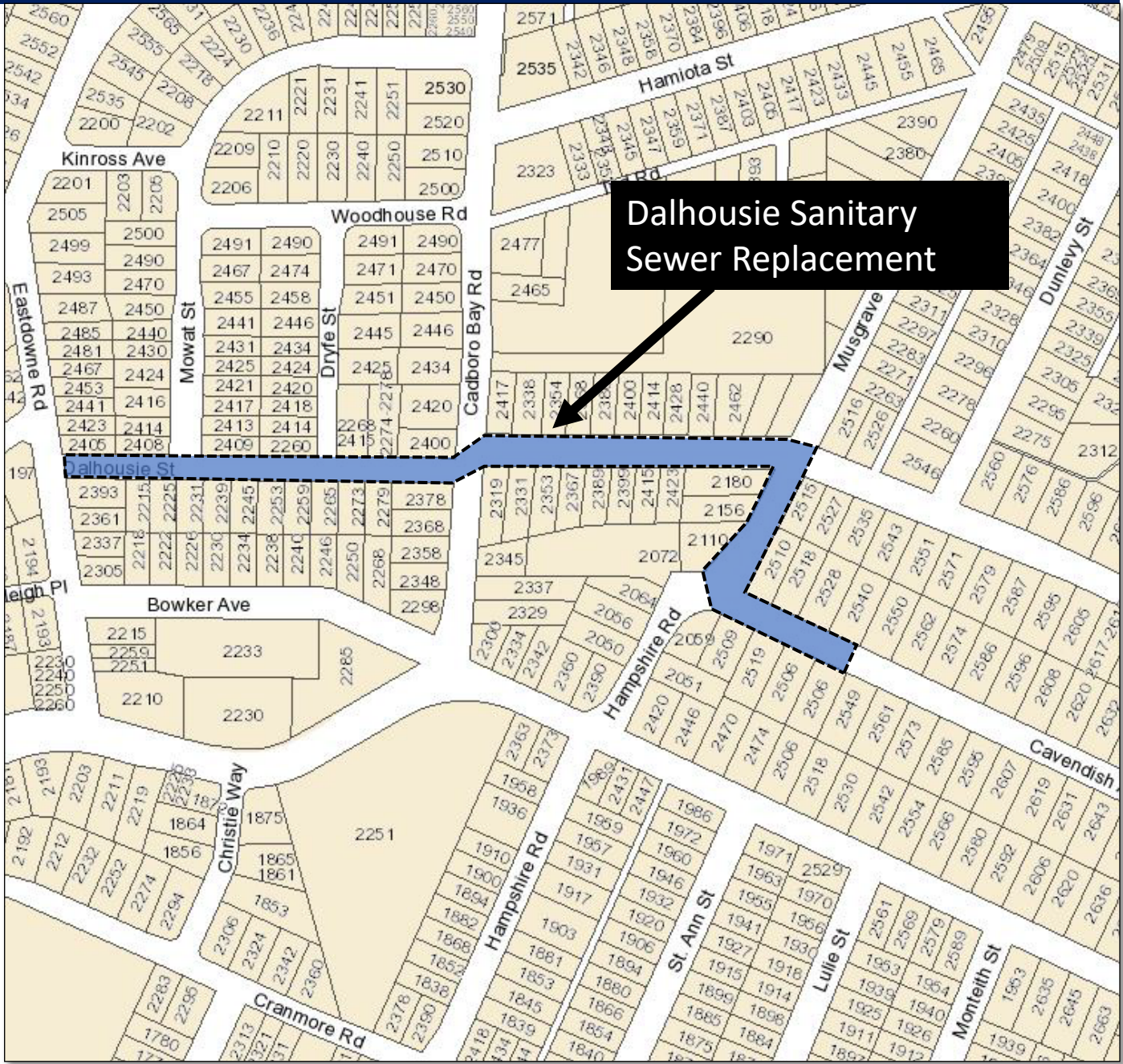


**POST-CONSTRUCTION**  
NOT STARTED

Sanitary sewer and storm sewer upgrade based on recommendations from reports

Address hydraulic capacity concerns of existing pipes

Address structural condition concerns of existing pipes



# Currie Road Sanitary Sewer Replacement

## Project Phases

## Rationale

## Overview Map



**PROJECT INITIATION**  
COMPLETE



**PROCUREMENT FOR CONSULTANT**  
COMPLETE



**DESIGN**  
ONGOING



**TENDER/REVIEW/AWARD**  
NOT STARTED



**CONSTRUCTION**  
NOT STARTED (COMPLETION BY NOV 2024)

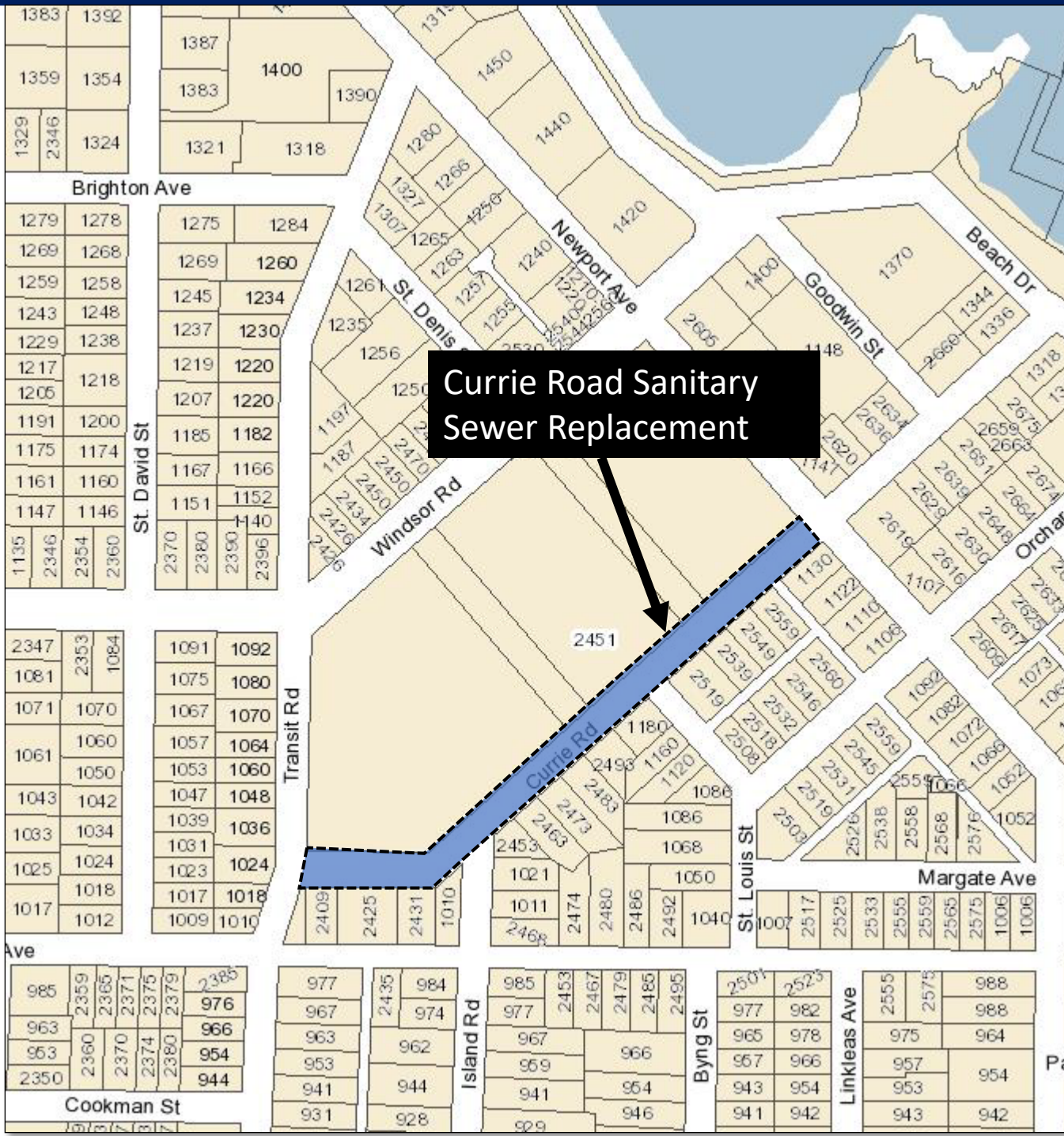


**POST-CONSTRUCTION**  
NOT STARTED

Sanitary sewer upgrade based on recommendations from Master Plan

Address hydraulic capacity concerns of existing pipes

Project extends from Transit Road to Newport Avenue



# Florence Street Sanitary Sewer Replacement

## Project Phases      Rationale      Overview Map



### PROJECT INITIATION

COMPLETE



### PROCUREMENT FOR CONSULTANT

COMPLETE



### DESIGN

ONGOING



### TENDER/REVIEW/AWARD

NOT STARTED



### CONSTRUCTION

NOT STARTED (COMPLETION BY NOV 2024)



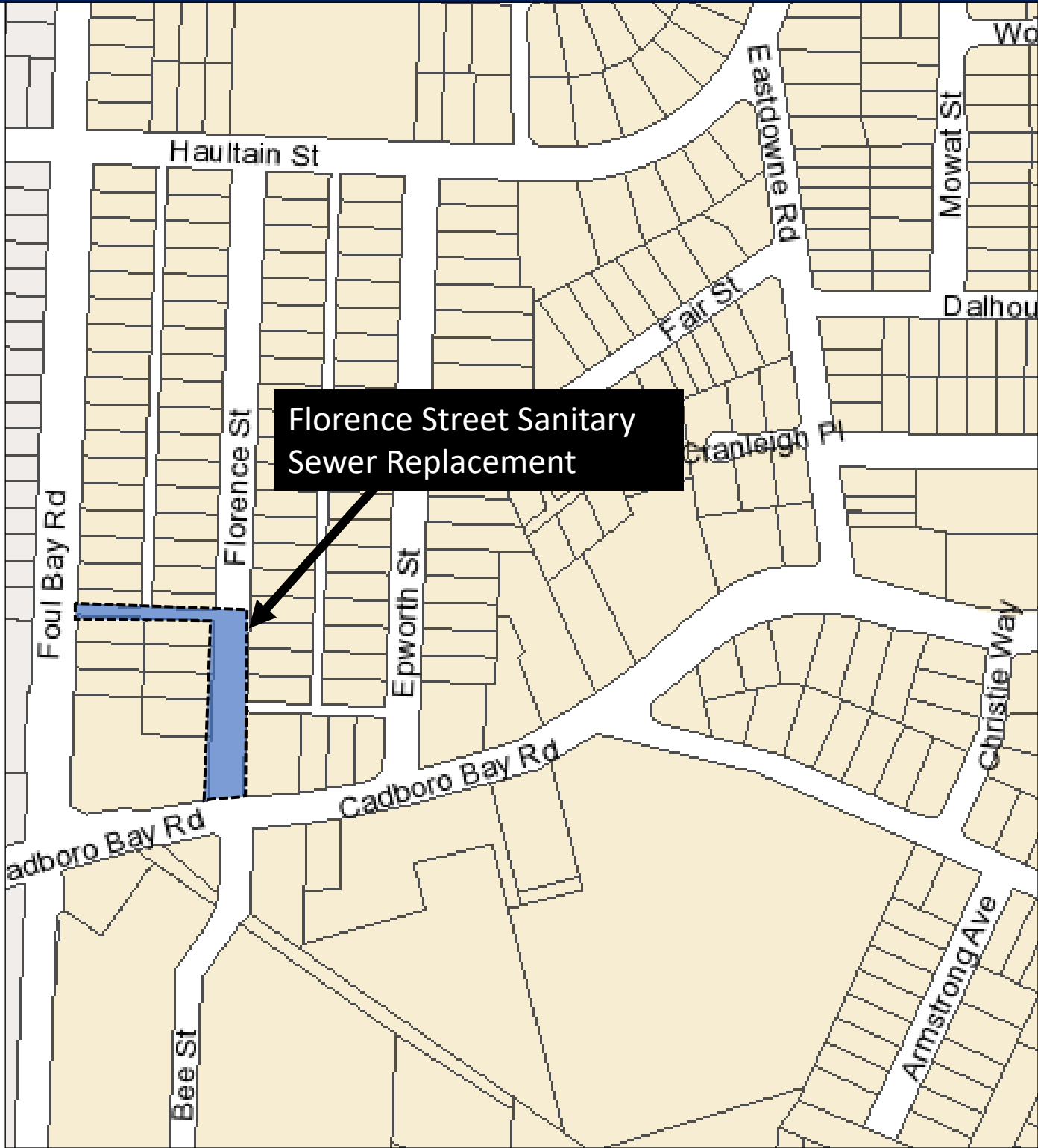
### POST-CONSTRUCTION

NOT STARTED

Improve sewage flow routing

Allow for abandonment of old large diameter pipe on Foul Bay Road

Convey sewage flow to Capital Regional District sewage main



# 2024 Storm Sewer Capital Projects

- Uplands Sewer Separation
- Estevan Avenue Storm Main Replacement (Phase 1)
- Meadow Place Storm Main Replacement



# Uplands Sewer Separation

## Project Phases

## Rationale

## Overview Map



**PROJECT INITIATION**  
COMPLETE



**PROCUREMENT FOR CONSULTANT**  
COMPLETE



**DESIGN**  
COMPLETE



**TENDER/REVIEW/AWARD**  
COMPLETE



**CONSTRUCTION**  
NOT STARTED (COMPLETION BY 2025)

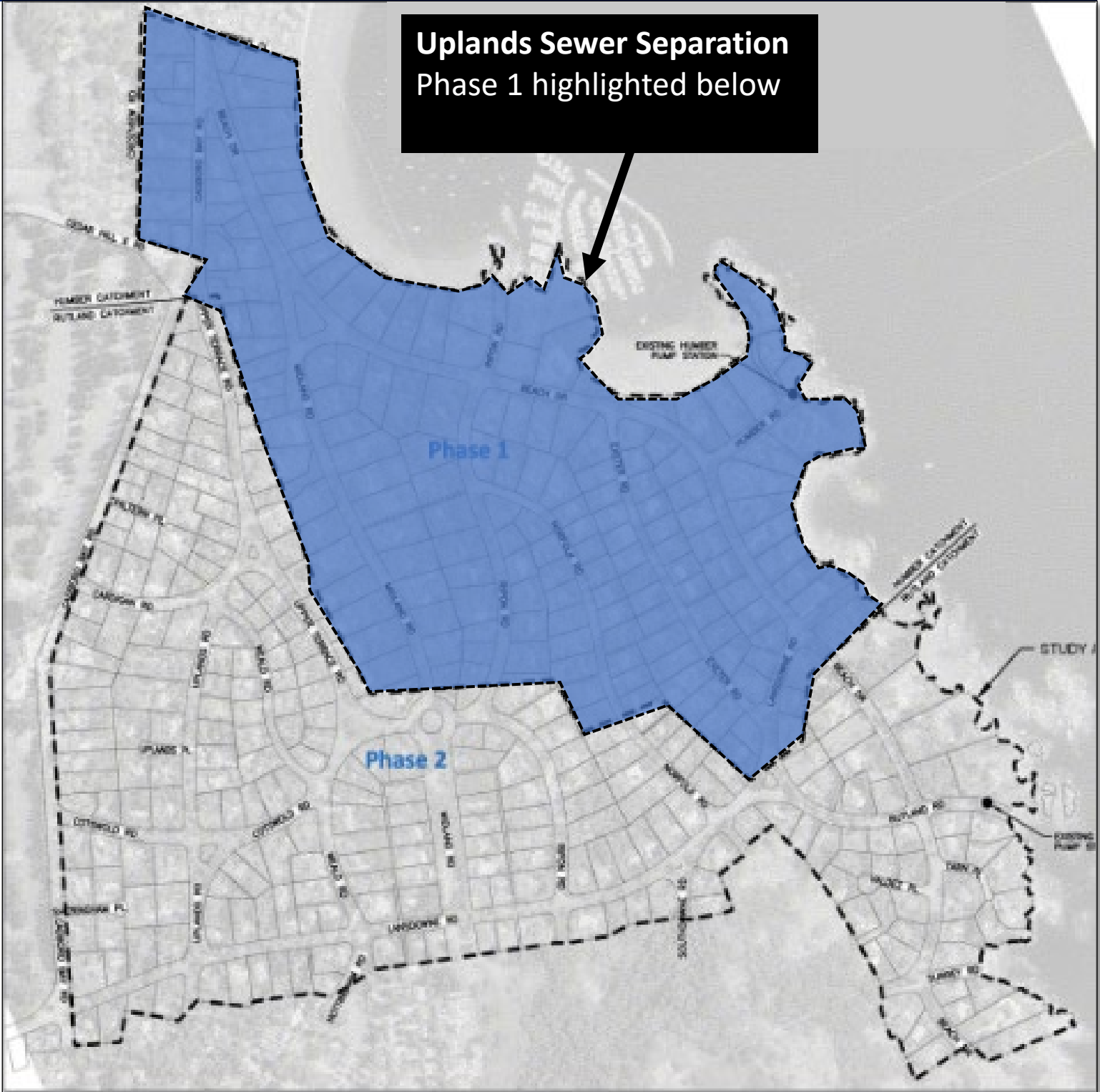


**POST-CONSTRUCTION**  
NOT STARTED (COMPLETION BY 2025)

Driven by provincial regulatory requirements to separate storm sewer from sanitary system

Provide mitigation against the risk of sewage overflow into the ocean

Reduce strain on Capital Regional District facilities downstream





# Estevan Storm Sewer Replacement (Phase 1)

## Project Phases

## Rationale

## Overview Map



**PROJECT INITIATION**  
COMPLETE

Alleviate potential flooding and surcharging issues during heavy rain events



**PROCUREMENT FOR CONSULTANT**  
COMPLETE



**DESIGN**  
ONGOING

Replacement driven by physical characteristics and age of existing pipes



**TENDER/REVIEW/AWARD**  
NOT STARTED



**CONSTRUCTION**  
NOT STARTED (COMPLETION BY NOV 2024)

Water, sewer, and storm infrastructure project



**POST-CONSTRUCTION**  
NOT STARTED



# Meadow Place Storm Sewer Replacement

## Project Phases      Rationale      Overview Map



**PROJECT INITIATION**  
COMPLETE

Replacement driven by root infestation and soil deposits within existing pipes



**PROCUREMENT FOR CONSULTANT**  
COMPLETE



**DESIGN**  
COMPLETE

Will reduce maintenance/service calls by Public Works staff



**TENDER/REVIEW/AWARD**  
NOT STARTED

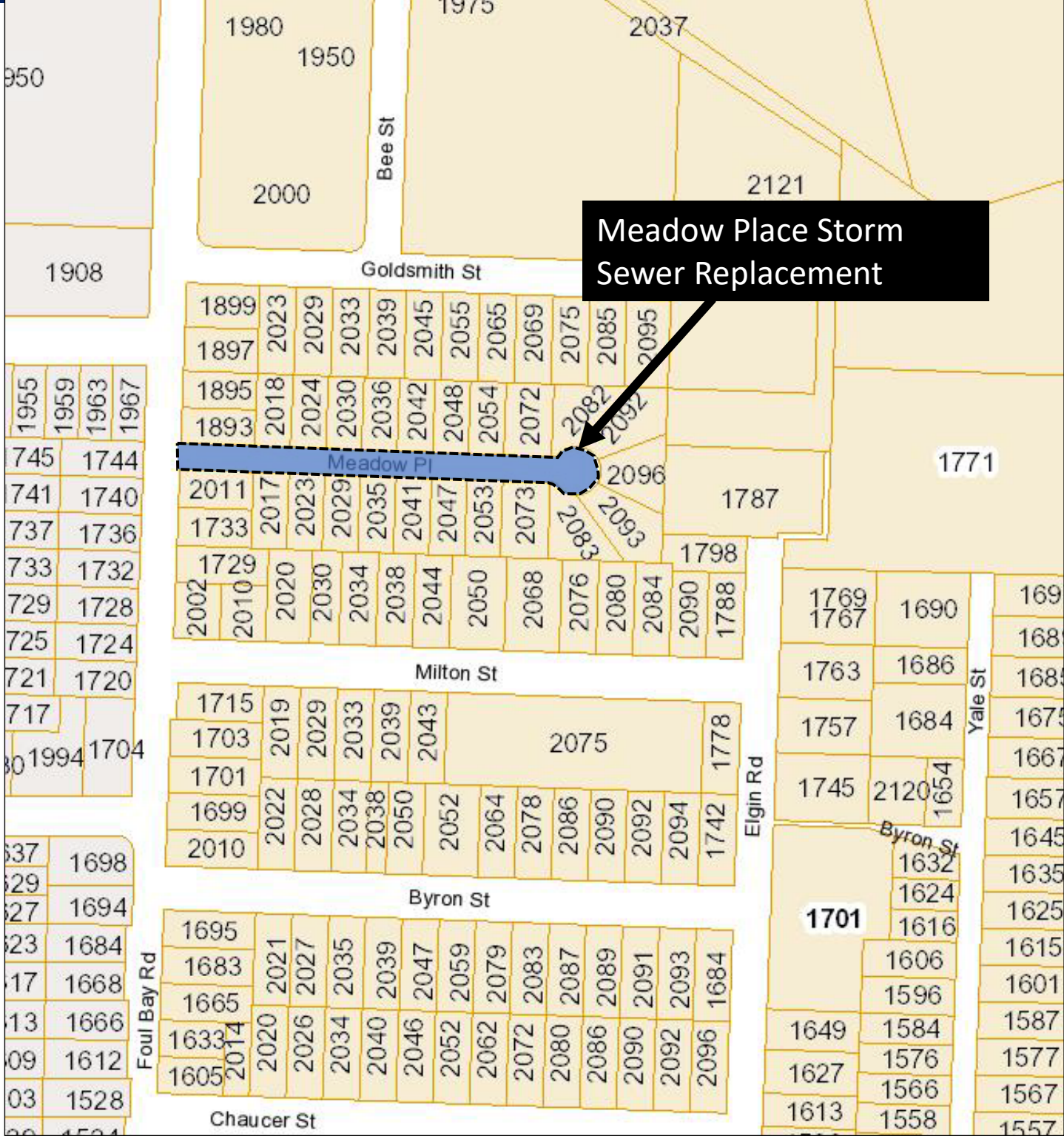


**CONSTRUCTION**  
NOT STARTED (COMPLETION BY SEPT 2024)

Will simplify and improve stormwater drainage



**POST-CONSTRUCTION**  
NOT STARTED



# 2024 Active Transportation Capital Projects

- McNeill Traffic Calming (Phase 1)
- Henderson Road and Haultain-Estevan Cycling Facility



# McNeill Bay Traffic Calming (Phase 1)

## Project Phases

## Rationale

## Overview Map



### PROJECT INITIATION

COMPLETE



### PROCUREMENT FOR CONSULTANT

COMPLETE



### DESIGN

ONGOING



### TENDER/REVIEW/AWARD

NOT STARTED



### CONSTRUCTION

NOT STARTED (COMPLETION BY 2025)



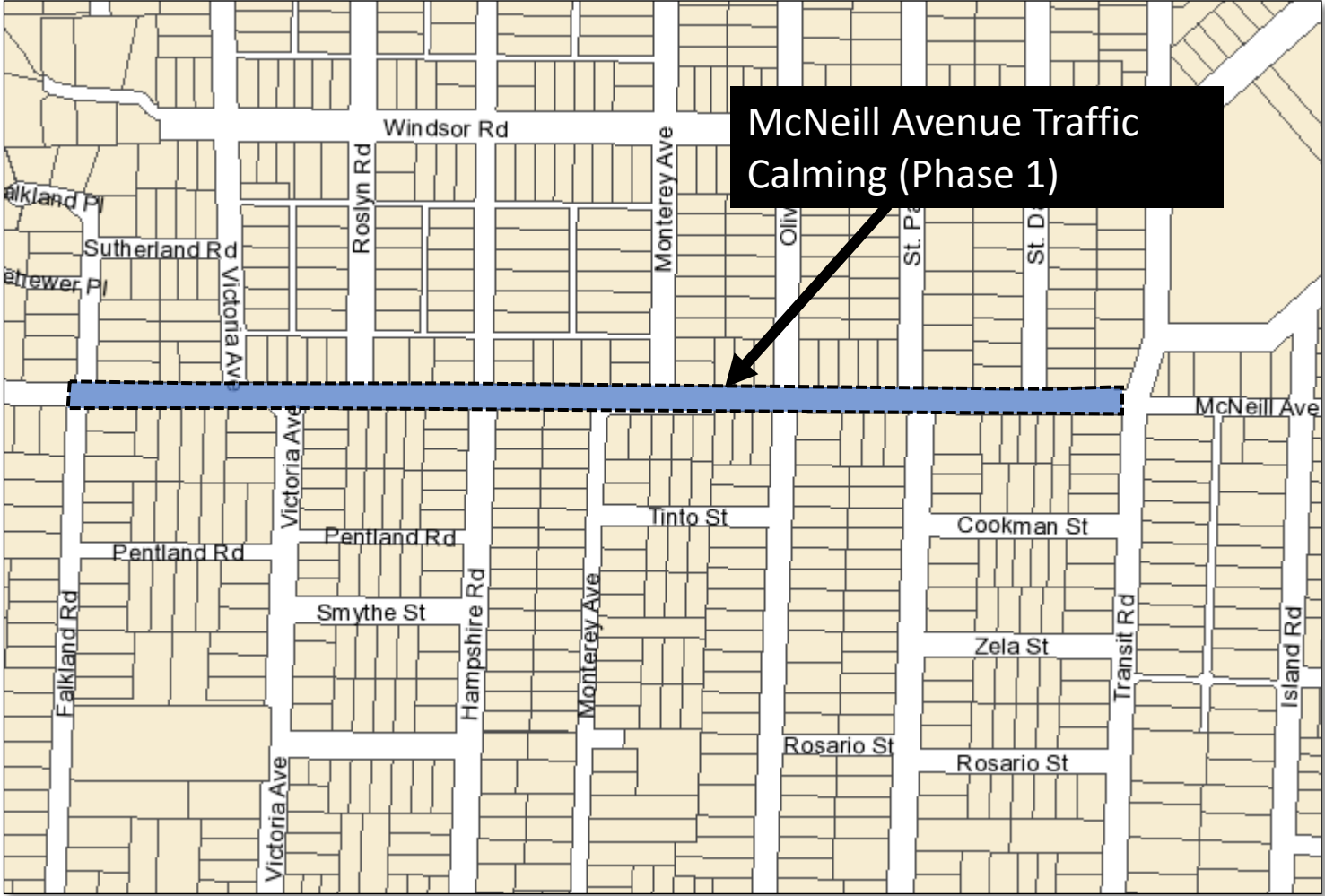
### POST-CONSTRUCTION

NOT STARTED (COMPLETION BY 2025)

Traffic calming measures to create a safer pedestrian and cyclist friendly environment by reducing vehicular speed

Supports and promotes active transportation initiatives

Curb extensions and raised crosswalks at key intersections



# Henderson Road and Haultain Estevan Cycling Facility

## Project Phases

## Rationale

## Overview Map



### PROJECT INITIATION

COMPLETE



### PROCUREMENT FOR CONSULTANT

COMPLETE



### DESIGN

ONGOING



### TENDER/REVIEW/AWARD

NOT STARTED



### CONSTRUCTION

NOT STARTED



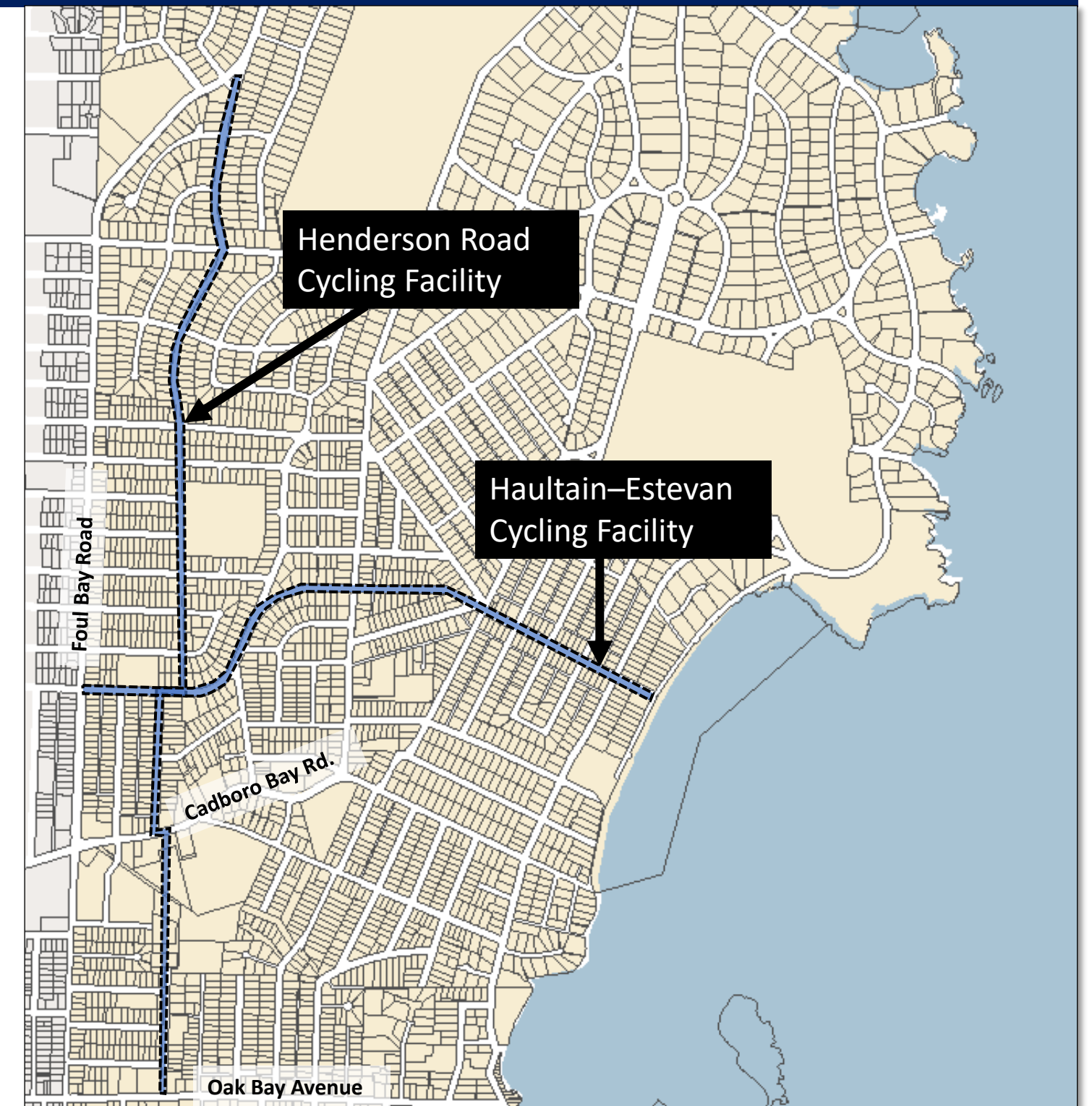
### POST-CONSTRUCTION

NOT STARTED

Shared cyclist and vehicle biking facility using sharrows and small intersection improvements

Supports and promotes active transportation initiatives

Projects identified in the Active Transportation Strategy



# 2024 Asset Management Summary

Performance Measures and Statistics	Forecast Quantity	% of Sustainable Annual Output
Water Mains Replaced	2,442 m	157.5
Sanitary Sewer Mains Replaced	795 m	63.6
Catch Basins Replaced	20	N/A
Storm Sewer Mains Replaced	870 m	46.3
New Storm Sewer Main	3,600 m	N/A
New Hydrants	14	N/A
Road Rehabilitation	39,000 m <sup>2</sup>	117.8
Sidewalks	200 m	N/A
Cycling Facilities	TBD	N/A

# 2024 Miscellaneous Capital Projects

## **In Progress**

- McNeill Bay/McMicking Point Foreshore Erosion Protection
- Radcliffe and King George Electrical Kiosk Replacement
- Radcliffe, King George, and Bowker Wet Well Lid Replacement
- Uplands and Rutland Electrical Streetlight Kiosk Replacement
- Uplands Streetlight Replacement Program
- Public Works to Bowker Creek Drainage Improvement Project
- Bowker Creek Walkway Railings

## **Pending Approval**

- Haro Road Soil Transfer Site
- Public Works Fuel Tank Replacement
- Streetlight Replacement Program
- Sidewalk Replacement Program

# 2024 Reports and Studies

## In Progress

- Storm Water Master Plan
- Prioritization and Implementation of Active Transportation Plan
- North Oak Bay Water Pressure Zone Consolidation
- Pavement Condition Assessment
- Sidewalk Condition Assessment
- Streetlight Condition Assessment
- Beach Access Assessment Study



Questions?