# ABTP - OUTFALL CONCEPTUAL DESIGN AND RECEIVING WATER ASSESSMENT ICMC – Meeting #2

October 2013



### **MEETING AGENDA**

- Introduction of ICMC & Project Team
- Re-cap of Previous Meeting
- Presentation: Preliminary Evaluation of Alternatives
  - Selection of Alternative Outfall Lengths
  - Preliminary Evaluation and Findings
- Discussion

### **INTRODUCTION OF ICMC & PROJECT TEAM**

### Personal Introductions

### Project Team

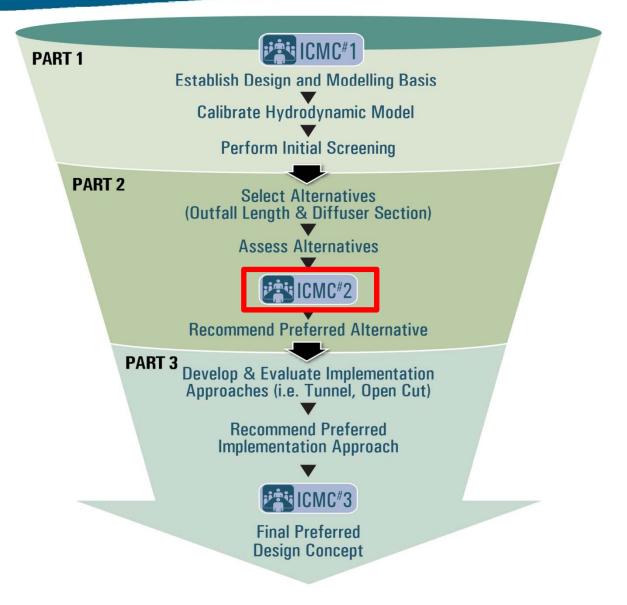
- Includes three consultants:
  - CH2MHILL prime consultant
  - Hatch Mott MacDonald outfall design and agency consultation
  - Baird lake modelling and sediment modelling
- Site-Specific Experience ABTP, Lake Ontario
- Technical Experience Outfall Conceptual Designs, Public/Agency Consultation, Tunneling, Lake Modelling

### **RECAP OF PREVIOUS MEETING**

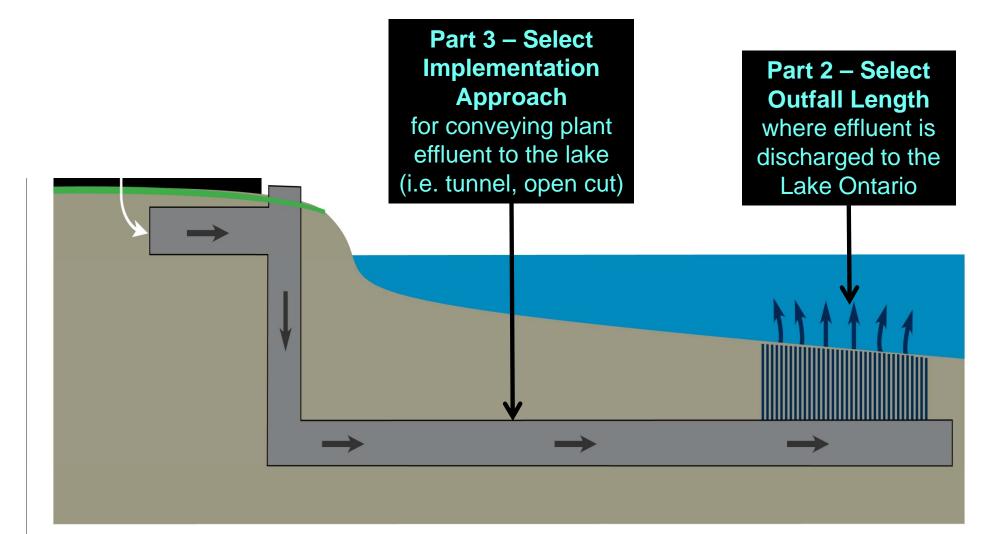
### **PROJECT PURPOSE**

## Deliver a conceptual design for a new outfall that meets regulatory acceptance and improves nearshore water quality in Lake Ontario

### **PROJECT APPROACH**



### **PROJECT APPROACH**



## PRESENTATION

## Preliminary Evaluation of Alternative Outfall Lengths

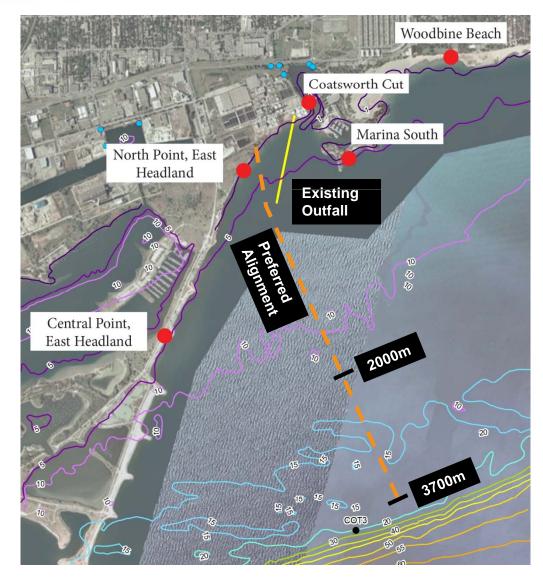
### SELECTION OF ALTERNATIVE OUTFALL LENGTHS

- Geotechnical and Sediment Field Studies Performed
- Alternatives selected that were:
  - Offshore from sediment transport zone (1500m)
  - Inshore from scarp (3700m)
  - Along 1986 preferred alignment which is clear of buried valley and ridge features

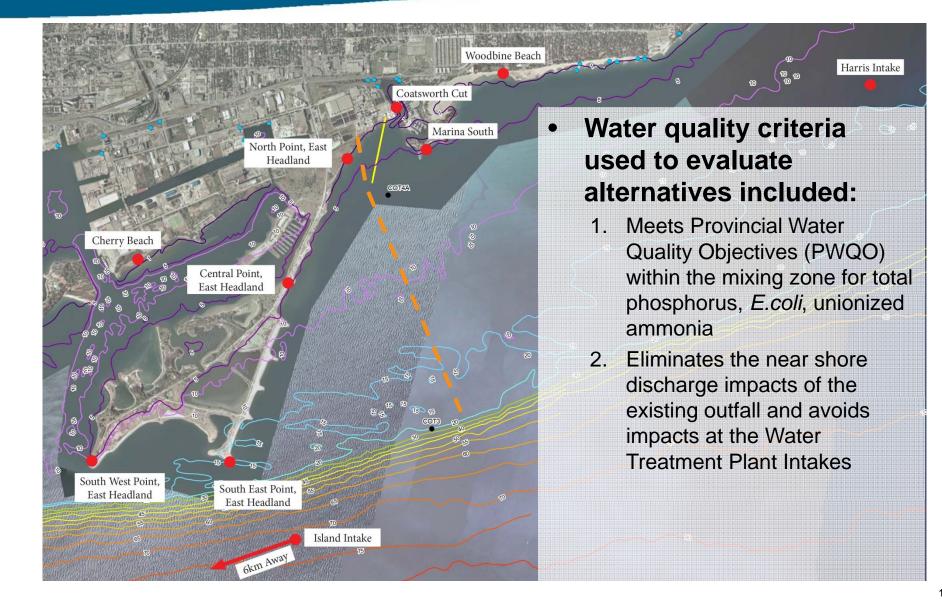


### SELECTION OF ALTERNATIVE OUTFALL LENGTHS

- Alternative Outfall
  Lengths Selected
  - Total Outfall Lengths range from (2000m – 3700m)
    - Includes the 1986 concept (3700m outfall)

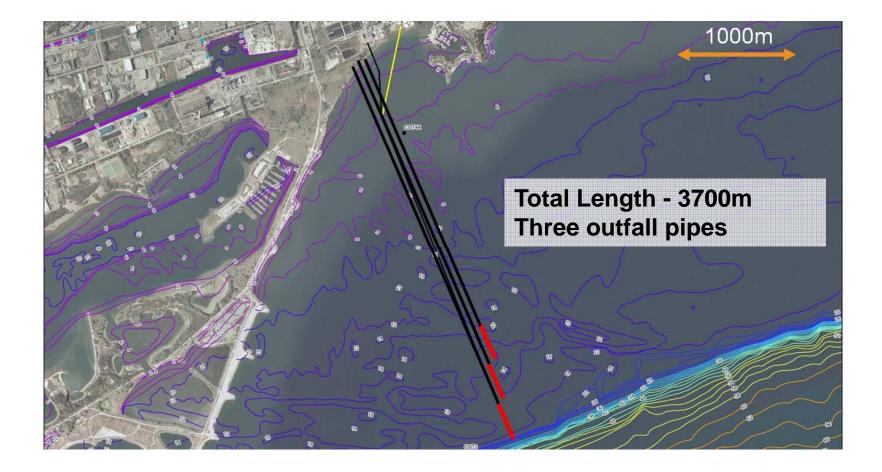


### **EVALUATION OF ALTERNATIVE OUTFALL LENGTHS**

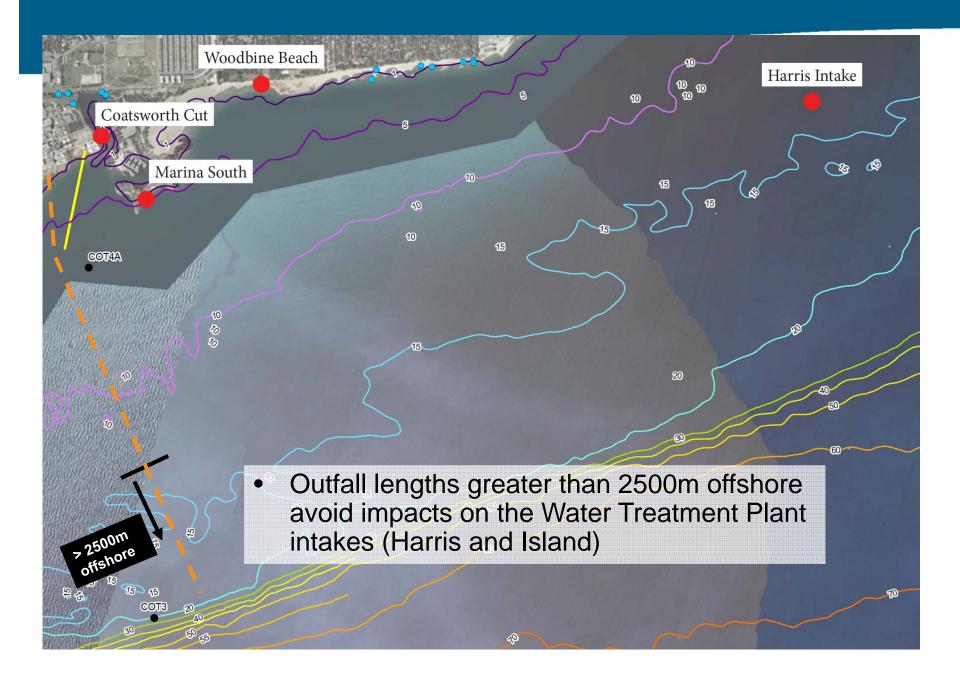


### **1986 OUTFALL CONCEPT**

- Preferred alternative from 1986 study does not meet Provincial Water Quality Objectives (PWQO) at edge of mixing zone
  - Only one pipe operated during average conditions

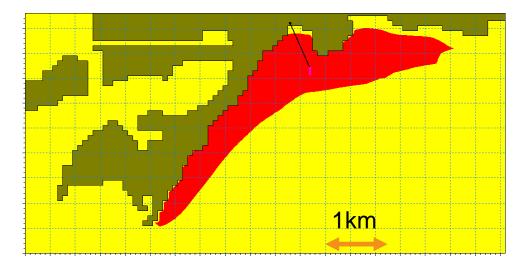


#### **IMPACT ON WATER INTAKES**



### MEETING WATER QUALITY OBJECTIVES AT NEAR SHORE

- Existing Outfall Nearshore Impact
  - PWQO standard is not met at nearshore



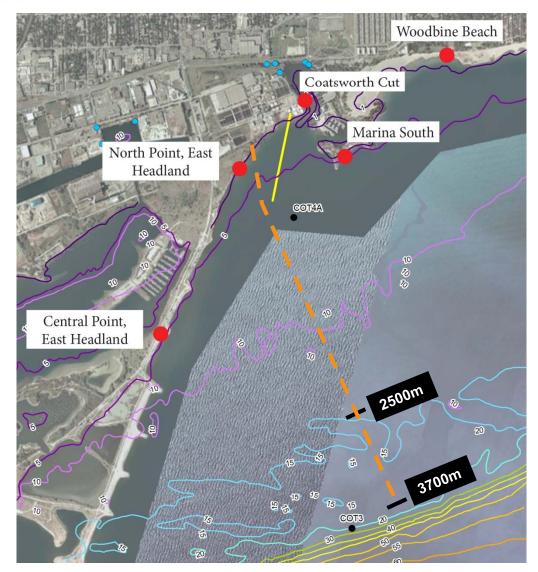
- Outfall Alternatives Eliminate Nearshore Impact
  - PWQO standard is met at nearshore



Graphs show area of phosphorus concentrations greater than the PWQO

### **SUMMARY OF FINDINGS**

- Outfall length required to meet water quality criteria include:
  - Total outfall length greater than 2500 m
  - Limiting length between 3500 and 3700 m
    - Geotechnical "scarp" constraint



### **NEXT STEPS AND TIMELINE**

### NEXT STEPS

- October, 2013
  - Finalize Selection of Preferred Alternative Outfall Length
- November, 2013
  - Evaluate and Select Preferred Implementation Approach (i.e. Tunnelling, Open Cut)
- January, 2013
  - Conceptual Design Report

## **DISCUSSION & QUESTIONS**