




Ashbridges Bay Erosion and Sediment Control Class EA: CLC Meeting #3 November 28, 2013






1




Agenda

- 6.30pm Welcome and Agenda Review
- 6.35pm Review of Minutes from CLC #2
- 6.40pm Overview of Water Quality Modelling Results
- 6.55pm Question and Answer: Water Quality Modelling Results
- 7.10pm Baseline Environmental Inventory
 - Overview of Purpose
 - Questions and Comments from CLC Members
- 7.20pm Introduction to Evaluation of Alternatives
- 7.30pm Evaluation of Alternatives: Working Session 1
- 7.50pm Evaluation of Alternatives: Working Session 2
- 8.10pm Working Session Feedback
- 8.25pm Next Steps
- 8.30pm End


2

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2013 Class EA Objective

To identify a preferred solution that will mitigate erosion and sediment deposition at the harbour entrance of Coatsworth Cut in order to ensure safe navigation - while considering the various approved facilities, planning initiatives and current uses in the study area.



3

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Objectives of Tonight's CLC

Main objectives:

- Review the results of the water quality modelling
- Provide input on the preliminary evaluation of alternatives

Additional objectives:

- Discuss baseline environmental inventory: clarifications and additions
- Introduce the evaluation process and key background information to consider

4


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Water Quality Modelling




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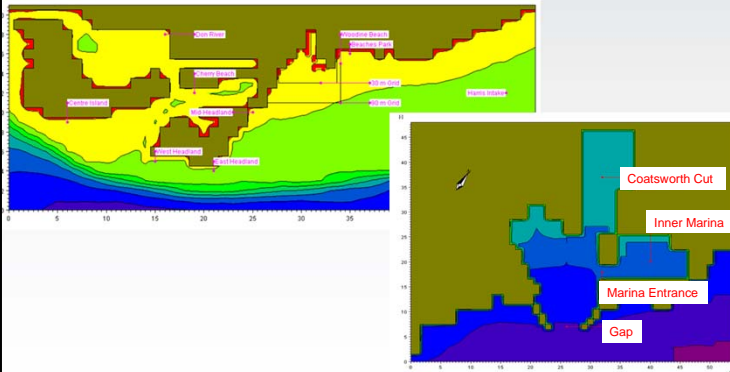
Water Quality Modelling - Methodology

- The City of Toronto's Lake Ontario MIKE-3 hydrodynamic and water quality model was used to assess the impact the Alternatives will have on water quality. It is designed for Lake Ontario conditions and is undertaken at a 30 meter resolution.
- The same model has been used for:
 - ABTP Outfall
 - Don River Central Waterfront EA
 - Region of Durham Outfall
 - Source Protection Planning studies (peer reviewed as part of this initiative)
- The existing conditions presented are average levels for the May 15 to September 8 period.
- This model was run for:
 - Existing conditions, with proposed treatment wetlands lakefilled but not operating and erosion structures (Alternative 1, 2, and 3) – results on following slides
 - Implementation of local Wet Weather Flow projects (the treatment wetland being online) and erosion structures (Alternative 1, 2, and 3) – results not included but statement in conclusions made
- Total Phosphorus (TP), and *E.coli* were modelled at 12 Environmental Endpoint Locations (EEL). Total Suspended Solids and Copper were also reviewed but have not been presented because they showed similar trends and have less significance on recreational uses and aquatic health.


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Water Quality Modelling – EEL Points



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Water Quality Modelling Results – Total Phosphorus (TP)

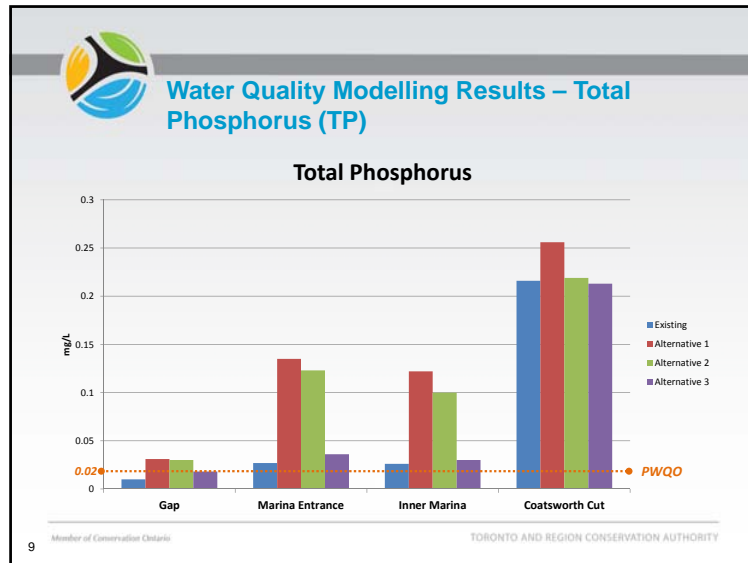
Effects of High TP Levels:

- Eutrophication can occur when there is an un-natural increase of phosphorus in a water body. Eutrophication is the process that occurs when high concentrations of nitrogen and phosphorus, which are both fertilizers, boost algae and aquatic plant growth. As algae and plants die and decompose, dissolved oxygen is consumed. This becomes a problem if the rate of oxygen consumption exceeds the rate of water aeration, thus subjecting aquatic life to the negative effects of low dissolved oxygen (hypoxia or anoxia).
- Provincial Water Quality Objectives (PWQO) for TP are: 0.02 mg/L.

What we see happening with the erosion and sediment control Alternatives:

- A funnelling (concentration of flow) effect is happening where TP levels could be expected to be slightly higher than existing in the 'gap' and the marina entrance (entrance of the ABYC basin) for all Alternatives.
- Alternative 3 deflects the sea wall discharge making levels of phosphorous lower than with Alternative 1 and 2 in Coatsworth Cut, ABYC basin and the marina entrance.

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Water Quality Modelling Results – E.Coli

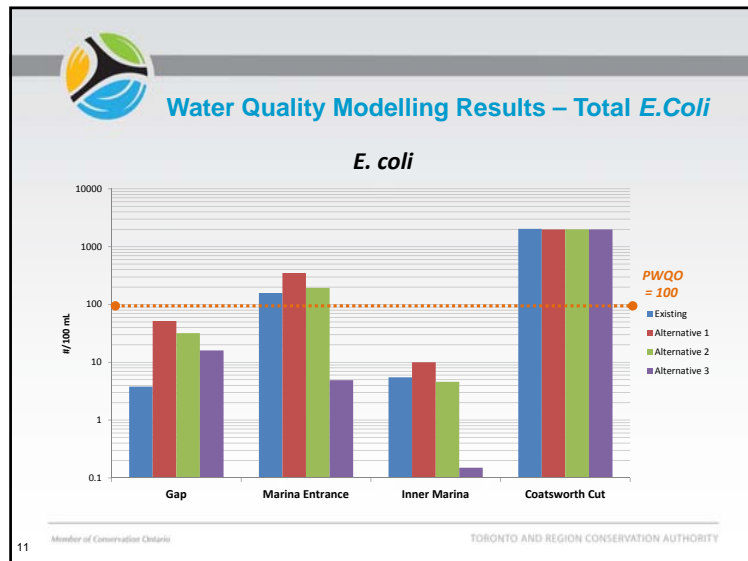
Effects of High E.Coli Levels

- E. coli is the type of bacteria that Ontario health authorities look for when deciding whether to post a beach as safe or not safe. E. coli bacteria together with other harmful micro-organisms are found in animal and human waste. Swimming in waters with E. coli levels greater than the provincial standard is considered to exposes the bather to increased risk of infections. They include ear, nose and throat infections, as well as upset stomach, skin rashes and diarrhea.
- PWQO for E.Coli are 100#/100mL.

What we see happening with the erosion and sediment control Alternatives:

- A funnelling effect is happening where E-coli levels can be expected to be slightly higher than existing in the 'gap'.
- Alternative 3 deflects the sea wall discharge making levels of E-coli lower which could be a potential positive benefit in the inner marina (ABYC basin) and the marina entrance.


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Water Quality Modelling High Level Conclusions

- The Don River, Centre Island, Cherry Beach, Harris Water Intake and Woodbine Beach are not impacted by any of the Alternatives.
- The Alternatives show impacts locally, mainly due to funnelling of the seawall and CSO discharges. These impacts are primarily predicted in the area identified as the 'gap' (just inside the proposed new entrance for all Alternatives).
- Alternative 3 deflects the seawall gate discharge from the marina entrance and inner marina. This could provide a potential positive impact in E.coli levels.
- Although all the Alternatives show a potential for some increases in Phosphorous levels in the gap, marina entrance and inner marina from the existing the increases would expect to be very minimal with Alternative 3 because of the deflection of the seawall gates. Alternative 1 and 2 have the potential to create more substantial impacts.
- When the model was run showing the implementation of the treatment wetland E.coli and Phosphorous levels are predicted to be lower in Coatsworth Cut.

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Water Quality Modelling: QUESTION AND ANSWER




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Baseline Environmental Inventory




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Baseline Environmental Inventory

- Used to provide information in order to evaluate alternative methods of addressing the problem situation
- Provides a baseline from which to monitor the effectiveness of the action, once taken, as well as the types and levels of environmental impacts
- Is a key component of the Environmental Study Report


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Baseline Environmental Inventory: FEEDBACK




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 **Evaluation of Alternatives - Background**



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 **Updated Alternatives**

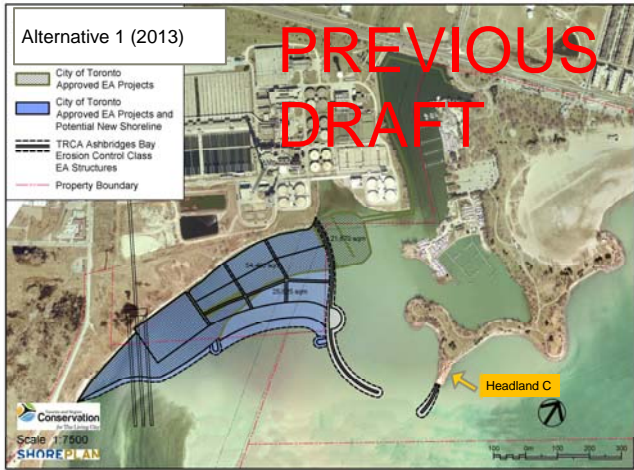
- Node for potential lookout was removed as a result of CLC comments. The public access components will be investigated further in the detailed design phase.
- Alternatives have been updated to more clearly define the components of the Class EA and the already approved City of Toronto facilities.

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19

Alternative 1 (2013)

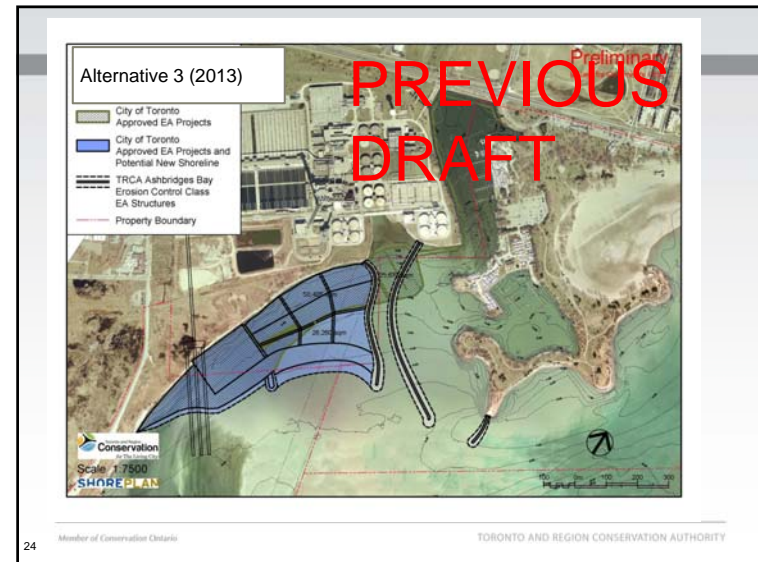
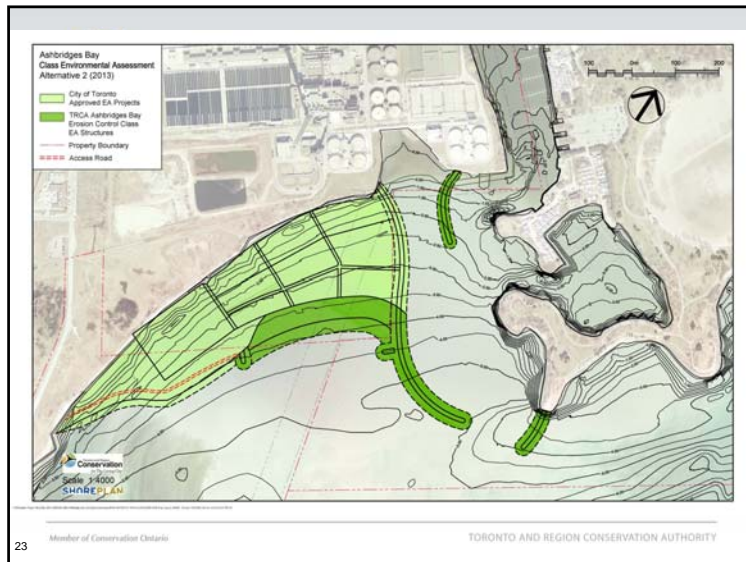
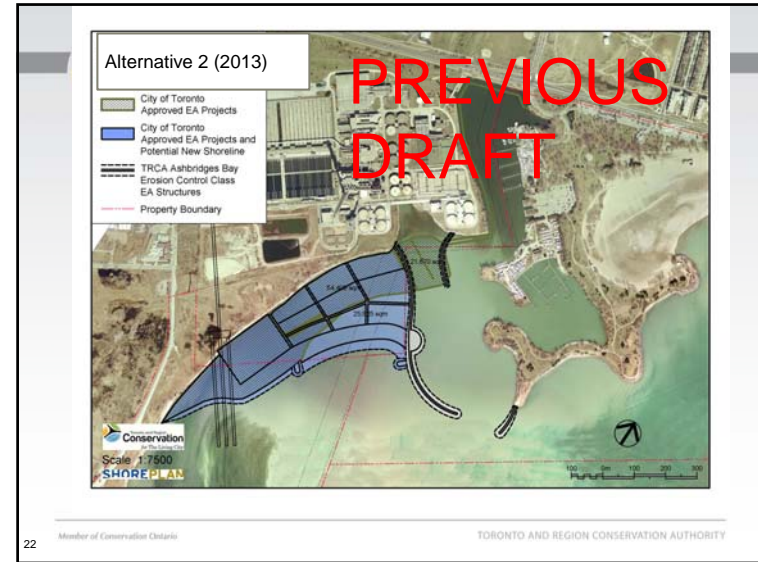
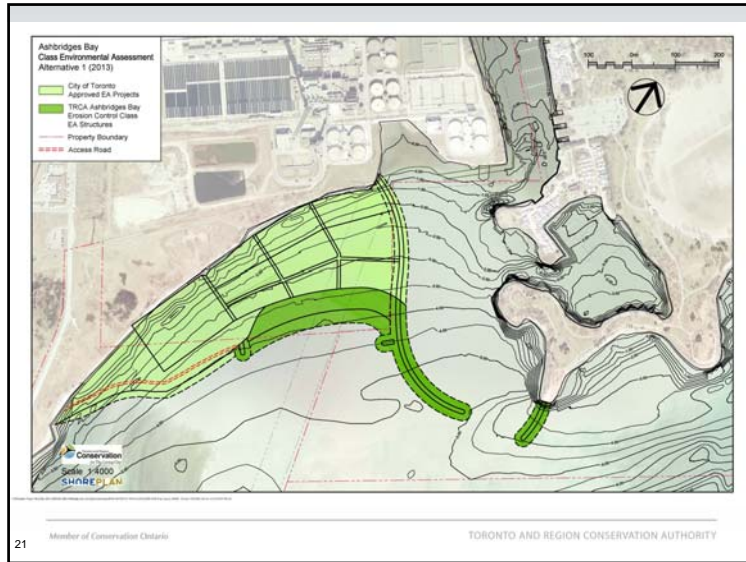
PREVIOUS DRAFT

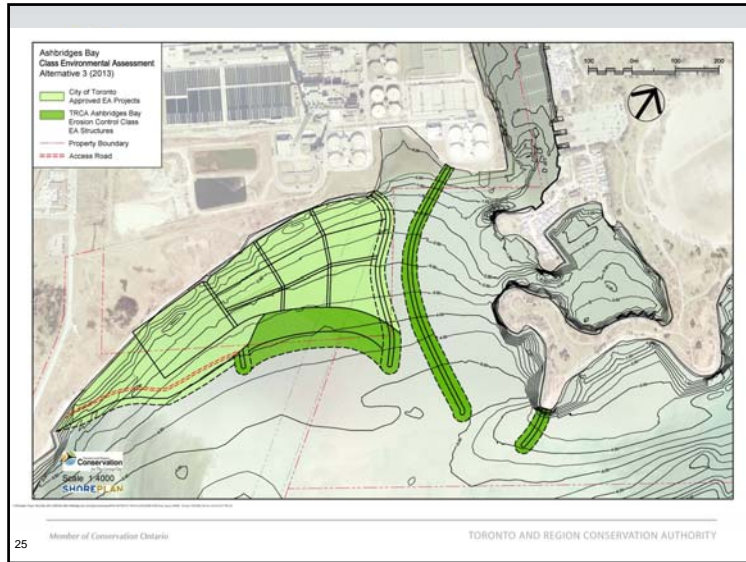


City of Toronto Approved EA Projects
City of Toronto Approved EA Projects and Potential New Shoreline
TRCA Ayrbridges Bay Erosion Control Class EA Structures
Property Boundary

Conservation Ontario
Scale 1:7500
SHORE PLAN

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Breakwater Examples

Port Credit (above)
Burloak Waterfront Park, Burlington (right)


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Cobble Beach Examples

Burloak Waterfront Park
Burlington, Ontario
Implemented 10+ years ago

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Draft Evaluation



Evaluation Criteria – Preliminary Screening

- To ensure that the proposed solution best meets the project objectives, TRCA, City of Toronto, Shoreplan Engineering Limited, the public and agencies had several discussions to determine evaluation criteria in relation to the physical, biological, cultural, social, economic, and technical engineering elements.
- Because of extensive work undertaken as part of the previously initiated 2002 and 2009 EAs, a number of the criteria established were addressed through a preliminary screening process. The below chart is a comprehensive list of criteria indicating those that did not move forward to the detailed evaluation stage because of existing studies or if they were not applicable to the study works.


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Evaluation Criteria – Preliminary Screening

Physical Environment Criteria	Typical Questions	Evaluation Status
Water Quality	Does the alternative impact water quality?	Further evaluation will be undertaken
Unique Habitat/Landform Impacts	Does alternative impact any unique habitats or landforms in the area?	Further evaluation will be undertaken
Sediment Movement	Does the alternative impact sediment movement in the littoral cell?	Further evaluation will be undertaken
Cultural Heritage Criteria	Typical Questions	Evaluation Status
First Nations/Métis Interests	Does alternative impact any identified First Nations or Métis interests in the area?	Further evaluation needed: to be determined in consultation with First Nations/Metis Communities
Cultural Heritage Impacts	Does alternative potentially impact unknown cultural heritage resources in the area?	No – Stage 1 Archeology Report confirms that there is low potential for terrestrial and marine heritage resources and does not recommend a Stage 2 be undertaken. Further evaluation will not be undertaken.
Accessibility and Scenic Views Impact	Does alternative impact public access and/or existing scenic views?	Further evaluation will be undertaken


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Evaluation Criteria – Preliminary Screening

Feasibility and Cost Criteria	Typical Questions	Evaluation Status
Capital and Maintenance Costs	Compare alternatives, relative to one another, for cost to construct and maintain.	Further evaluation will be undertaken
Construction Phasing Impacts (Land and Water)	Does construction phasing of alternative result in significant impacts to existing users (staging, access, disruption of use, etc.)?	Further evaluation will be undertaken
Land/Water Lot Requirements	Does alternative require lands or water lots under ownership or lease by other agencies/stakeholders?	No – All lands are owned by TRCA or the City of Toronto. A portion of the waterlot in front of the Ashbridges Bay Wastewater Treatment Plant is owned by the Toronto Port Authority but under long term lease by the City of Toronto. The implementation of this project would fall within the permitted uses within the lease.
Impacts on Other Projects	Does alternative produce impacts to projects not currently identified under Technical Considerations Criteria?	Further evaluation will be undertaken


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Evaluation Criteria – Preliminary Screening

Natural/Biological Environment Criteria	Typical Questions	Evaluation Status
Aquatic Habitat Impacts	Does alternative result in impacts to aquatic habitat? Does alternative result in a Net Loss/Gain of habitat?	Further evaluation will be undertaken
Terrestrial Habitat Impacts	Does alternative result in impacts to sensitive terrestrial habitat or migration of terrestrial communities?	Further evaluation will be undertaken
Migratory and Breeding Bird Impacts	Does alternative result in impacts to habitat for migratory or breeding bird communities?	Further evaluation will be undertaken
Species of Interest Impacts	Does alternative impact species of interest/concern?	Further evaluation will be undertaken
Fisheries Impacts	Does alternative impact fish community assemblages?	Further evaluation will be undertaken
Soils and groundwater Impacts	Does alternative impact soil/groundwater quality, or is it potentially impacted by contaminated soils/groundwater?	No – There are no groundwater dependent features in close proximity to the project nor is groundwater discharge to the lake of concern given the assimilative capacity of the body of water. Also, no excavation will be undertaken for any of the alternatives.


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Evaluation Criteria – Preliminary Screening

Socio-Economic Environment	Typical Question	Evaluation Status
Parks – Public Use and Infrastructure Impacts	Does alternative impact public use and infrastructure in the area?	Further evaluation will be undertaken
Parks Planning – Ashbridge’s Bay Park, Tommy Thompson Park and the Lake Ontario Park Master Plan	Does alternative impact the goals and objectives of existing planning initiatives in the area?	Further evaluation will be undertaken
Boat Club Facility and Operations Impacts	Does alternative impact boat club facilities, programs and operations?	Further evaluation will be undertaken
Recreational Water Use Impacts	Does alternative provide for sheltered / flatwater conditions required by canoes/kayaks?	Further evaluation will be undertaken
Accessibility and Scenic Views Impact	Does alternative impact public access and/or existing scenic views?	Further evaluation will be undertaken


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Evaluation Criteria – Preliminary Screening

Technical Considerations	Typical Questions	Evaluation Status
Public Safety	Does alternative impact public safety during construction and/or day-to-day use following construction?	Further evaluation will be undertaken
Water Circulation	Does alternative impact water circulation?	Further evaluation will be undertaken
Water Quality	Does the alternative impact water quality?	Further evaluation will be undertaken
Safe Boat Passage	Does alternative impact the movement and interaction between anticipated types of watercraft; the Coast Guard Auxiliary Station; or Federal navigation safety guidelines?	Further evaluation will be undertaken
Shoreline Stability	Does alternative impact wave energy within the area and subsequently shoreline erosion?	Further evaluation will be undertaken
Dredging Impacts	Does alternative reduce annual long term dredging requirements?	Further evaluation will be undertaken
Climate Change Impacts	Is the alternative able to adjust / function / adapt in the event of changing lake levels due to Climate Change?	Further evaluation will be undertaken

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Draft Evaluation of Alternatives


Consideration:

- Although the Class EA is ensuring the integration of other approved facilities in the area only the impacts of the erosion and sediment control structures are being assessed in this evaluation.
- The 'Do Nothing' Alternative is considered to be status quo (on-going dredging).
- The Steering Committee (TRCA, City of Toronto, Waterfront Toronto) has advised that we move forward with a high level ranking. The Alternatives are very similar and thus rank similarly for many of the criteria making a grading (numerical) system less meaningful. Water quality is the exception.
- This ranking is currently being expressed in colours to help make it easier to visually relate.


LEGEND
 red = least preferred
 yellow = intermediate preferred
 green = most preferred

- Brief notes are included in the following charts however detailed rationale will be included in the ESR.

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Draft Evaluation of Alternatives: WORKING SESSION



**Workbook Provided*

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Draft Evaluation of Alternatives: Working Session FEEDBACK



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37

38

Preliminary Evaluation – Physical Criteria

Physical Criteria	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Sediment Movement	Does the alternative reduce siltation in the Coatsworth Cut channel?				
	Do Nothing/Maintenance Dredging			*	Existing dredging program would need to continue to maintain boat access and issues would continue to exist seasonally (during lower water levels); Current efforts have proven to not be sufficient to remediate navigation hazards for the full recreational boating season
	Alternative 1				Littoral sediment deposition in the existing channel substantially reduced
	Alternative 2				Littoral sediment deposition in the existing channel substantially reduced
Unique Landform Impacts	Does alternative impact any unique habitats or landforms in the area?				Ashbridge's Bay Park is considered to be a unique landform; no unique habitats are identified in the study area
	Do Nothing/Maintenance Dredging			*	On-going erosion will occur on the headlands of Ashbridge's Bay Park
	Alternative 1				Headland at Ashbridge's Bay Park will be stabilized and designed to better withstand coastal processes
	Alternative 2				Headland at Ashbridge's Bay Park will be stabilized and designed to better withstand coastal processes
Alternative 3				Headland at Ashbridge's Bay Park will be stabilized and designed to better withstand coastal processes	

Preliminary Evaluation – Physical Criteria

Physical Criteria	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Water Quality	Does the alternative impact water quality				
	Do Nothing		*		Current conditions are not desirable. Seawall gates discharge in front of the ABTP and area is currently used for recreational boating.
	Alternative 1			*	Funneling of P and E. coli would occur; Increase in P is predicted in the gap, Coatsworth Cut and inner marina- would potentially increase aquatic plant growth; Some increase in E.coli could be expected in the gap, marina entrance and inner marina; E.coli levels predicted to remain similar to existing in Coatsworth Cut
	Alternative 2			*	Slightly lower P and E. coli levels predicted than Alternative 1; E.-coli levels predicted to remain similar to existing in Coatsworth Cut
	Alternative 3				Seawall gate discharge would be diverted and thus have the potential to have P and E.Coli diverted from recreational boating areas.; Undesirable area would still exist but this would be in the channel where there would be no public access/recreation.; Potential positive benefit for the marina entrance and inner marina for E.coli levels; Slight increase in P for gap and marina entrance predicted.

39

40

Preliminary Evaluation – Natural/Biological

Natural/Biological Environment Criteria	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Aquatic Habitat Impacts	Does alternative result in impacts to aquatic habitat?				Fish habitat improvements would be required to compensate for the infill area for each alternative
	Do Nothing/Maintenance Dredging				Impact of annual dredging minimal. No loss of aquatic habitat, but also no potential for improvements.
	Alternative 1			*	Footprint = 48,100 sq m; offers ability to improve habitat diversity in design of structures (e.g., cobble beach; surcharged groynes; surcharged revetment); compared to existing conditions, higher expected phosphorus levels may cause excessive growth of aquatic vegetation and thus negatively impact fish habitat
	Alternative 2			*	Footprint = 53,000 sq m; offers ability to improve habitat diversity in design of structures (e.g., cobble beach; surcharged groynes; surcharged revetment); compared to existing conditions, higher expected phosphorus levels may cause excessive growth of aquatic vegetation and thus negatively impact fish habitat
	Alternative 3		*		Footprint = 62,000 sq m; offers ability to improve habitat diversity in design of structures (e.g., cobble beach; surcharged groynes; surcharged revetment); highest potential for improved habitat quality as an expected increase in total phosphorus level and corresponding impact on aquatic vegetation growth is small compared to increases expected for Alternatives 1 and 2

Preliminary Evaluation – Natural/Biological

Natural/Biological Environment Criteria	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Fisheries Impacts	Does alternative impact fish community assemblages?				-
	Do Nothing/Maintenance Dredging				Dredging impacts are low; No loss of habitat but no opportunities for improvement and positive impact on fish community (e.g., currently, open coast shoreline in front of ABTP lacks structural diversity and the fish species number and abundance are low)
	Alternative 1				Limited opportunities to improve habitat and thus have a positive effect on fish community due to higher expected phosphorus levels (compared to existing levels) that may cause excessive growth of aquatic vegetation and thus negatively impact fish community
	Alternative 2				Same as Alternative 1
	Alternative 3				Highest potential for improvement to fish community as an expected increase in total phosphorus level and corresponding impact on aquatic vegetation growth are small compared to increases and potential impacts expected for Alternatives 1 and 2

41

Preliminary Evaluation – Natural/Biological

Natural/Biological Environment Criteria	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Terrestrial Habitat Impacts	Does alternative result in impacts to sensitive terrestrial habitat or migration of terrestrial communities?				Terrestrial habitat impact mitigation measures will be employed during construction; Area included below for terrestrial land base do not include breakwaters
	Do Nothing/Maintenance Dredging				No impacts to terrestrial habitat. No opportunity for improvements to terrestrial habitat in an area that is currently used mainly as industrial land and an urban park
	Alternative 1				16,943 sq m of new land base plus 11,009 sq m cobble beach; Limited habitat improvement and creation opportunities
	Alternative 2				16,943 sq m of new landbase plus 11,009 sq m cobble beach; Limited habitat improvement and creation opportunities
	Alternative 3				17,815 sq m of new land base plus 11,786 cobble beach; Compared to other alternatives, offers increased opportunities for habitat creation and improvement, particularly for ground-nesting waterfowl such as terns

42

Preliminary Evaluation – Natural/Biological

Natural/Biological Environment Criteria	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Migratory and Breeding Bird Impacts	Does alternative result in impacts to habitat for migratory or breeding bird communities?				Special consideration will be given to reduce potential impacts on nesting and migratory birds by regulating site access during construction
	Do Nothing/Maintenance Dredging				No impacts, but also no opportunities for improving waterfowl habitat
	Alternative 1				Will provide new land base for migratory stop overs; May offer limited improvements for stopovers as well as overwintering habitat; Aquatic habitat improvements may result in increased forage opportunities and food sources (e.g., zebra mussels colonizing underwater structures; some degree of fish community abundance and diversity increase as a result of aquatic habitat improvements)
	Alternative 2				Same as Alternative 1
	Alternative 3				Will provide new land base for migratory stop overs; May offer limited improvements for waterfowl and waterbird stopovers as well as overwintering habitat; Aquatic habitat improvements may result in increased forage opportunities and food (e.g., zebra mussels colonizing underwater structures; the most fish community abundance and diversity increase as a result of aquatic habitat improvements). Highest opportunity to create waterfowl nesting habitat (tern nesting habitat) - on isolated eastern breakerwater.

43

Preliminary Evaluation – Natural/Biological

Natural/Biological Environment Criteria	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Species of Interest Impacts	Does alternative impact species of interest/concern?				A single record of a fish species of concern – American eel, 1993 - exists for Ashbridges Bay. This record is considered to be an isolated report.
	Do Nothing/Maintenance Dredging				No impacts, but also no potential for habitat improvement
	Alternative 1				Footprint = 48,100 sq m; offers ability to improve habitat diversity in design of structures (e.g., cobble beach; surcharged groynes; surcharged revetment); compared to existing conditions, higher expected phosphorus levels may cause excessive growth of aquatic vegetation and thus negatively impact fish habitat and fish community, including species of interest/concern
	Alternative 2				Footprint = 53,000 sq m; ability to improve aquatic habitat etc. – same as Alternative 1
	Alternative 3				Footprint = 62,000 sq m; highest footprint, but also highest potential for improved habitat quality as an expected increase in total phosphorus level and corresponding impact on aquatic vegetation growth is small compared to increases expected for Alternatives 2 and 3. Improved habitat quality would result in positive impact on fish community, including sensitive species and/or species of concern

44

45

Preliminary Evaluation – Socio-Economic

Socio-Economic Environment	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Parks – Public Use and Parks Infrastructure Impacts	Does alternative impact public use and park infrastructure in the area?				
	Do Nothing/Maintenance Dredging			*	Recreational boating from boat launch impacted by unsafe navigation conditions
	Alternative 1	*			No impact to park use (boat launch, public use at park, etc.); ensures safe navigation for recreational boating
	Alternative 2	*			No impact to park use (boat launch, public use at park, etc.); ensures safe navigation for recreational boating
Parks Planning – Ashbridge’s Bay Park, Tommy Thompson Park and the Lake Ontario Park Master Plan	Does alternative impact the goals and objectives of existing planning initiatives in the area?				
	Do Nothing/Maintenance Dredging			*	No impact
	Alternative 1	*			Tommy Thompson Park (TTP): supports shoreline enhancement goals and provides for the ability to integrate designs, improving coastal habitat; Lake Ontario Park Master Plan: Connection from TTP to Ashbridge’s Bay Park could still be considered by Waterfront Toronto.
	Alternative 2	*			same as Alternative 1
Alternative 3	*			same as Alternative 1	

Preliminary Evaluation – Socio-Economic

Socio-Economic Environment	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Boat Club Facility and Operations Impacts	Does alternative impact boat club facilities, programs and operations?				
	Do Nothing/Maintenance Dredging			*	Navigation channel will continue to be compromised by sedimentation; livelihood of local boat clubs threatened because of unsafe navigation in and out of their facilities; annual disruptions from maintenance efforts
	Alternative 1	*			Navigation channel will be protected long term from sedimentation; impact is on use of area in front of ABTP for sailing school and canoes; access to open water will take more time
	Alternative 2	*			Navigation channel will be protected long term from sedimentation; impact is on use of area in front of ABTP for sailing school and canoes; access to open water will take more time
Alternative 3	*			Navigation channel will be protected long term from sedimentation; impact is on use of area in front of ABTP for sailing school and canoes; access to open water will take more time	

46

47

Preliminary Evaluation – Socio-Economic

Socio-Economic Environment	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Accessibility and Scenic Views Impact	Does alternative impact public access and/or existing scenic views?				
	Do Nothing			*	No increase in accessibility; currently public access areas have views of the ABTP operations
	Alternative 1	*			Will provide some buffer from the land level operations of ABTP; increase in public access
	Alternative 2	*			Same as Alternative 1
Non-motorized Recreational Water Use Impacts	Does alternative provide for sheltered / flatwater conditions required by canoes/kayaks?				
	Do Nothing			*	Sheltered area exists inside of Coatsworth Cut only
	Alternative 1	*			Although the areas behind the breakwater will not be flatwater in all conditions it will provide some shelter; largest sheltered area of all Alternatives
	Alternative 2	*			Although the areas behind the breakwater will not be flatwater in all conditions it will provide some shelter; similar sheltered area to Alternative 1
Alternative 3			*	Smallest sheltered area but still an improvement from existing	

Preliminary Evaluation – Cultural Heritage

Cultural Heritage Criteria	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
First Nations/Métis Interests	Does alternative impact any identified First Nations or Métis interests in the area?				TBD in consultation with First Nations/Métis. Draft evaluation will be provided to assist.
	Do Nothing/Maintenance Dredging				
	Alternative 1				
	Alternative 2				
Alternative 3					

48

Preliminary Evaluation – Feasibility/Cost

Feasibility/Cost Criteria	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Capital and Maintenance Costs	Compare alternatives, relative to one another, for cost to construct and maintain.				Costs included are estimates and show a large range because of the unpredictability of material sources/costs and potential fill revenue which are all economy/market driven. Costs will need to be reviewed in detailed design when implementation timing is finalized.
	Do Nothing/Maintenance Dredging			*	Annual costs for dredging are currently upwards of \$250,000 and not meeting full season needs. This cost is expected to increase annually; it is expected that the cost of dredging would exceed the lowest projected cost of implementation for all alternatives in ~20 years and ~30 years for the highest projected cost (estimating an \$500,000 annual dredging cost)
	Alternative 1	*			\$12.2- 6.6 million; Lowest cost Alternative (smallest volume of armour stone needed for breakwater); no annual maintenance; maintenance would be anticipated every 20 years
	Alternative 2	*			\$12.5- 6.9 million; Additional breakwater (deflector) increases cost nominally from Alternative 1; no annual maintenance; maintenance would be anticipated every 20 years
	Alternative 3		*		\$14.1- 8.7 million; Creation of channel makes this Alternative more costly than 1 and 2; no annual maintenance; maintenance would be anticipated every 20 years

49

Preliminary Evaluation – Feasibility/Cost

Feasibility/Cost Criteria	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Construction/ Implementation Impacts (Land and Water)	Does construction/implementation of alternative result in significant impacts to existing users (staging, access, disruption of use, etc.)?				Construction access is expected to be along Leslie Street. It is expected that truck traffic going to the Leslie Street Spit will decrease over the next few years and as a result any new traffic from this project should not exceed the current volume of trucks. In water construction will not affect recreational boat access to their clubs/boat launch etc.
	Do Nothing/Maintenance Dredging	*			Minimal disruption from dredging activities.
	Alternative 1			*	Will contribute to truck traffic in the local area. Impacts to public use of Ashbridge's Bay Park will be experienced during the construction of the breakwater off of the Park headland (will be constructed in the off season to try to minimize this)
	Alternative 2			*	Same as Alternative 1
	Alternative 3			*	Same as Alternative 1

50

Preliminary Evaluation – Feasibility/Cost

Feasibility/Cost Criteria	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Impacts on Other Projects	Does alternative produce impacts to projects not currently identified under Technical Considerations Criteria?				
	Do Nothing/Maintenance Dredging			*	No impacts identified.
	Alternative 1		*		Integrates other approved EA facilities.
	Alternative 2		*		Integrates other approved EA facilities.
	Alternative 3	*			Offers the best integration of the existing conditions and current ABTP operations (sea wall gates) and flexibility for other approved EA facilities.

51

Preliminary Evaluation – Technical

Technical Considerations	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Public Safety	Does alternative impact public safety during construction and/or day-to-day use following construction?				
	Do Nothing/Maintenance Dredging			*	Continuation of existing dredging operations have potentially more impact on public safety (severe navigation hazards) than limited time construction operations
	Alternative 1	*			Implementing the breakwater off of Ashbridge's Bay Park would require closure of an area of the trail/park to the public temporarily to keep the public away from the construction site and potential safety hazards; Construction of this component would be recommended to be undertaken in the off season (winter)
	Alternative 2	*			Same as Alternative 1
	Alternative 3	*			Same as Alternative 1

52


53 **Preliminary Evaluation – Technical**

Technical Considerations	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Safe Boat Passage	Does alternative impact the movement and interaction between anticipated types of watercraft; the Coast Guard Auxiliary Station; or Federal navigation safety guidelines?				
	Do Nothing/Maintenance Dredging			*	Current conditions pose issues for recreational boat traffic and challenges meeting Federal navigation standards
	Alternative 1	*			Design meets/exceeds Federal navigation standards
	Alternative 2	*			Design meets/exceeds Federal navigation standards
Shoreline Stability	Does alternative impact wave energy within the area and subsequently shoreline erosion?				
	Do Nothing/Maintenance Dredging			*	Portions of the shoreline in Ashbridge's Bay Park shoreline that have maintenance requirements will not be addressed
	Alternative 1	*			Erosion issues will be addressed at Ashbridge's Bay Park
	Alternative 2	*			Erosion issues will be addressed at Ashbridge's Bay Park
	Alternative 3	*			Erosion issues will be addressed at Ashbridge's Bay Park

Preliminary Evaluation – Technical

Technical Considerations	Questions/Design Concept	Preferred	Intermediate Preferred	Not Preferred	Notes
Dredging Impacts	Does alternative reduce annual long term dredging requirements?				
	Do Nothing/Maintenance Dredging			*	Annual dredging would need to continue to ensure safe navigation
	Alternative 1	*			Expect to provide decades of safe navigation
	Alternative 2	*			Expect to provide decades of safe navigation
Climate Change Impacts	Is the alternative able to adjust / function / adapt in the event of changing lake levels due to Climate Change?				Not expecting significant changes in water levels for Lake Ontario and there will be some changes in near shore wave climate but relatively minor close to shore.
	Do Nothing/Maintenance Dredging			*	Ability to adjust (increase dredging) but at an increased annual cost (if water levels drop)
	Alternative 1	*			Alternatives are designed with lake level fluctuations and likely variations in potential changes in wave climate were considered
	Alternative 2	*			Same as Alternative 1
	Alternative 3	*			Same as Alternative 1

54

 **Summary of Preliminary Evaluation Undertaken by City of Toronto and TRCA**

Concept	Not Preferred	Intermediate Preferred	Most preferred	Overall Resulting Rank
Do Nothing	16	1	4	Least Preferred
Alternative 1	5	3	13	Intermediate Preferred
Alternative 2	5	3	13	Intermediate Preferred
Alternative 3	4	6	14	Preferred

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 **Next Steps**



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Updated Timelines and Next Steps

- November 28: CLC#3 – Present Draft Evaluation and Preliminary Preferred Alternative
- **December 12: Deadline for submission of additional CLC comments on the preliminary evaluation**
- January 2014: PIC #2 - Present Draft Evaluation and Preliminary Preferred Alternative
- February 2014: Complete Draft ESR
- March 2014: Steering Committee and CLC Review of ESR
- May 2014: Submit ESR to City Council
- May/June 2014: Submit ESR to MOE for 30 day public review
- June/July 2014: EA process complete
- July 2014: Begin detailed design of the landform - integration of approved EAs
- Sept/October 2014: CLC and PIC for detailed design
- 2015: Implementation (dependent on budget approval)