Burlington Beach

Regional Waterfront Park Master Plan

MASTER PLAN UPDATE

&

IMPLEMENTATION PLAN

March 2023

Halton Region

ACKNOWLEDGMENT

The Region of Halton acknowledges the support that has been provided by the City of Burlington and Conservation Halton towards completing work to update the Burlington Beach Waterfront Park Master Plan Update and develop the Implementation Plan to support advancing the Master Plan.

The Region also is appreciative of the efforts of the technical consultants that have undertaken supporting studies and developed the Master Plan Update and Implementation Plan including: Ausenco, Zuzek Inc.(coastal engineering), Terraprobe (geotechnical), and ARA (heritage and archaeology).

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EXECUTIVE SUMMARY

In 2015, the Regional Municipality of Halton approved a new Master Plan for the Burlington Beach Waterfront Park (BBRWP) which includes Spencer Smith Park and Beachway Park. The Master Plan presents a Vision for the Park and proposes investments in infrastructure, as well as in restoration and enhancement of natural systems associated with Beachway Park, in order to advance the Vision.

To support implementation of the Master Plan, the Project Partners (Region of Halton, City of Burlington, and Conservation Halton) undertook work to update of the Master Plan, better understand constraints and opportunities associated with advancing key components of the Master Plan, and develop a plan and timeline for implementation.

Additional technical work completed as part of the Master Plan update will support the development of detailed designs, and construction plans, for advancing Master Plan elements and also support the development of applications for required permits and approvals. The scope of technical work completed as part of the Master Plan update included:

- Evaluating the technical feasibility of specific components of the Master Plan
- Updating portions of the Master Plan as required
- Undertaking technical studies to guide restoration of dunes and associated native vegetation, and
- Developing a phased Implementation Plan to guide the execution of the Master Plan.

The scope of information collected to inform the Master Plan update includes:

- Oblique photographs and bathymetric survey
- Update of shoreline change rates
- Nearshore wave and circulation model
- Sediment transport model
- Shoreline protection and dune stabilization recommendations and preliminary design
- Vulnerability and risk assessment of flooding and erosion
- Update of flood hazard line
- Engineering feasibility study
- Natural heritage inventory and analysis
- Invasive plant inventory
- Rehabilitation adaptive management plan
- Update to the Master Plan illustrations
- Cultural heritage and archaeological assessment, and
- Geotechnical assessment.

The above technical work is documented in 8 reports, submitted to the Project Partners, that support the recommendations, and Phased Implementation Plan, presented in this report.

MASTER PLAN UPDATES

Technical studies completed as part of the Master Plan update have demonstrated the urban beach faces challenges from extreme water levels and the Park shoreline, and associated infrastructure, would benefit from investments to make it more resilient to flood and erosion risk. As a result, modifications to the approved Master Plan include the following:

- **Living Shoreline:** Based on the vulnerability of the northern portion of Beachway Park to erosion, a nature-based solution to shoreline restoration and protection is not feasible and hybrid grey-green restoration solution has been proposed. The refined design concept features armour stone headlands and cobble beach cells, with this portion of the Master Plan being renamed “The Cobble Beach”.
- **Shoreline Walk:** The Shoreline Walk proposed in the Master Plan was deemed not technically feasible due to safety and constructability issues. As an alternative, a land-based lower trail was included in the updated Master Plan sketch that achieved the same objective of providing access to the waters edge in the Cobble Beach.
- **Realignment of Multi-use Trail:** The concept of a meandering trail within The Strand was replaced by a straight trail adjacent to the parking as the meandering trail would have damaged natural areas and was located in the Dynamic Beach Hazard Limit.

- **Rental Building and Pump House Deck:** The proposed new Rental Building and Pump House deck located in The Strand, may be in the Dynamic Beach Hazard Limit, pending the final design of the foredune restoration and consultation with Halton Conservation. New development associated with these structures will have to be evaluated once the foredune restoration and footprint design has been finalized.
- **Gas Fire Circles:** The proposed gas fire circles in the Cobble Beach and The Strand are not feasible due to their location within the Flood Hazard Limit and Dynamic Beach Hazard Limit. New locations, in areas safe from flooding and erosion once the foredune restoration is complete, are proposed.
- **Controlled Access Pathways and Foredune Restoration:** The original Master Plan did not provide details on the foredune restoration or marked controlled access pathways. The Beach and Dune Restoration Management Plan (Zuzek, 2022) provides direction on where and how foreshore restoration should be advanced as well as measures for controlling future access to ensure the success of dune rehabilitation efforts.
- **Non-motorized Boat Launch:** Located at the boundary between the Cobble Beach and The Strand, the functionality of this feature has been changed to provide access for maintenance equipment (e.g., Hydro One Networks Inc. (HONI) maintenance), future beach nourishment, and limited beach raking on the dry beach.
- **Dune Boardwalk:** The dune boardwalk is feasible but not in the location noted on the original Master Plan, since it was located on the dry beach and in the Dynamic Beach Hazard Limit, where it would be routinely subjected to wave forces during storms. The trail access points were maintained in the same location, but the boardwalk is proposed to be re-aligned further inland to correspond to the backdune area of Wind Beach.
- **Natural Beach Area:** The wooded area and dunes at Wind Beach are located under the HONI corridor where vegetation management practices conflict with proposed vegetation restoration objectives. The vision of a wooded area needs to be reviewed with HONI to develop vegetation management approaches that support Master Plan restoration objectives.

RESTORATION & REHABILITATION WORKS

As part of the Master Plan update, two technical studies were undertaken to inform the restoration of beach and dune areas and rehabilitation of vegetated areas of the Park. The information in these documents includes detailed technical specifications, for restoration and rehabilitation works, that will inform future detailed design and construction plans for advancing Master Plan elements.

The Beach and Dune Restoration and Management Plan for Beachway Park (Zuzek Inc. 2022) presents information describing what natural beach dune ecosystem should look like, existing conditions that will influence the development of detailed designs, and preliminary design for beach and dune restoration works that reflect the varying physical conditions in different areas of the beach and foreshore.

The Beachway Park Invasive Plant Inventory and Rehabilitation Adaptive Management Plan (Ausenco 2022b) describes the presence of invasive plant species in the Park and vegetation enhancement concepts involving the replanting of areas with native plants. Taken together, this information will guide future vegetation rehabilitation works by providing direction on invasive species removal and management and the replanting of areas with native vegetation typically found in regional beach dune ecosystems. The Plan identifies technical specifications including specific native plant species to be planted in five distinct rehabilitation zones throughout the Park including:

- **Cobble Beach Revegetation**
- **Foredune Stabilization Zone**
- **Natural Beach Zone**
- **Back Dune Rehabilitation Zone**
- **Landscape Enhancement Zone.**

The implementation of beach/dune restoration, and vegetation rehabilitation concepts, will be supported by an adaptive management framework, whereby restoration and rehabilitation works will be monitored to ensure design objectives (i.e., beach/dune restoration and establishment of native vegetation) are achieved. The implementation plan assumes that long-term monitoring, and adaptive management, of restoration and rehabilitation works will continue until such works become self-sustaining.

NEW APPROACHES TO PARK USE & MAINTENANCE

While the Master Plan presents a vision for restoring local ecosystems within Beachway Park, such areas will remain under significant pressure due to the high levels of use as well as historic operations and maintenance practices. As such, successful implementation of the Master Plan demands new approaches, to the way the Park is used and maintained including:

- **Controlling and managing access** – Controlling and managing access includes using a variety of mechanisms to encourage park users to avoid sensitive and/or restored areas of the park. Such mechanisms will include: fencing/exclusion to sensitive areas, closing off informal trails, using way finding to encourage pedestrian movements to focus on a large network of formal trails, and co-design of parking and formal trails networks.
- **Heavy Equipment Access Points** – Beach entrance and exit points need to be confined to the southern service access point until the northern access point within Wind Beach is constructed. Once the northern access point is in service, no other point should be used for entering and exiting the beach.
- **Beaching Grooming** - Ceasing regular mechanical raking of the beach in the southern portion of the Park is essential to the creation of a natural beach area and no raking or other maintenance activities should take place within 5 m of the rehabilitated foredune.
- **Operations and Maintenance** – Recognizing the sensitive ecosystems within the Park, operations and maintenances practices need to be updated and refined, through development of a Operations and Maintenance Plan.

EDUCATION, AWARENESS & STEWARDSHIP

Because effective implementation of the Master Plan demands new approaches to the way the Park is used and maintained, education and awareness activities, and engagement with key partners and stakeholders, is critical to effective Master Plan implementation. As such Master Plan implementation will be supported by the development and delivery of **Communications Plan**.

Key objectives of the Communications Plan will be to:

- Raise awareness of Master Plan implementation amongst users and key stakeholders including changes in how the Park will operate in the future
- Inform all interests regarding the schedule, and key milestones associated with Master Plan implementation
- Build partnerships with users and key stakeholders, including stewardship groups and adjacent land owners, who can provide support in advancing the Master Plan, and
- Educate users about new practices for using and maintaining the Park and protecting its unique features and ecology.

Key messages emerging from the **Communications Plan** will help to raise awareness of issues such as the sensitivity of dune communities to foot traffic and disturbance and how changes in traditional maintenance practices, such as beach raking, will support the restoration of local ecosystems.

The **Communications Plan** will also assist in harnessing the energy and interest of local community groups which represent an important resource to help advance restoration and rehabilitation works and changing the way that users interact with the Park.

PHASED IMPLEMENTATION PLAN

The proposed **Phased Implementation Plan** assumes all Master Plan elements will be advanced over a 12 year period between Year 1 (2023) and Year 12 (2035) with Master Plan elements, within different zones of the Park, advanced in a phased manner.

The construction of The Cobble Beach headlands is proposed to be advanced first as this work underpins and supports restoration of beach and back dune areas and may take multiple construction seasons to complete. It will also require heavy equipment and material staging areas and should be completed prior to improvements in The Strand. Designing and constructing Master Plan elements associated with The Cobble Beach is assumed to take place between 2023 and 2027.

The design and construction of Master Plan elements associated with Wind Beach and The Strand are the second priority in terms of advancing design and construction of Master Plan elements. Work in these two zones will be advanced in concert, as a single design and construction contract, given the integrated nature of the zones and similarity in the construction and restoration tasks to be undertaken. Designing and constructing Master Plan elements associated with Wind Beach and The Strand are assumed to take place between 2024 and 2029.

With respect to potential relocation of or modification to existing HONI transmission towers that cross the Park, the Phased Implementation Plan assumes the existing towers will remain in place. If a decision is made in the future to re-locate or bury the towers, the Phased Implementation Plan will modified accordingly.

The schedule for advancing Master Plan elements associated with The Skyway and The Commons, are contingent on land acquisition and/or access agreements. As such, the implementation plan schedule assumes near term (2023 - 2026) implementation tasks for these areas will focus on land acquisition and developing access agreements. It is assumed that the design and construction of The Skyway will occur between 2024 and 2029 and work associated with The Commons occurring between 2027 and 2031.

Specific environmental permitting required, to support the construction of specific Master Plan elements, will be confirmed in concert with undertaking detailed design, and will be included in the scope of work for detailed design contracts. The design contractor will also take steps, following completion of detailed design, to develop and submit applications for permits and approvals such that approvals are in place prior to the selection of a construction contractor.

MASTER PLAN IMPLEMENTATION TASKS

In addition to design, procurement and construction of specific Master Plan elements, there are a number of administrative, and program delivery tasks that are supportive of the long-term delivery of the Master Plan. Assumed start dates for these tasks are proposed in, **Figure 10.1.** These overarching Master Plan Implementation Tasks include:

- **Developing a Master Plan Implementation Committee** – A Master Plan Implementation Committee, with representatives from the Region and Project Partners, will be established to provide direction to the project team that is established to advance key tasks associated with the Phased Implementation Plan.
- **Securing resources to support Master Plan implementation** - Master Plan implementation will require a Project Manager with experience in design, procurement, and construction of -similar works as well as contract management of such services. Other technical expertise and resources that will be required to support Master Plan implementation will include personnel with expertise in environmental management, communications, as well as expertise in park operations and management.
- **Funding Strategy** - Subject to completing an updated cost estimate for Master Plan implementation, a Funding Strategy needs to be developed to identify sources of funding, both internal and external, to support construction of the Master Plan elements as well any long-term monitoring activities.
- **Communications Plan** - A communications plan, that anticipates the challenges and opportunities associated with various stages of Master Plan implementation, and proposes communication mechanisms to capitalize on potential opportunities and address potential challenges, needs to be developed. The communications plan will facilitate the development of partnerships with funding partners, federal authorities, adjacent landowners, stewardship interests and users.
- **Operations and Maintenance Plan** - Successful implementation of the Master Plan assumes that, going forward, there will be changes in the way the Park is operated and managed. As such, an important deliverable to support Master Plan implementation, is an Operations and Maintenance Plan that establishes operations and management practices that align with restoration objectives and anticipated changes in Park use.
- **Adaptive Management Plan Monitoring** – An important task throughout implementation will be tracking adaptive management monitoring results to ensure restoration objectives have been achieved and taking corrective measures where they have not (i.e., additional effort on invasive species removal, replanting of native plants, changes to access points etc.).

- **Park Programming Strategy** – Master Plan implementation needs to be supported by a Programing Strategy that focuses on profiling new infrastructure and encouraging new ways for users to experience the Park. The Park Programming Strategy and Communications Plan need to be advanced in an integrated manner such that Park programming aligns with, and supports, key messages in the Communications Plan.
- **10 Year Master Plan Review** - The Master Plan includes a recommendation for a 10 Year review of the Master Plan. In the context of the proposed scope of work presented in the Phase Implementation Plan, it is recommended that the first Master Plan Review be undertaken in approximately Year 6 (2029) once final design of works at The Cobble Beach, The Strand, and Wind Beach have been design and construction advanced and all remaining land/access issues are resolved.

1.0
INTRODUCTION

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The Burlington Beach Regional Waterfront Park (BBRWP) is located at the western end of Lake Ontario (**see Figure 1.0.1**) and includes two City of Burlington Parks: Spencer Smith; and Beachway Park, along the shoreline of Lake Ontario. The Regional Municipality of Halton (Halton Region) approved the current Master Plan for the BBRWP on May 27, 2015, which builds on the initial master plan approved in 1987 and updated in 1994.

Figure 1.0.1 - Existing Burlington Beach Regional Waterfront Park.

To date, advancing the Master Plan vision for Spencer Smith Park has been led by Halton Region, in collaboration with their Project Partners, which include the City of Burlington and Conservation Halton.

The development of the Master Plan recognizes, and builds on, the diverse range of environmental, economic, cultural and recreational values that the Park provides and which are enjoyed by the residents of the City, Region and Province.

The development of the Master Plan recognizes, and builds on, the diverse range of environmental, economic, cultural and recreational values that the Park provides and which are enjoyed by the residents of the City, Region and Province. The Master Plan also recognizes that, due to the importance of the Park to a range of users, and anticipated growth in the GTA, the Park faces high levels of use which are anticipated to increase in the future.

In this context, the Master Plan provides a road map for future investments that will facilitate ongoing use by a range of users while also protecting its complex and environmentally sensitive ecosystems.

In addition to pressure on the Park from users, record high lake levels of 2017 and 2019 have demonstrated Beachway Park faces challenges from high water levels and storm events and would benefit from enhancements to address climate change related impacts. In addition, the Park and surrounding area have experienced more than a century of anthropogenic disturbances that have altered the landscape and disrupted the natural processes of a healthy beach dune system.

Higher Lake Ontario water levels and ice-free winters are projected for the future due to climate change (Zuzek Inc., 2022), which will magnify all of these existing challenges.

In order to address the context of historic impacts to the Park, and anticipated future changes associated with climate change, and anticipated growth in Park use, achieving the vision set out in the Master Plan for Beachway Park requires a significant amount of capital investment, in the five Zones presented in **Figure 1.0.2** (The Cobble Beach, The Strand, Wind Beach, The Commons, and The Skyway).

Figure 1.0.2 - Proposed new Master Plan zones for Beachway Park.

Given the magnitude and value of the planned infrastructure upgrades proposed by the Master Plan, and the recognition that the Park remains at risk to flooding and further erosion, the Project Partners identified the need to undertake an update of the Master Plan in order to:

- Evaluate the feasibility of advancing specific elements of the Master Plan
- Update portions of the Master Plan as required
- Undertake additional technical studies to guide rehabilitation and restoration of dunes and associated native vegetation, and
- Develop a phased implementation plan to guide the execution of the Master Plan.

Updates to the Master Plan that have been undertaken, and are summarized in this Master Plan Update and Implementation Plan, were informed by technical studies that collected additional information to support refinements to the Master Plan. The scope of such information includes:

- Oblique photographs and topographic and bathymetric surveys
- Update of shoreline change rates
- Nearshore wave and circulation model
- Sediment transport model
- Shoreline protection and dune stabilization recommendations and preliminary design
- Vulnerability and risk assessment of flooding and erosion
- Update of flood hazard limit and dynamic beach hazard limit
- Engineering feasibility study
- Natural heritage inventory and analysis
- Invasive plant inventory
- Rehabilitation adaptive management plan
- Update to the master plan illustrations
- Cultural heritage and archaeological assessment, and
- Geotechnical assessment.

The above technical work is documented in 8 reports, submitted to the Project Partners, that support the recommendations, and Phased Implementation Plan, presented in this report and include the following:

- Beachway Park Invasive Plant Inventory and Rehabilitation Adaptive Management Plan (Ausenco 2022a).
- Natural Heritage Inventory and Analysis (Ausenco 2022b)
- Beach and Dune Restoration and Management Plan for Beachway Park (Zuzek Inc. 2022)
- Burlington Beach Transmission Line Relocation Project (Ausenco 2022c)
- Engineering Feasibility Study (Ausenco 2023)
- Geotechnical Assessment (Terraprobe 2021)
- Beachway Park Cultural Heritage (ARA 2021)
- Beachway Park Archaeological Assessment (ARA 2022)

This **Master Plan Update and Implementation Plan** uses the recommendations and key findings of the above technical reports in a manner that builds on the Master Plan and presents:

- Changes to the Master Plan that have been made as a result of Plan Update.
- An overview of actions required to protect the dynamic beach ecosystem through the restoration and protection of dunes, beaches, and vegetation communities
- A description of new approaches to park use and maintenance that compliment restoration works
- An overview of the Adaptive Management Plan that will be developed to guide restoration, protection and enhancement efforts
- Education, awareness and stewardship approaches that will be required, in order to build support with Park users, for implementing the Master Plan
- A description of partnerships required to advance actions such as property acquisition, securing funding, and developing approaches to operations and maintenance activities that align with the Master Plan vision, and
- A phased approach, and schedule, to support Master Plan implementation.

2.0
UPDATES TO THE MASTER PLAN

UPDATES TO THE MASTER PLAN

Technical studies completed as part of the Master Plan update have demonstrated the urban beach faces challenges from extreme water levels and the Park shoreline, and associated infrastructure, would benefit from investments to make it more resilient to flood and erosion risk, during high water and wave events. As a result, some necessary modifications to the approved Master Plan have been identified including:

Living Shoreline

Based on the vulnerability of the northern portion of Beachway Park to erosion and the limited sediment supply to this area, a nature-based solution to shoreline restoration and protection is not feasible. A hybrid grey-green restoration solution has been proposed, featuring armour stone headlands and cobble beach cells, with this portion of the Master Plan being renamed “Cobble Beach”.

Shoreline Walk:

The Shoreline Walk proposed in the Master Plan was deemed not technically feasible due to safety concerns during storms and constructability issues. As an alternative, a land-based lower trail was included in the updated Master Plan sketch that achieved the same objective of providing access to the waters edge at Cobble Beach without the safety risks, design uncertainty, and at a lower cost than the original Shoreline Walk.

Realignment of Multi-use Trail:

The concept of a meandering trail within The Strand was dropped for a straight trail adjacent to the parking (similar to existing conditions). The meandering trail would have damaged natural areas, require significant tree removal, and was located in the Dynamic Beach Hazard Limit.

Rental Building and Pump House Deck:

The proposed new Rental Building and Pump House deck located in The Strand, may be in the Dynamic Beach Hazard Limit, pending the final design of the foredune restoration and consultation with Halton Conservation. Any new development associated with these proposed structures will have to be evaluated once the foredune restoration and footprint proposed in Zuzek (2022) has been finalized with design drawings.

Gas Fire Circles:

The proposed gas fire circles at Cobble Beach and The Strand are not feasible due to their location within the Flood Hazard Limit and Dynamic Beach Hazard Limit. New locations, in areas safe from flooding and erosion once the foredune restoration is complete, are proposed.

Controlled Access Pathways and Foredune Restoration:

The original Master Plan did not provide specific details on the foredune restoration or the requirement for marked controlled access pathways from the parking areas to the beach. The Beach and Dune Restoration Management Plan (Zuzek, 2022) provides detailed direction on where and how foreshore restoration should be advanced as well as measures for controlling future access to ensure the success of dune rehabilitation efforts, which are vital to reducing the existing flood and erosion hazards at the site.

Non-motorized Boat Launch:

Located at the boundary between Cobble Beach and The Strand, the functionality of this feature has been changed to provide access for maintenance equipment (e.g., Hydro One Networks Inc. (HONI) maintenance), emergency access, future beach nourishment, and limited beach raking on the dry beach.

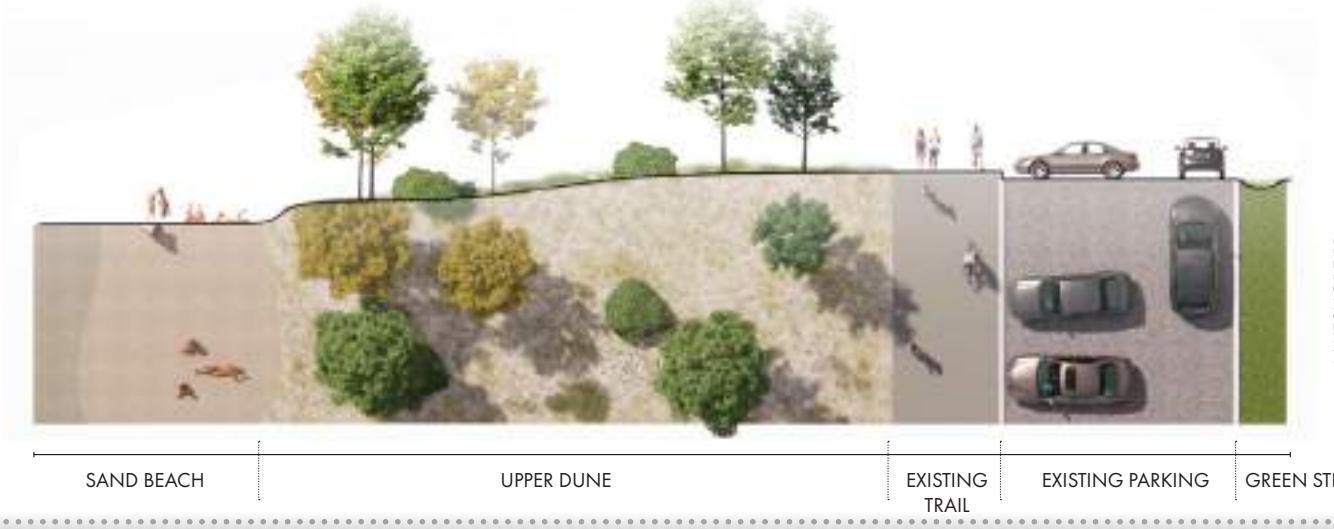
Dune Boardwalk:

The dune boardwalk is feasible but not in the location noted on the original Master Plan, since it was located on the dry beach and in the Dynamic Beach Hazard Limit, where it would be routinely subjected to wave forces during storms. The trail access points were maintained in the same location, but the boardwalk is proposed to be re-aligned further inland to correspond to the backdune area of Wind Beach.

Natural Beach Area:

The wooded area and dunes mentioned in the Master Plan at Wind Beach are located under the HONI corridor. The current vegetation management practices, associated with maintenance of the HONI ROW, conflict with proposed vegetation restoration objectives of this plan. The vision of a wooded area needs to be modified through discussions with HONI to develop vegetation management approaches that align with Master Plan restoration objectives.

EXISTING CONTIDION



PROPOSED PARKING LOT

PROPOSED LANDSCAPE AREA

BURLINGTON BEACH

KEY PLAN

MHBC
PLANNING
URBAN DESIGN
& LANDSCAPE
ARCHITECTURE

SITE LEGEND

1. BEACON LOCATION
2. 6m WIDE SHARED PATHWAY
3. 4m WIDE SHARED PATHWAY (WHERE EXISTING TREES AND FEATURES DO NOT ALLOW FOR EXPANSION)
4. PICNIC AREA
5. ACCESSIBLE REST AREA
6. ACCESSIBLE SHELTER AND REST AREA
7. DUNE WOODEN BOARDWALK
8. FORMAL BEACH ACCESS
9. BIOSWALE
10. BIOSWALE PEDESTRIAN CROSSING
11. FIRE CIRCLE
12. PLAY AND PICNIC AREA
13. BIKE TRAIL
14. WASHROOMS
15. BEACH VOLLEYBALL COURTS
16. MULTI USE COURT
17. LAWN SPORTS
18. FOOD TRUCK AREA
19. GATEWAY FEATURE
20. SWING GATE ACCESS
21. HIGH CONTRAST TRAFFIC CALMING
22. SCREENED MAINTENANCE YARD
23. DUNE REGENERATION EDUCATIONAL SIGNAGE
24. INTERPRETIVE INSTALLATION
25. ACCESSIBLE WATERFRONT TRAIL. PROVIDE STANDARD GUARD AT WALLS HIGHER THAN 600MM

BEACH RESTORATION LEGEND

Refer to Beach and Dune Restoration and Management Plan Report (Zuzek Inc. 2022)

1. COBBLE BEACH (NOURISHED)
2. STEPPED SEATWALL/BEACH CURB
3. ARTIFICIAL HEADLAND (HYDRO TOWER REINFORCEMENT)
4. COBBLE NOURISHMENT RESTORED WITH NATIVE VEGETATION AT BACK OF BEACH
5. BURIED COBBLE BERM COVERED WITH DUNE RESTORATION
6. DUNE RESTORATION
7. BOULDER CLUSTER/DETACHED GROYNE

VEGETATION REHABILITATION LEGEND

Refer to Beachway Park Invasive Plant Inventory and Rehabilitation Adaptive Management Plan Report (Hemmera 2022)

1. COBBLE BEACH REVEGETATION
2. COBBLE BEACH LANDSCAPE ENHANCEMENT
3. THE STRAND FOREDUNE STABILIZATION
4. PARKING LOTS AND STREET TREES
5. THE STRAND LANDSCAPE ENHANCEMENT

MINISTRY OF TRANSPORTATION ONTARIO

MCMASTER HALTON FAMILY HEALTH CENTRE

JOSEPH BRANT HOSPITAL

NORTH SHORE BLVD.

JOSEPH BRANT MUSEUM

THE STRAND

THE COBBLE BEACH

LAKESHORE RD.

VEHICLE PARKING [20 SPACES]

E

C

D

C

D

THE COBBLE BEACH

SPENCER SMITH PARK

NEW AVERAGE SUMMER WATERLINE

NEW AVERAGE SUMMER WATERLINE

NEW AVERAGE SUMMER WATERLINE

A

B

FLEXIBLE OPEN SPACE

BIOSWALE INFILTRATION FROM PARKING LOT

PEDESTRIAN PAVED ACCESS PATH

SWING GATE ACCESS FOR MAINTENANCE EQUIPMENT

EXISTING HYDRO TOWER

ACCESS FOR MAINTENANCE EQUIPMENT

ARMOUR STONE STEPS

EXISTING HYDRO TOWER

SWING GATE ACCESS FOR MAINTENANCE EQUIPMENT

STEPS OVERLOOKING WATERFRONT

EXISTING PLATFORM TO BE REVITALIZED

LAKE ONTARIO

A FIRST NATIONS INTERPRETIVE AREA [FORMERLY GATEWAY PARK/LINK]

* Images are representative only. Refer to recommendations by Ausenco Engineering Report


Park Hyatt Beaver Creek Resort & Spa Outdoor Firepit


Ontario Place Public Fire Pit

B ECOLOGICAL INTERPRETIVE AREA

* Images are representative only

C PICNIC SHELTER AND REST AREAS

* Images are representative only. Shop drawings required for final selection. Metal shelters and pavilions to follow similar pattern throughout park


Spencer Smith Park Shade Structure


Steel Pavilion

D SITE FURNITURE

* To match existing site furniture.
Landscape Forms Austin Bench. Backed; aluminum boards with arms. Final design to be approved by City of Burlington. All furniture and placement to be accessible.


Landscape Forms Austin Bench

E VEHICLE PARKING AND BIOSWALE

* All drainage in parking lots to drain to specified bioswale


Typical planted parking median


Typical bioswale crossing

SITE LEGEND

1. BEACON LOCATION
2. 6m WIDE SHARED PATHWAY
3. 4m WIDE SHARED PATHWAY (WHERE EXISTING TREES AND FEATURES DO NOT ALLOW FOR EXPANSION)
4. PICNIC AREA
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8. FORMAL BEACH ACCESS
9. BIOSWALE
10. BIOSWALE PEDESTRIAN CROSSING
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23. DUNE REGENERATION EDUCATIONAL SIGNAGE
24. INTERPRETIVE INSTALLATION
25. ACCESSIBLE WATERFRONT TRAIL. PROVIDE STANDARD GUARD AT WALLS HIGHER THAN 600MM
26. NATIVE PLANT EDUCATIONAL GARDEN

BEACH RESTORATION LEGEND

Refer to Beach and Dune Restoration and Management Plan Report (Zuzek Inc. 2022)

1. COBBLE BEACH (NOURISHED)
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6. DUNE RESTORATION
7. BOULDER CLUSTER/DETACHED GROYNE

VEGETATION REHABILITATION LEGEND

Refer to Beachway Park Invasive Plant Inventory and Rehabilitation Adaptive Management Plan Report (Hemmera 2022)

1. THE STRAND LANDSCAPE ENHANCEMENT
2. PARKING LOTS AND STREET TREES
3. THE STRAND FOREDUNE STABILIZATION
4. THE COMMONS LANDSCAPE ENHANCEMENT
5. BACK DUNE TRANSITION AREA
6. BACK DUNE REHABILITATION
7. LAKESHORE PARKWAY LANDSCAPE ENHANCEMENTS WITH BIOSWALE

A HIGH CONTRAST TRAFFIC CALMING

* Images are representative only. Pattern and colour to be determined at later phase.
* All examples shown below from Hub Surface Systems


Gyro Park, Saanich BC


Traffic calming median, Montreal QC


Doncaster Greenway, Victoria BC


Burlington Promenade, Burlington ON

B THEMED PLAY AND PICNIC AREA

* Images are representative only. Playgrounds by *Earthscape: Playground Design and Build*


Sir Wilfred Laurier Park, Edmonton AB


Johnston McVay Park, Westerville OH

C FIRE PIT

* Images are representative only. Refer to recommendations by Ausenco Engineering Report


Park Hyatt Beaver Creek Resort & Spa Outdoor Firepit


Ontario Place Public Fire Pit

D VEHICLE PARKING AND BIOSWALE

* All drainage in parking lots to drain to specified bioswale


Typical planted parking median


Typical bioswale crossing

E SITE FURNITURE

* To match existing site furniture. Landscape Forms Austin Bench. Backed; aluminum boards with arms. Final design to be approved by City of Burlington. All furniture and placement to be accessible.


Landscape Forms Austin Bench

SITE LEGEND

1. BEACON LOCATION
2. 6m WIDE SHARED PATHWAY
3. 4m WIDE SHARED PATHWAY (WHERE EXISTING TREES AND FEATURES DO NOT ALLOW FOR EXPANSION)
4. PICNIC AREA
5. ACCESSIBLE REST AREA
6. ACCESSIBLE SHELTER AND REST AREA
7. DUNE WOODEN BOARDWALK
8. FORMAL BEACH ACCESS
9. BIOSWALE
10. BIOSWALE PEDESTRIAN CROSSING
11. FIRE CIRCLE
12. PLAY AND PICNIC AREA
13. BIKE TRAIL
14. WASHROOMS
15. BEACH VOLLEYBALL COURTS
16. MULTI USE COURT
17. LAWN SPORTS
18. FOOD TRUCK AREA
19. GATEWAY FEATURE
20. SWING GATE ACCESS
21. HIGH CONTRAST TRAFFIC CALMING
22. SCREENED MAINTENANCE YARD
23. DUNE REGENERATION EDUCATIONAL SIGNAGE
24. INTERPRETIVE INSTALLATION
25. ACCESSIBLE WATERFRONT TRAIL. PROVIDE STANDARD GUARD AT WALLS HIGHER THAN 600MM
26. NATIVE PLANT EDUCATIONAL GARDEN
27. SKYWAY OFFSET

BEACH RESTORATION LEGEND

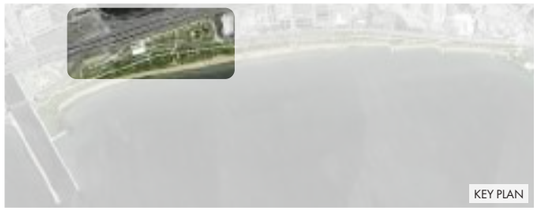
Refer to Beach and Dune Restoration and Management Plan Report (Zuzek Inc. 2022)

1. COBBLE BEACH (NOURISHED)
2. STEPPED SEATWALL/BEACH CURB
3. ARTIFICIAL HEADLAND (HYDRO TOWER REINFORCEMENT)
4. COBBLE NOURISHMENT RESTORED WITH NATIVE VEGETATION AT BACK OF BEACH
5. BURIED COBBLE BERM COVERED WITH DUNE RESTORATION
6. DUNE RESTORATION
7. BOULDER CLUSTER/DETACHED GROYNE

VEGETATION REHABILITATION LEGEND

Refer to Beachway Park Invasive Plant Inventory and Rehabilitation Adaptive Management Plan Report (Hemmera 2022)

1. PARKING LOTS AND STREET TREES
2. STORMWATER MANAGEMENT POND
3. THE STRAND FOREDUNE STABILIZATION
4. THE COMMONS LANDSCAPE ENHANCEMENT
5. BACK DUNE TRANSITION AREA
6. BACK DUNE REHABILITATION
7. LAKESHORE PARKWAY LANDSCAPE ENHANCEMENTS WITH BIOSWALE
8. WIND BEACH FOREDUNE STABILIZATION



SITE LEGEND

1. BEACON LOCATION
2. 6m WIDE SHARED PATHWAY
3. 4m WIDE SHARED PATHWAY (WHERE EXISTING TREES AND FEATURES DO NOT ALLOW FOR EXPANSION)
4. PICNIC AREA
5. ACCESSIBLE REST AREA
6. ACCESSIBLE SHELTER AND REST AREA
7. DUNE WOODEN BOARDWALK
8. FORMAL BEACH ACCESS
9. BIOSWALE
10. BIOSWALE PEDESTRIAN CROSSING
11. FIRE CIRCLE
12. PLAY AND PICNIC AREA
13. BIKE TRAIL
14. WASHROOMS
15. BEACH VOLLEYBALL COURTS
16. MULTI USE COURT
17. LAWN SPORTS
18. FOOD TRUCK AREA
19. GATEWAY FEATURE
20. SWING GATE ACCESS
21. HIGH CONTRAST TRAFFIC CALMING
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24. INTERPRETIVE INSTALLATION
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5. BURIED COBBLE BERM COVERED WITH DUNE RESTORATION
6. DUNE RESTORATION
7. BOULDER CLUSTER/DETACHED GROYNE
8. OPTIONAL REPAIRS TO EXISTING SPUR

VEGETATION REHABILITATION LEGEND

Refer to Beachway Park Invasive Plant Inventory and Rehabilitation Adaptive Management Plan Report (Hemmera 2022)

1. PARKING LOTS AND STREET TREES
2. THE COMMONS LANDSCAPE ENHANCEMENT
3. BACK DUNE TRANSITION AREA
4. WIND BEACH FOREDUNE STABILIZATION
5. BACK DUNE REHABILITATION
6. SOUTHERN FORESTED AREA
7. NATURAL BEACH
8. THE SKYWAY LANDSCAPE ENHANCEMENT

BEACH RESTORATION LEGEND

Refer to Beach and Dune Restoration and Management Plan Report (Zuzek Inc. 2022)

1. COBBLE BEACH (NOURISHED)
2. STEPPED SEATWALL/BEACH CURB
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7. BOULDER CLUSTER/DETACHED GROYNE
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VEGETATION REHABILITATION LEGEND

Refer to Beachway Park Invasive Plant Inventory and Rehabilitation Adaptive Management Plan Report (Hemmera 2022)

1. WIND BEACH FOREDUNE STABILIZATION
2. BACK DUNE REHABILITATION
3. SOUTHERN FORESTED AREA
4. NATURAL BEACH
5. THE SKYWAY LANDSCAPE ENHANCEMENT

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3.0
RESTORATION AND REHABILITATION WORKS

RESTORATION & REHABILITATION WORKS

The foundation for the implementation of the Master Plan includes nature-based solution to restore, and protect from nature hazards, the beach and dune areas as well as restoring native vegetation associated with beach and dune ecosystems including, to the extent possible, the removal of invasive plant species.

The following provides an overview of existing conditions and challenges, with respect to natural areas that require restoration and protection, as well as measures required to advance restoration and future protection of such areas. The technical information summarized below, draws from detailed technical studies which will inform future detailed design and construction of restoration and rehabilitation works proposed in the Master Plan.

3.1
BEACH & DUNE RESTORATION

Existing Conditions

A natural beach dune ecosystem is an integrated physical system created by coastal and terrestrial processes with built-in mechanisms enabling it to recover from flooding and erosion events. It is a system that is supported by unique plant communities that have adapted to the harsh coastal environment as shown in Figure Z1 which highlights the natural progression of habitat from the waters edge of a natural system, including dry beach, incipient dune, foredune, and backdune.

The natural beach and dune environment of Beachway Park in one of the rarest ecosystems in the Great Lakes, and without appropriate management approaches, is extremely sensitive to human disturbance which can lead to habitat loss.

The beach and dunes have experienced more than a century of anthropogenic disturbances that have altered the landscape and disrupted the natural processes that build healthy dune ecosystems, compromising its resilience to natural hazards.

This history, coupled with Beachway Park's location adjacent to a large urban population seeking recreation activities and the passive approach to Park management, has further exacerbated the decline of the beach dune system. Given the Park's importance as a recreational destination for local and regional visitors, as well as for visitors outside of the GTA, pressures on the Park from users are anticipated to increase in the future.

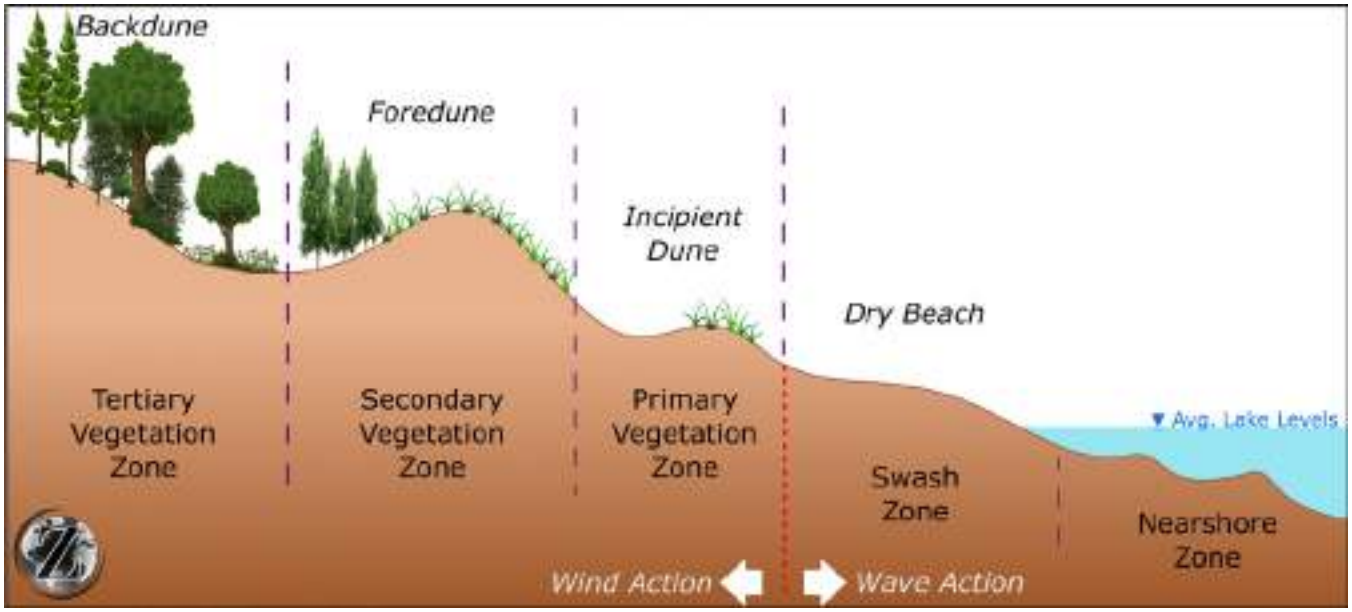


Figure 3.1.1 - Natural Beach Dune Ecosystem in the Great Lakes

Figure 3.1.2 provides a conceptual cross-section of the current conditions at Beachway Park. The beach is relatively flat and void of natural vegetation due to beach raking activities and the foredune is eroding. Non-native species have colonized the wooded backdune. In its current state, Beachway Park has very low resilience to coastal storms and periods of high lake levels.

This is why it was partially flooded in the summer of 2017 and 2019 and temporarily closed to the public. Even though this area is at risk of flood damage, it is noted that flood damage associated with recent storms did not extend to the washroom/concession building, playground or trail in areas beyond the dunes.

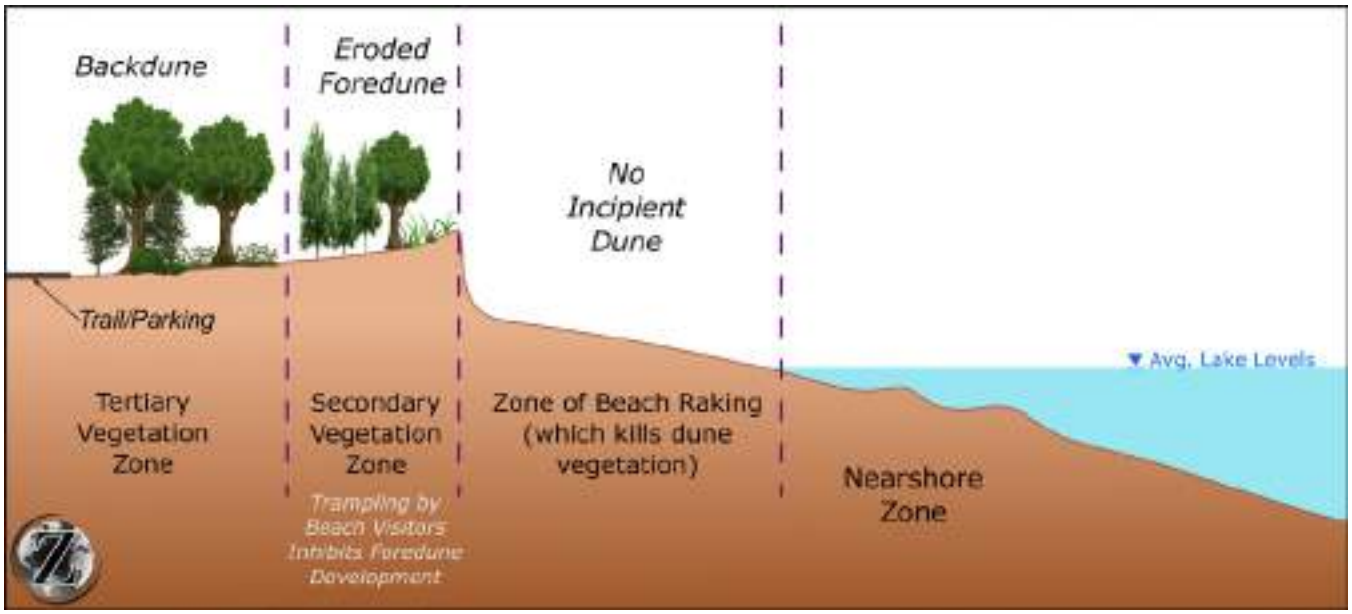


Figure 3.1.2 - Existing Conditions of Burlington Beach

The area between the dunes on Lake Ontario and Eastport Drive is low lying and within the Flood Hazard Limit due to decades of disturbance and degradation of the foredune by park users. Wave overtopping in the southern part of Cobble Beach and the northern part of The Strand during high water and/or storm events can flow south down Lakeshore Road, and pond in interior areas of the proposed park expansion, south of Bagotts Lane.

Figure 3.1.3 illustrates the extent of interior inundation (blue shading) for the Flood Hazard Limit in this area.

The storm sewer systems in this area are designed for a rainfall event with a 2-year return period, not direct inundation from a coastal flooding event at the 100-year lake level. Therefore, with the existing site conditions a significant portion of the planned Master Plan upgrades to Beachway Park are located on hazardous lands where new development could be flooded and may not be permitted until the risk is reduced/ eliminated. The cornerstone of Ontario's coastal hazard mitigation strategy is to locate new development away from hazardous lands (PPS, 2020).

In general, waves arriving from the east, produce a net longshore movement of sediment from the north to the south and deposit material throughout the central and southern portions of the site along The Strand and Wind Beach. Visually this can be observed at the north end of the Park, where Cobble Beach features very little sandy material at the shoreline. The Cobble Beach shoreline is bypassed by transported sediment under most wave and longshore sediment movement conditions.

Hardening of the northern shore, in the area of Spencer-Smith Park and the remaining Burlington and Oakville shorelines to the north-east, has eliminated the historical natural supply of sediment to Cobble Beach.

Natural and healthy beach dune ecosystems have high resilience to coastal storms, erosion, and flooding and, while the Master Plan proposes investments to improve the resiliency of the existing beach and foreshore, many areas of Beachway Park are resilient and able to recover from extreme weather events. Despite severe impacts to the Beachway Park dune system during recent high water levels from 2017-2019, natural processes have started to restore the dunes. As shown in **Figure 3.1.4**, the wind has blown new sand into the eroded foredune and the beachgrass is re-establishing and migrating lakeward.

The field data monitored during the study demonstrated that the eroded beach and dune sediments in 2017 and 2019 were transported to the shallow nearshore zone (i.e., close to the waters edge). During periods of average and falling lake levels, waves transported the eroded sediment back onto the beach and wind blows the sand back into the foredune, as shown in **Figure 3.1.4**.

Observations throughout the study suggest that feedback mechanisms between the dune, sandy beach, and the nearshore continue to occur in the central and southern portion of The Strand and Wind Beach.

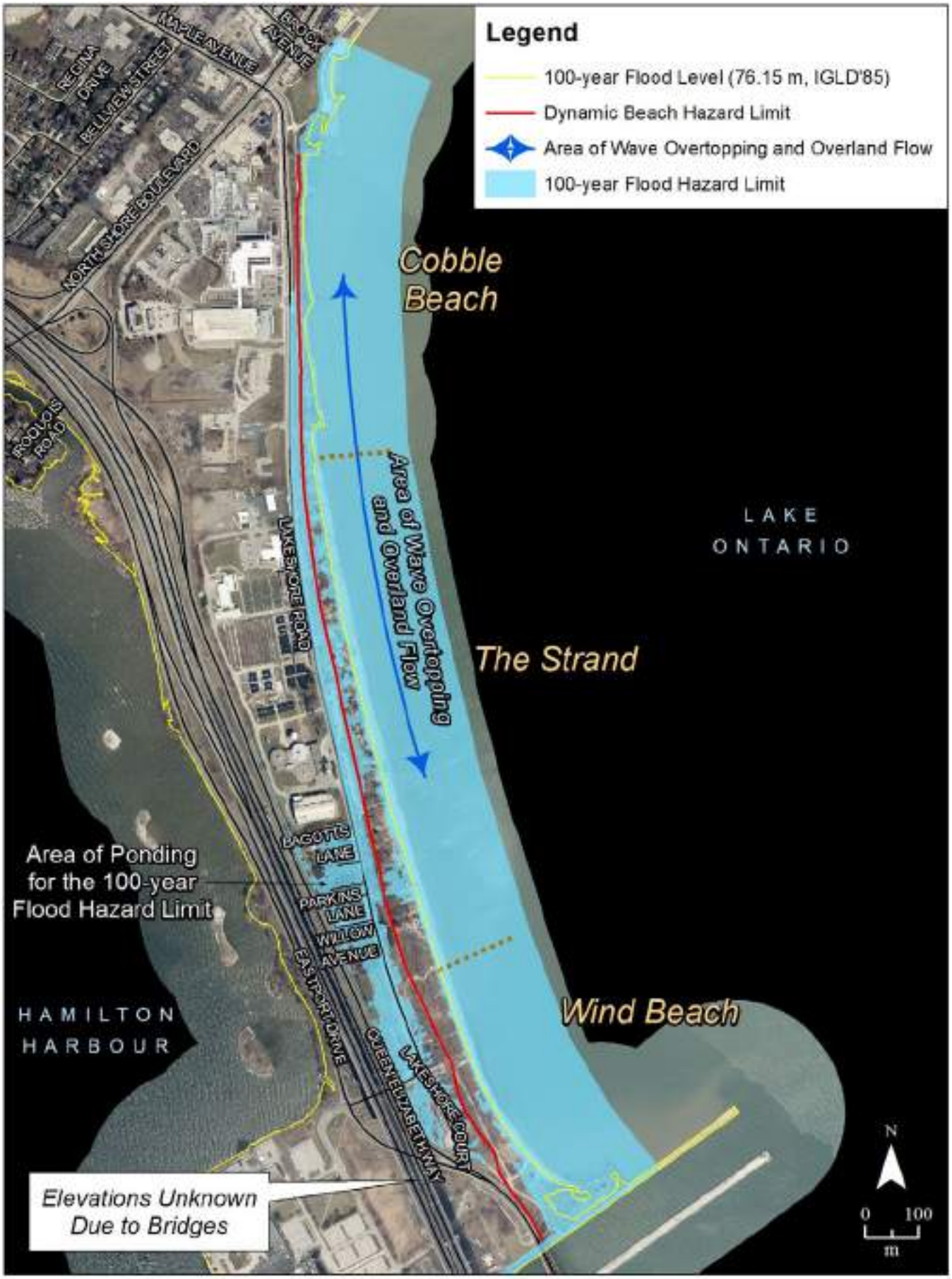


Figure 3.1.3 - Extent of the 100-year Flood Level for the Existing Site Conditions

Therefore, improving the health of the dune system through restoration, can build the necessary resiliency for most areas of the Park against erosive forces that occur during periods of high lake levels and severe storm events.

Figure 3.1.4 - Wind Transported Sand Accumulated at the Base of the Eroded Foredune.

Dune rehabilitation can also generate multiple co-benefits, including protecting infrastructure from coastal hazards, reducing maintenance costs associated with wind-blown sand, enhancing the beach for recreation, maintaining beach width during periods of high lake levels by transferring sand from the foredune to the nearshore and enhance or restore ecological conditions including the presence of vegetation that provides wildlife habitat.

Beach and Dune Restoration – Approach and Concept

To the degree possible, nature-based solutions to stabilize the beach and dunes have been proposed. In areas where the foredune has been eroded, such as the central and southern portion of The Strand, the dune elevation will need to be increased to an appropriate elevation to withstand waves from overtopping during the 100-year lake level (the design standard for mitigating hazards in Ontario).

Rehabilitation of the dune profile in this area will occur in a manner shown in **Figure 3.1.5**. For areas of Wind Beach where dunes of sufficient elevation occur, rehabilitation will focus on a new foredune as shown in **Figure 3.1.6**.

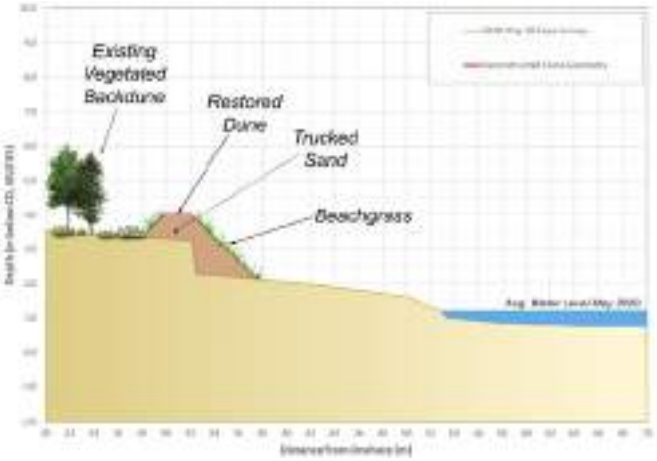


Figure 3.1.5 - Rehabilitation of dune profile

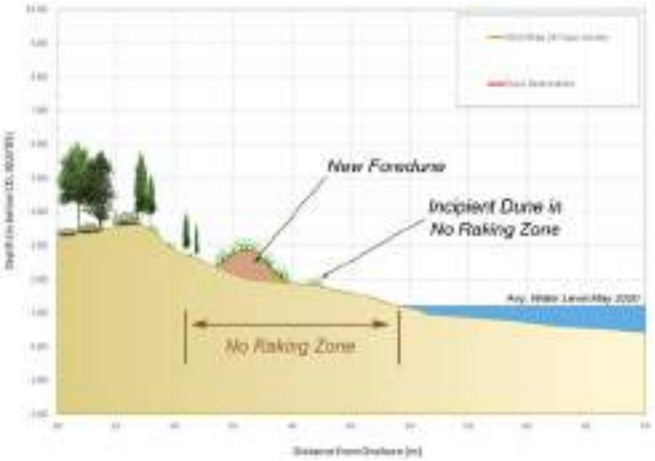


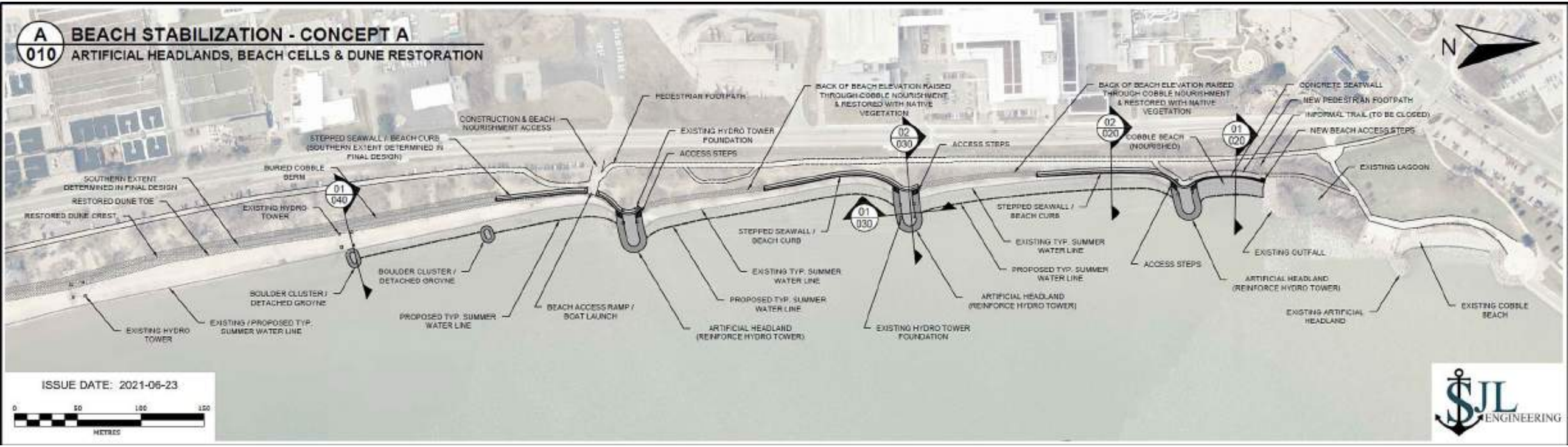
Figure 3.1.6 - Rehabilitation of dune with significant elevation

At In the Cobble Beach area, where the level of erosion is highest and the beach is non-existent during periods of high lake levels, a complete nature-based solution was not possible. Therefore, a headland-beach system was designed to address future predicted high lake levels and coastal storms. The recommended design for the Cobble Beach and a small amount of the beach in northern portion of The Strand are shown in **Figure 3.1.7.**

Cobble Beach is stabilized with three armour stone headlands and the beach cells are nourished with upland sediment. A stepped beach curb at the northern portion of The Strand will reduce flooding risk, as well as preventing further erosion.

An access ramp will provide equipment access for future maintenance events. The two proposed boulder clusters at the waters edge in **Figure 3.1.7** will also enhance beach width for the northern portion of The Strand.

Once implemented, the proposed beach enhancements and dune stabilization measures will protect interior portions of the Park from flooding and allow the beach and dunes to recover naturally from periods of high lake levels. Preliminary design of the headland-beach system and foredune restoration, and the rationale supporting the design are contained in the Beach and Dune Restoration and Management Plan for Burlington Beach (Zuzek Inc. 2022).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010
BEACH STABILIZATION - CONCEPT A
ARTIFICIAL HEADLANDS, BEACH CELLS & DUNE RESTORATION
N
SOUTHERN EXTENT DETERMINED IN FINAL DESIGN
RESTORED DUNE TOE
RESTORED DUNE CREST
BURIED COBBLE BERM
STEPPED SEAWALL / BEACH CURB (SOUTHERN EXTENT DETERMINED IN FINAL DESIGN)
CONSTRUCTION & BEACH NOURISHMENT ACCESS
PEDESTRIAN FOOTPATH
EXISTING HYDRO TOWER FOUNDATION
ACCESS STEPS
BACK OF BEACH ELEVATION RAISED THROUGH COBBLE NOURISHMENT & RESTORED WITH NATIVE VEGETATION
COBBLE BEACH (NOURISHED)
CONCRETE SEAWALL
NEW PEDESTRIAN FOOTPATH
INFORMAL TRAIL (TO BE CLOSED)
NEW BEACH ACCESS STEPS
EXISTING LAGOON
EXISTING OUTFALL
ARTIFICIAL HEADLAND (REINFORCE HYDRO TOWER)
EXISTING ARTIFICIAL HEADLAND
EXISTING COBBLE BEACH
EXISTING HYDRO TOWER
EXISTING HYDRO TOWER
BOULDER CLUSTER / DETACHED GROYNE
BOULDER CLUSTER / DETACHED GROYNE
EXISTING / PROPOSED TYP. SUMMER WATER LINE
PROPOSED TYP. SUMMER WATER LINE
BEACH ACCESS RAMP / BOAT LAUNCH
STEPPED SEAWALL / BEACH CURB
EXISTING TYP. SUMMER WATER LINE
PROPOSED TYP. SUMMER WATER LINE
ARTIFICIAL HEADLAND (REINFORCE HYDRO TOWER)
EXISTING HYDRO TOWER FOUNDATION
STEPPED SEAWALL / BEACH CURB
EXISTING TYP. SUMMER WATER LINE
PROPOSED TYP. SUMMER WATER LINE
ARTIFICIAL HEADLAND (REINFORCE HYDRO TOWER)
ACCESS STEPS
ISSUE DATE: 2021-06-23
0
50
100
150
METRES
SJL ENGINEERING

Figure 3.1.7

3.2
REVEGETATION AND INVASIVE SPECIES MANAGEMENT

Success of the Master Plan requires a focus on maintenance, rehabilitation and monitoring activities in the Park that goes above and beyond management of traditional urban spaces to adequately support shoreline protection and dune stabilization. The focus must consider, value, and support, the ecological services provided by the dune system, such as vegetation that helps to stabilize and sustain the beach and dune and provides wildlife habitat, in order to achieve the vision of the Master Plan and protect future investments.

Rehabilitation Zones

Five distinct rehabilitation zones (shown in **Figure 3.2.1**) and details, regarding their site-specific rehabilitation targets, were identified in the Beachway Park Invasive Plant Inventory and Rehabilitation Adaptive Management Plan (Ausenco 2022a). The following summarizes each of the zones and the site specific approaches to restoration that are proposed.

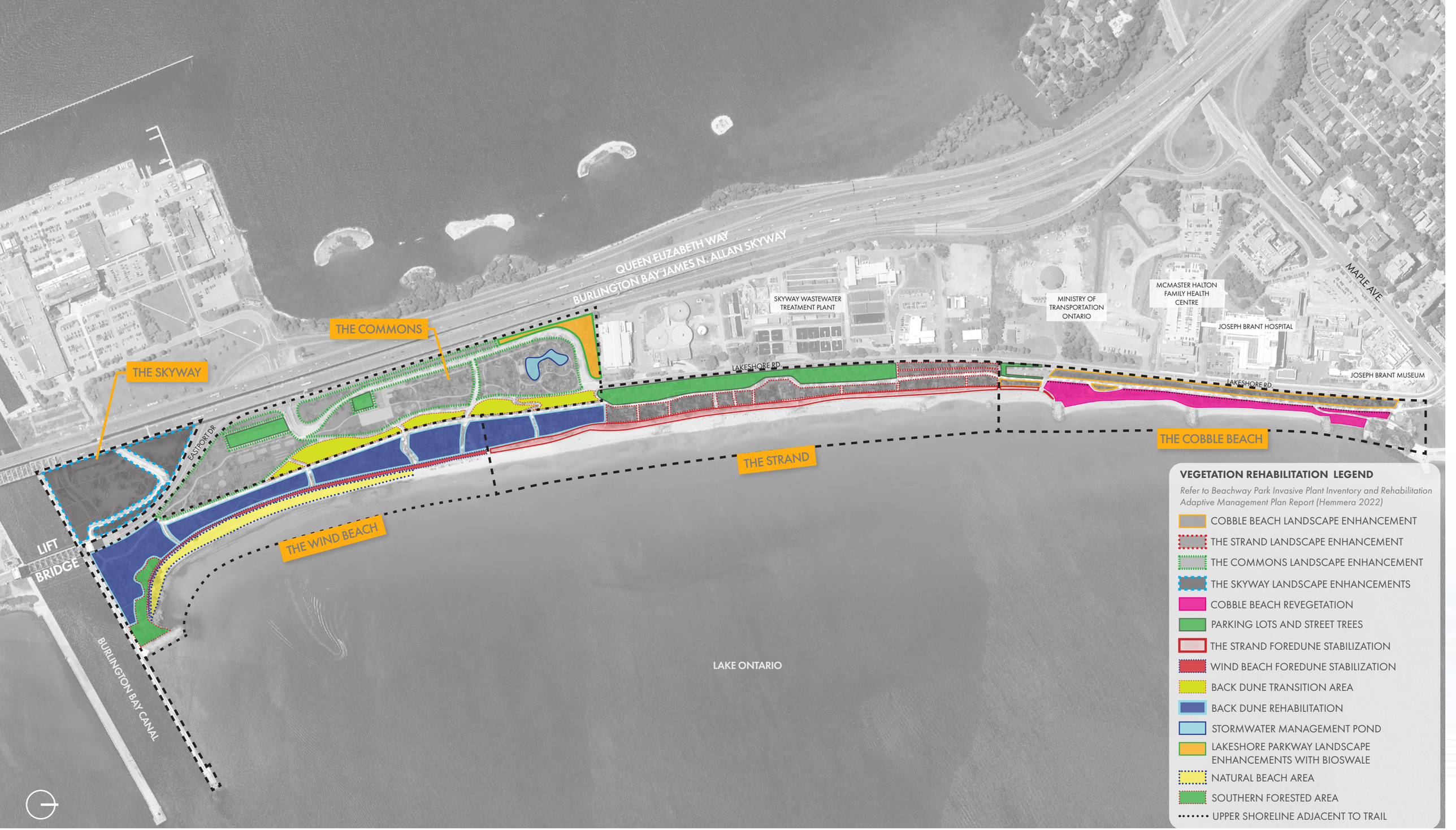
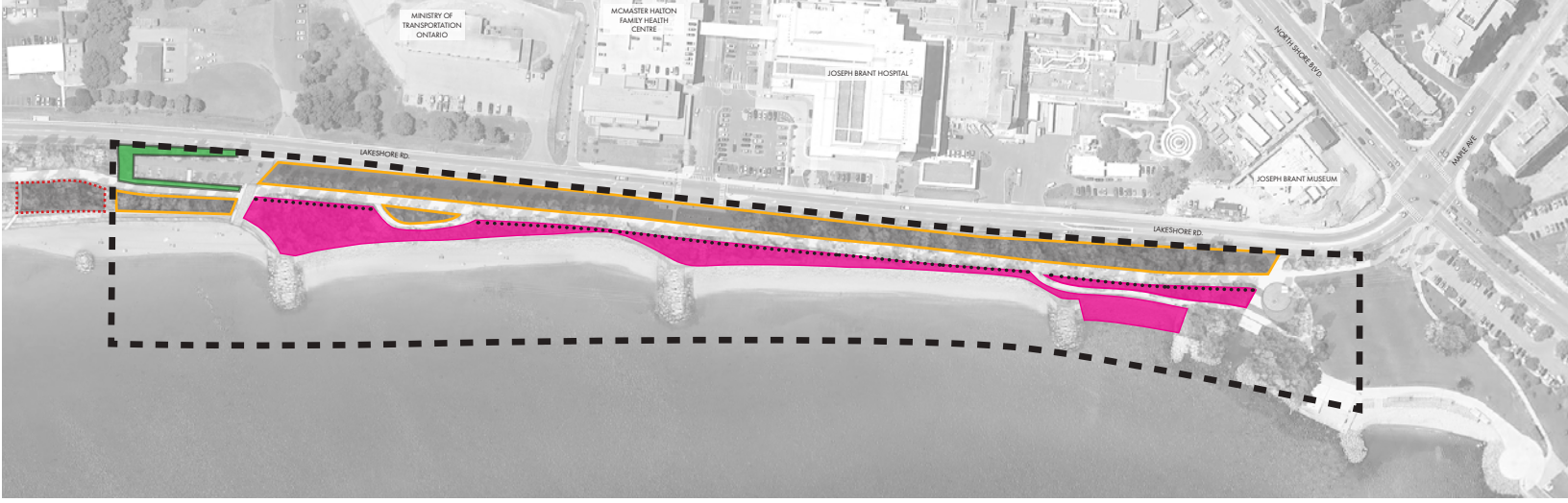


Figure 3.2.1 - REHABILITATION ZONE KEY MAP



Cobble Beach Revegetation

Shoreline Protection envisioned by the original Master Plan (2015) consisted of minimal intervention to protect the existing shoreline. The revised Master Plan incorporated a headland-beach system to widen the beach and protect the slope from further erosion, as discussed above. Construction of the headlands and beach nourishment will require substantial, temporary, disturbances that represent an opportunity to remove invasive plants and undertake restoration planting with native species.

Species selection associated with revegetation adjacent to Cobble Beach will focus on species suited for the changing site conditions, and four different vegetation communities, in areas between the waters edge and upland areas.

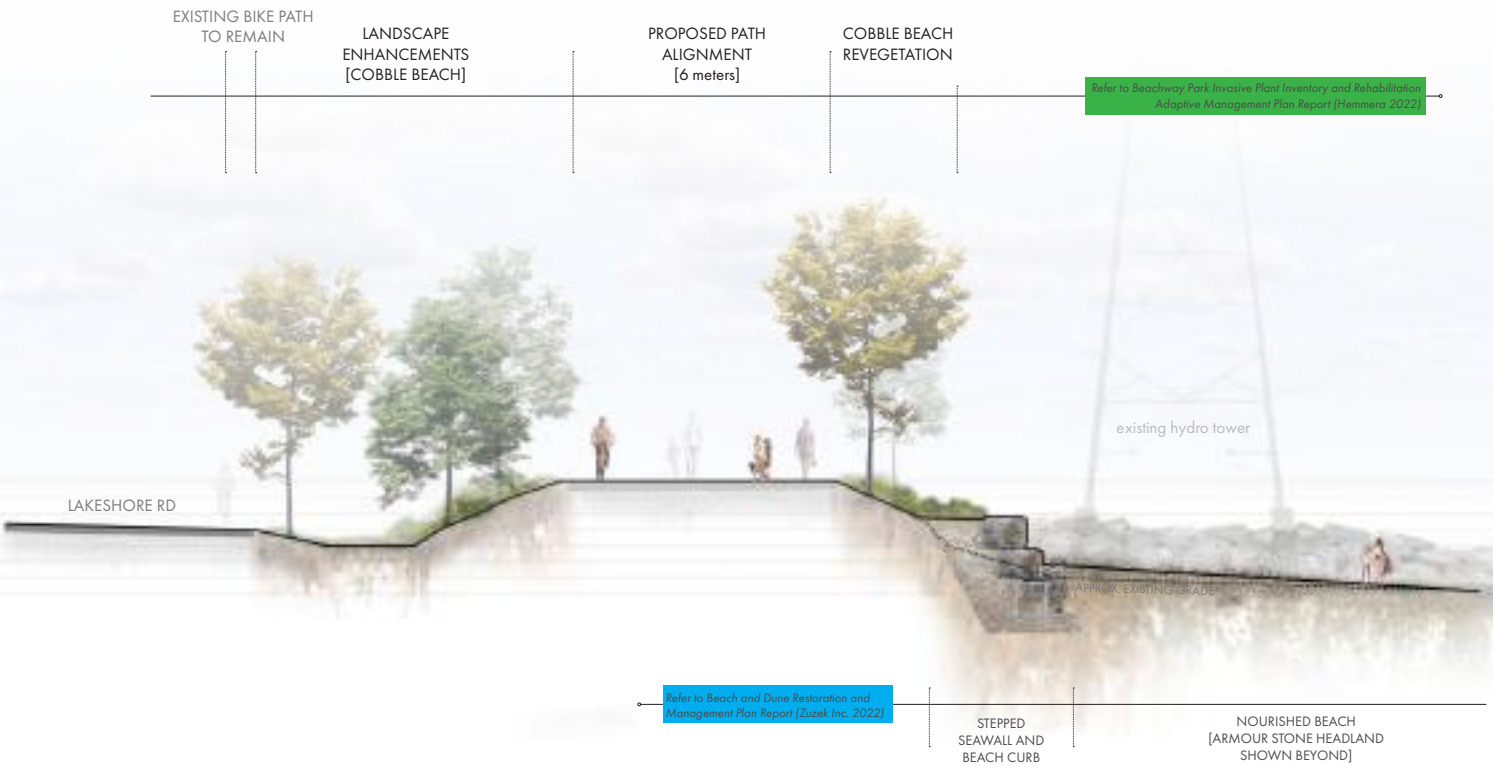


Figure 3.2.2 - Section of The Cobble Beach Revegetation

Foredune Stabilization Zone

Although the Master plan did speak to encouraging the rehabilitation of the foredune, it did not anticipate major rehabilitation. The incipient dune, foredune and backdune system in The Strand and Wind Beach is currently unable to maintain natural dune processes.

A large portion of The Strand requires a sufficiently high foredune ridge be created by importing sand material from an upland quarry. The intent is that this foredune will become self-sustaining through planting native beachspecies, such as beachgrass.

The addition of a foredune ridge is intended to prevent flooding of interior portions of the Study Area during storms at times of high-water and/significant storm/levels.

For Wind Beach, the foredune and backdune toe of slope will re-establish naturally by planting dune appropriate species lakeward of the existing back-dune toe of slope. Growth of dune grasses and other vegetation will encourage natural dune processes that collect sand, allowing the development of incipient dunes and a vegetated foredune that is self-sustaining and resilient to severe weather and high-water events.

Landscape Enhancement Zone

Rehabilitation of the back-dune areas, containing key park infrastructure or supporting higher volumes of recreational activity, will focus on the management of invasive plants and adding native plant landscape enhancements. Enhancement plantings will protect rare plants in addition to providing a buffer from the surrounding park development thereby enhancing the aesthetics of the Study Area. Landscape enhancements will be undertaken in each of the key zones as well as ancillary areas such as: parking lots; areas with street trees; bioswales; and stormwater management infrastructure.

East of the multi-use trail, landscape enhancements should continue to emulate grass, shrub or tree communities of the foredune and backdune area, as deemed appropriate for site conditions and recreational activities. Areas west of the multi-use trail, or areas of higher recreational traffic, can incorporate species of dry-mesic and mesic northern forest, which are typical of inland higher, drier, and more stable forested beach ridges or other native tree and shrubs as determined appropriate.

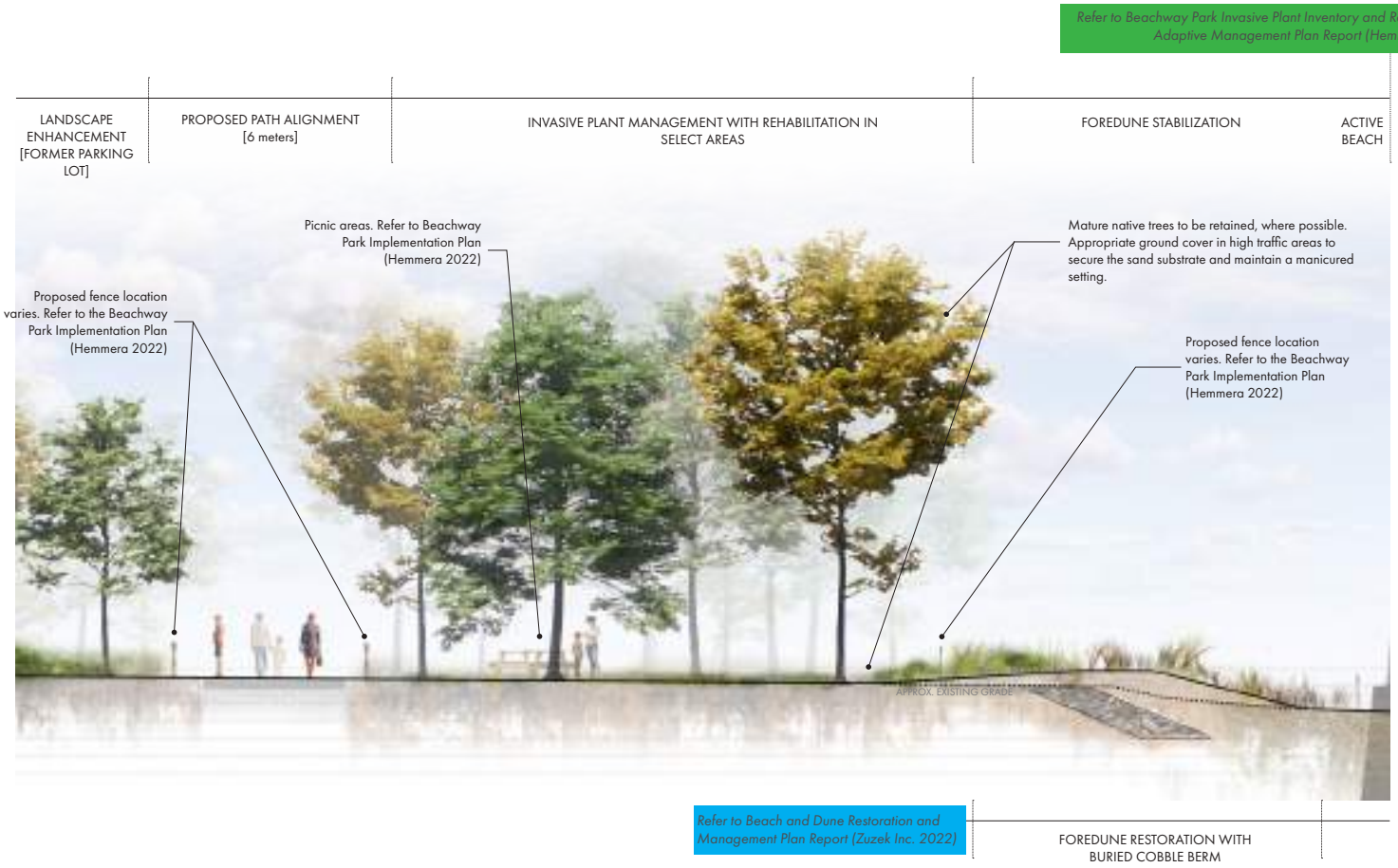


Figure 3.2.3 - Section of The Cobble Beach Foredune Restoration

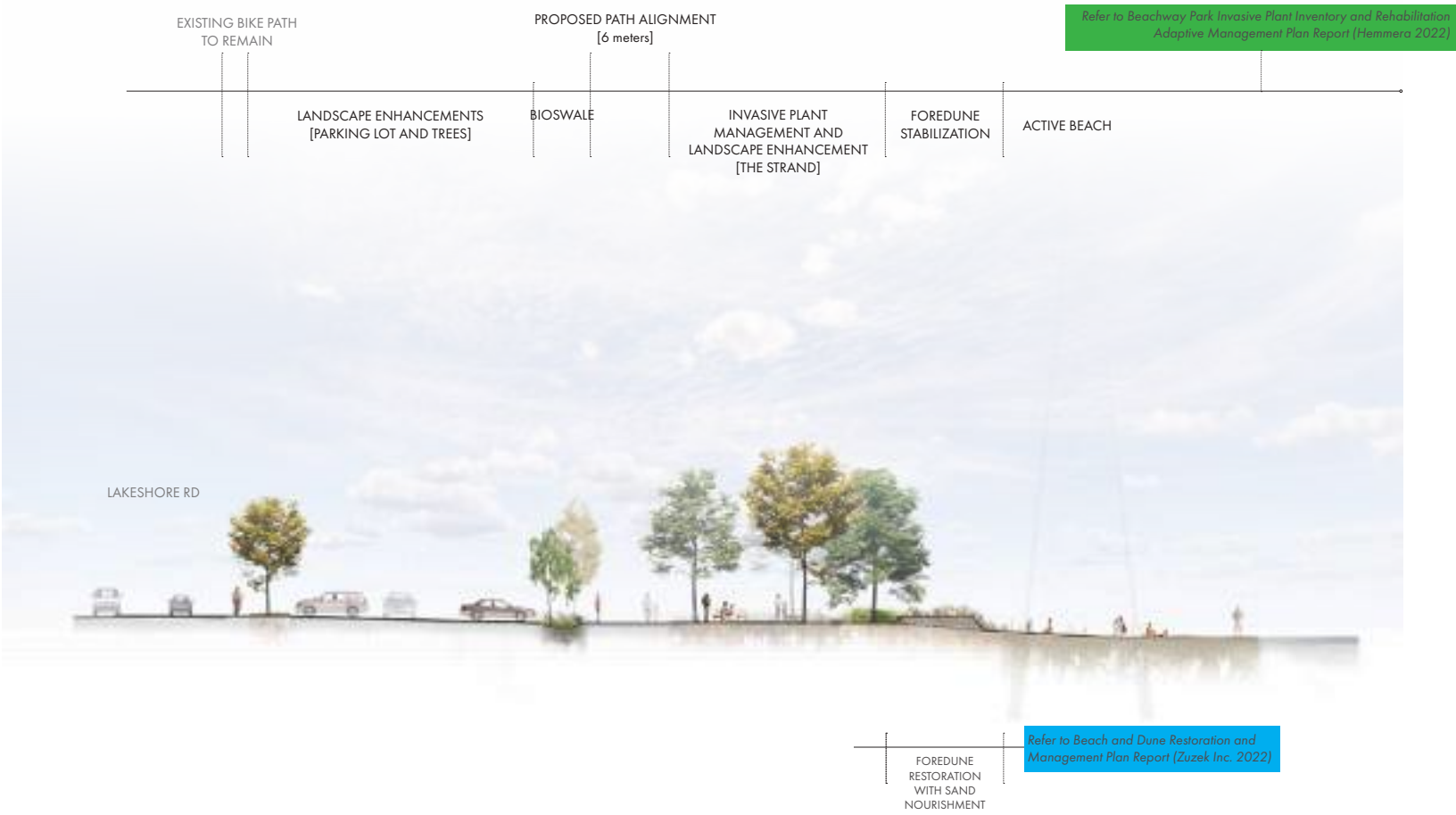


Figure 3.2.4 - Section of The Strand Parking and Foredune Restoration

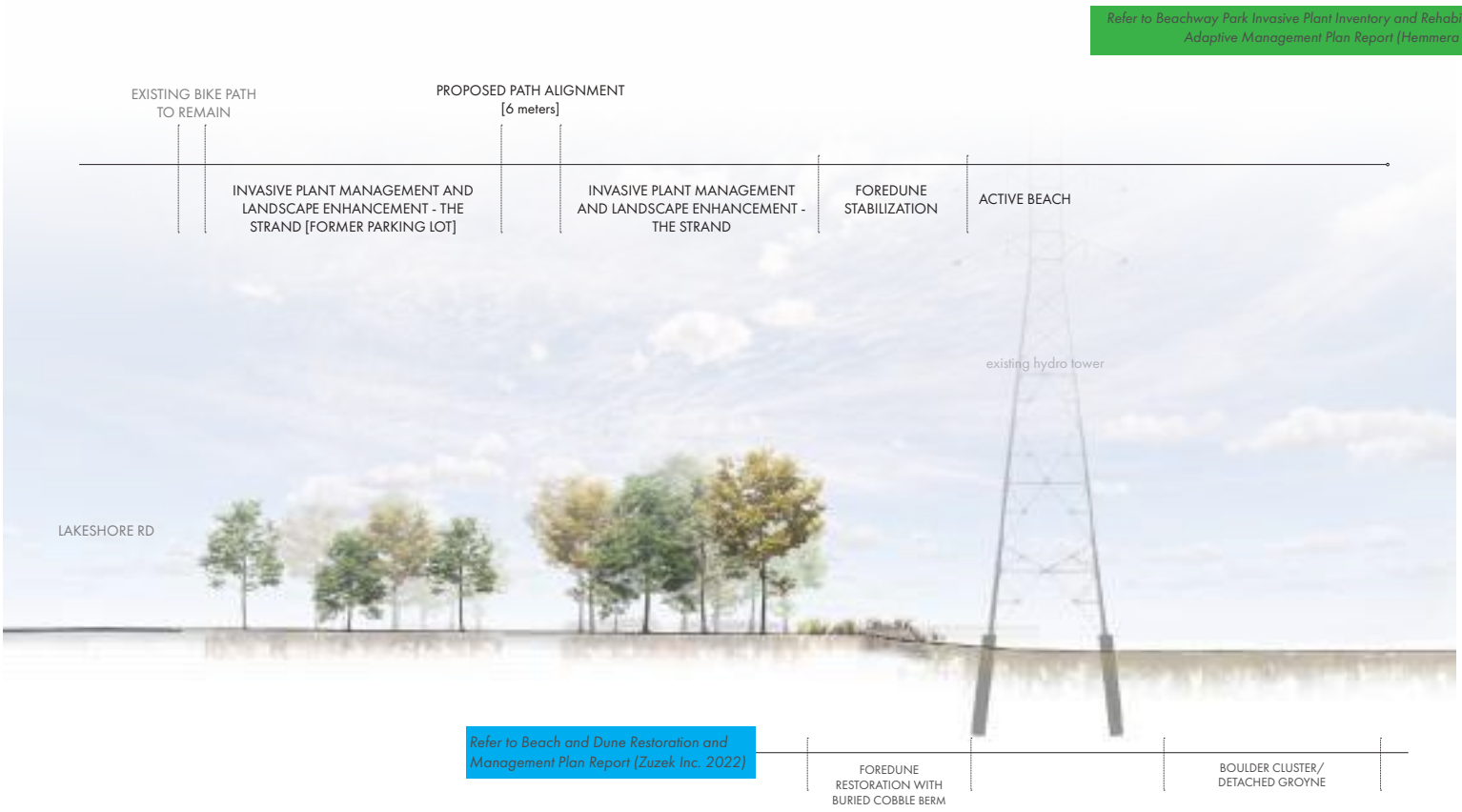


Figure 3.2.5 - Section of The Strand Foredune Restoration and Invasive Plant Management

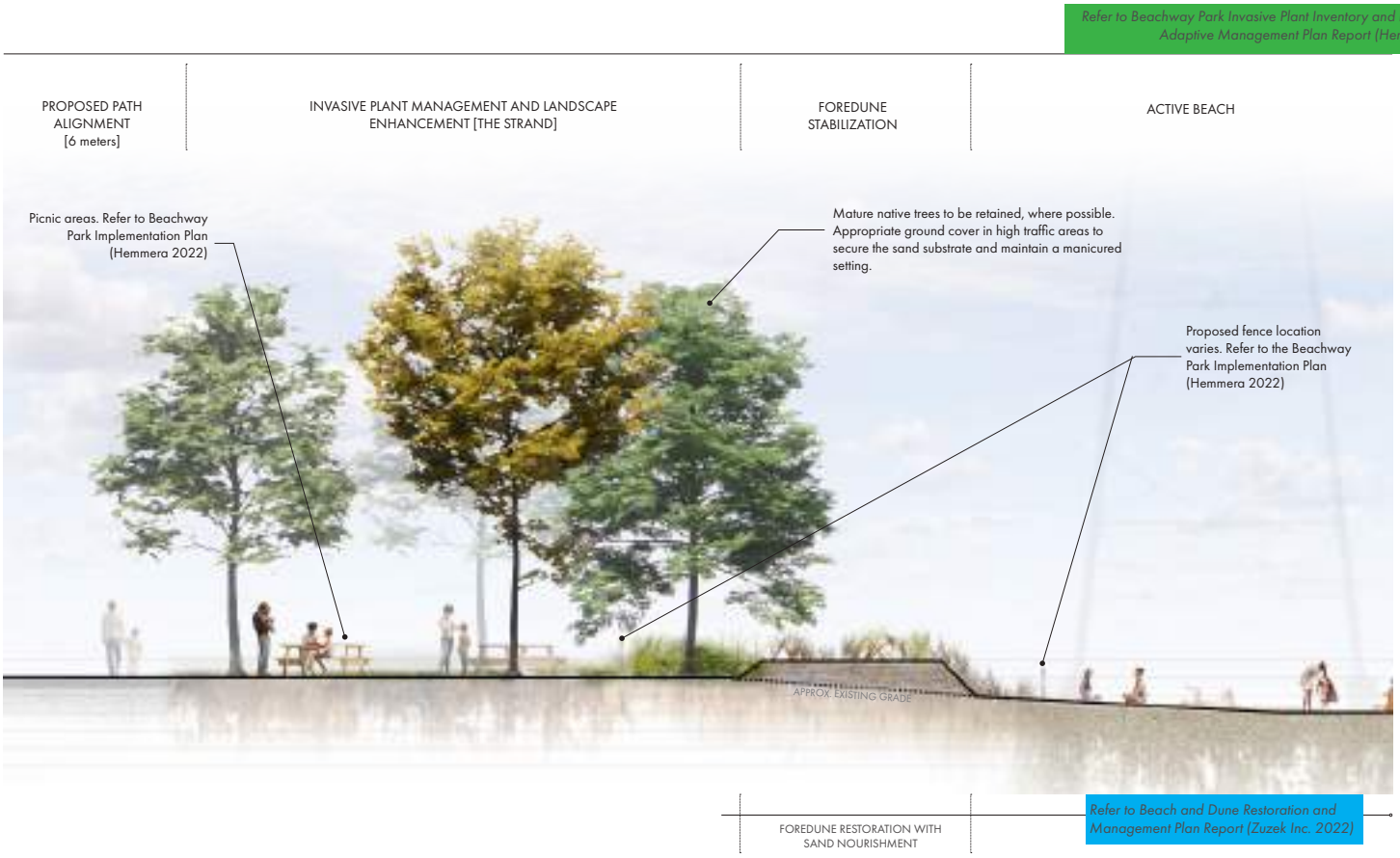


Figure 3.2.5 - Section of The Strand Foredune Restoration and Landscape Enhancement

Backdune Rehabilitation Zone

The Master Plan identified areas of the park, primarily east of the multi-use trail, as areas to protect and enhance the backdune through the removal of invasive plants and infill of native and beach-appropriate species. The natural character and amount of recreational activity in the north end of the park (i.e. the Cobble Beach and The Strand) compared to Wind Beach is substantially different. As such, approaches to rehabilitation of ecological conditions, including vegetation, are site specific and reflect existing conditions and how such areas are envisioned to be used.

The southern end of the Burlington Beach, roughly consistent with Wind Beach, was identified as an area to encourage the regeneration and rehabilitation of the natural dune ecosystem. This location supports the greatest concentration of rare vegetation communities and rare plant species. The backdune transition area of the Commons is equally an area that will benefit from rehabilitation and addition to the backdune system. Rehabilitation targets associated with Southern Forested Area, the southern most portion of the Park, should reflect existing conditions that include a treed shoreline and forested wetland. Conservation Halton recently commenced invasive species management and restoration in the backdune at the Wind Beach.

Natural Beach Zone

The Master Plan envisioned a natural beach area, consistent with Wind Beach, to build on the natural dune character. The natural beach is intended to be ungroomed, allowing for the rehabilitation of the beach and dune ecosystem, encouraging wildlife habitat currently absent in the park, and expand natural beach processes to the water's edge.

Vegetation associated with the Natural Beach Zone will range from minimal vegetation, within 30-50 metres of the water's edge, to herbaceous and woody vegetation in zones where natural erosive forces are less pronounced and vegetation, if left unmanaged, will re-establish. The Sea Rocket Sand Open Shoreline community observed in the Study Area, although degraded through beach grooming and recreation activities, is the proposed archetype vegetation for rehabilitation in the Natural Beach Zone.

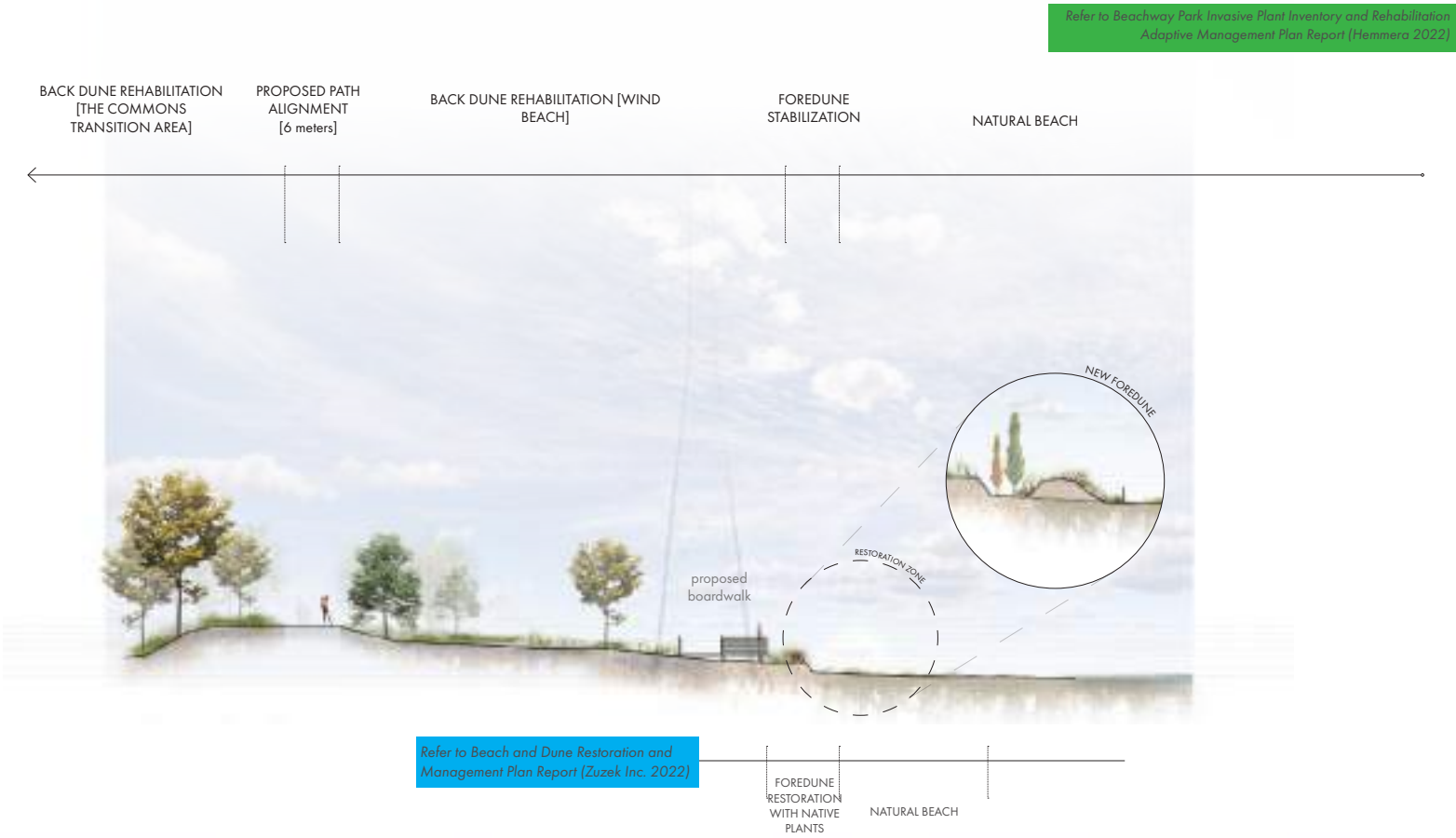


Figure 3.2.6 - Section of proposed boardwalk with Foredune Restoration and Back Dune Rehabilitation

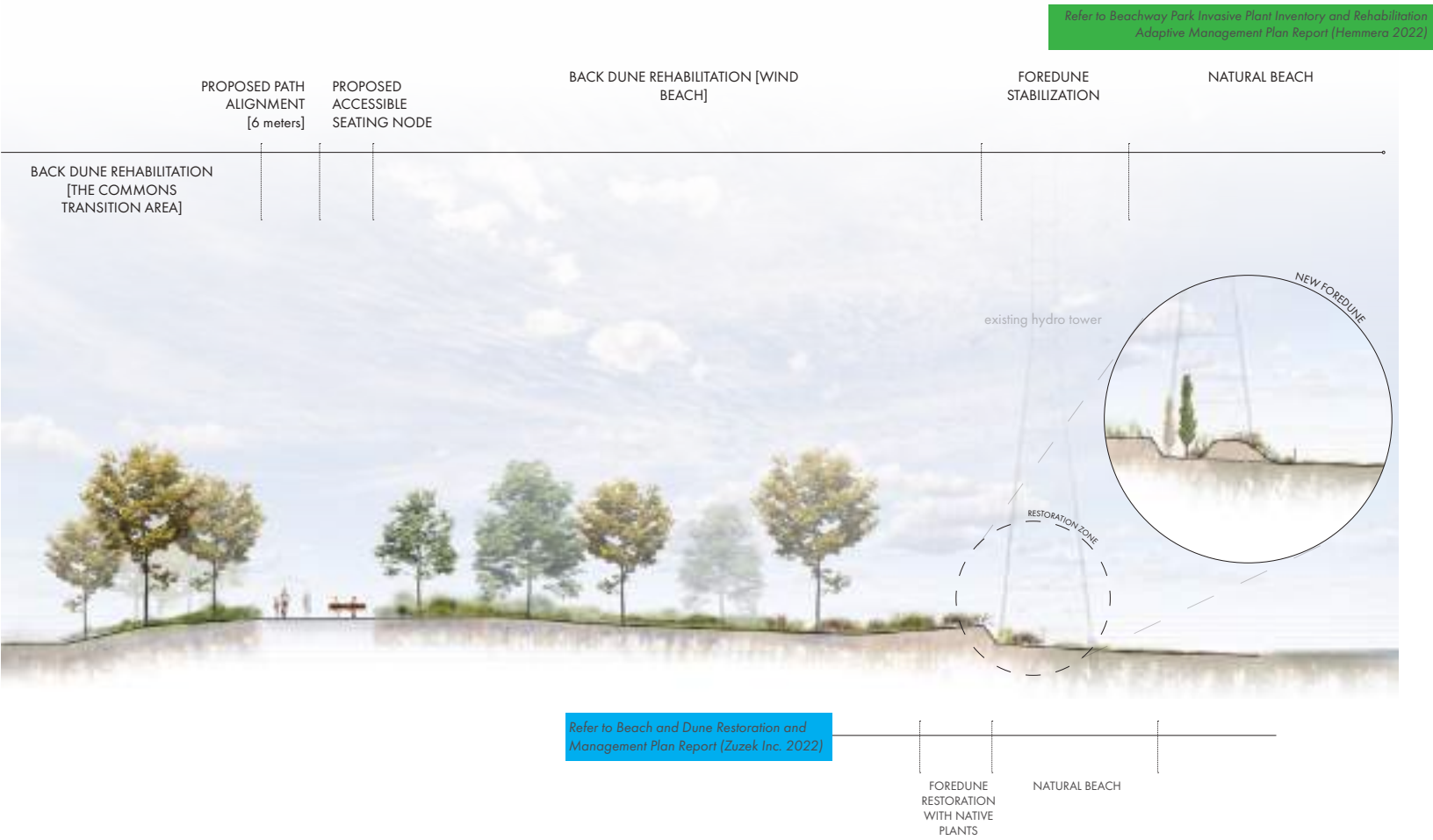


Figure 3.2.7 - Section of The Commons Transition Area Foredune Restoration and Back Dune Rehabilitation

3.3
INVASIVE PLANT CONTROL

Approximately 56% of plant species recorded in Beachway Park are non-native species, many of them are considered to be highly invasive and spread throughout the Park. The presence of such species limits the ability of native plants, which help to sustain local ecosystems including dune ecosystems. As such restoration works that remove invasive species, and seek to sustain native vegetation, are critical to the long-term success of the Master Plan.

While it would be desirable to eradicate all invasive plants, the volume and aggressiveness of invasive species in the Park make this an unrealistic goal. As such, invasive species removal, planting of native species, and follow up monitoring efforts will need to be prioritized. Details on an invasive plant priority model, that identify species and areas of higher management value, can be found in the Beachway Park Invasive Plant Inventory and Rehabilitation Adaptive Management Plan (Ausenco 2022a).

As the restoration of vegetation in the Park will take place in a phased approach, and invasive plants will remain in some adjacent/ unrestored areas, invasive plant management will require a long-term focus and investment that includes the monitoring of the success of restoration and enhancement plantings.

As such, the management of invasive plant species needs to be guided by an adaptive management approach that includes vegetation monitoring and follow up measures, such as replanting or additional invasive species removal, where monitoring is is showing that restoration and enhancement targets are not being sustained over the long term. Such follow up measures could include additional planting of native species, regular maintenance to remove invasives, as well as measures to limit access to sensitive vegetation communities.

Figure 3.3.8 - Section of The Strand Invasive Plant Management and Foredune Restoration

3.4
SEED AND PLANT MATERIAL

While revegetation with native plants is a key element of the Master Plan, an important consideration during Master Plan implementation will be the sourcing of seed and plant material such as the large amount of plant material of specific genetic stock needed to support restoration works in The Strand and Wind Beach.

Planning for the amount of plant material required needs to occur a minimum of a year in advance of rehabilitation efforts as native planting material may be difficult to source and, in some cases, may involve digging up/transplanting plant material rather than purchasing it from a nursery. In such cases, seasonal considerations related to when material is moved/replanted are important considerations that will influence the success of restoration works. It is also likely that multiple sources of plant material will be required to meet the demand.

The findings from the Provincially funded Building Beach Resilience project at Burlington Beach should consulted regarding sources of beachgrass, as preliminary findings suggest the American beachgrass originally imported from Pinery Provincial Park has not resulted in the appropriate morphological changes in the foredunes at Beachway Park. Champlain beachgrass, which is found at select locations in southern Ontario, is a far superior foredune builder (Zuzek Inc, 2023).

Areas of Beachway Park, especially towards the south end of the Wind Beach near the south service entrance, can be used for donor colonies for species such as American beachgrass . However, as stated above, the findings from the Building Beach Resilience study suggests Champlain beachgrass would be a superior species. Areas of the Park should be considered for growing key species to be used in rehabilitation, or ongoing foredune restoration can serve as a 'living nursery'. Specific species to be grown should be selected from the list of species contained in Beachway Park Invasive Plant Inventory and Rehabilitation Adaptive Management Plan (Ausenco 2022a).

Figure 3.2.9 - American Beachgrass from southern end of Park

4.0
FUTURE STUDIES AND PERMITTING

FUTURE STUDIES AND PERMITTING

In addition to vegetation restoration activities required to remove invasive species and re-establish native species, as well as physical works to restore dunes, there are ancillary activities that will be required to allow such works to proceed and ensure the long term success of restoration activities.

4.1
FUTURE STUDIES

Hazard Lands

Work completed by Zuzek (2022) identified that much of the Study Area is subject to a flooding hazard during certain highwater and wave events that overtop the current dune profile. The proposed dune stabilization will raise the dune ridge elevation and prevent spillover of Lake Ontario into interior portions of the Study Area. However, the interior is still vulnerable to rainfall flooding and this hazard should be addressed with appropriate stormwater management strategies during final design for The Commons.

When final design drawings are completed for the foredune restoration, the limit of the Dynamic Beach Hazard should be re-evaluated in consultation with Conservation Halton for the post-construction scenario.

Tree Inventory

An inventory of trees measuring 10cm diameter-breast-height or greater needs to be undertaken prior to removing trees for the purpose of shoreline protection, dune stabilization, invasive plant management or infrastructure development. Tree inventory information should be used during detailed design to avoid unnecessary tree removal.

This Information should be submitted to the MECP in an Information Gathering Form, documenting planned development, quality of habitat, cavity trees, and specific areas of impact (e.g. species, age, and quality of trees to be cleared).

4.2
PERMITS AND APPROVALS

Permit and approval requirements to facilitate shoreline protection, dune stabilization, invasive plant management and development of select infrastructure are summarized in the Beachway Park Invasive Plant Inventory and Rehabilitation Adaptive Management Plan (Ausenco 2022a). Necessary permits and approvals should be confirmed, well in advance of construction, in parallel with development of detailed designs for specific Master Plan components.

The approach to permitting is informed by the assumption that various Master Plan elements will be bundled into work packages for detailed design and construction. As such, detailed plans for permitting will be developed after specific work packages, with defined Master Plan elements and spatial areas, are defined. Once the specific Master Plan elements within a work package are defined, the Phased Implementation Plan presented in **Section 10** assumes that the scope of work for the Design Consultant will be to confirm specific permit requirements and, where possible, develop and submit permit applications such that permits are in place prior to the issue of construction contracts.

In cases where permit applications require an understanding of construction methods (i.e., Cobble Beach headlands construction), the Design Contractor will be required to develop a conceptual construction approach and schedule to assist in expediting permitting to the extent possible.

During construction planning, Construction Contractors may choose to present alternative construction methods, including timing, but will be responsible for any impacts to schedule where new or additional permits or approvals need to be applied for.

Cobble Beach Headland Construction

While permitting requirements for will be finalized as part of detailed design of most Master Plan elements, potential schedule constraints related to permitting to advance work associated with Cobble Beach have been identified.

As the construction of the headlands will involve in water works, they will need to comply with construction windows that do not permit in water works between mid-March and July/ August. As such, detailed design, permitting, and construction planning for the construction of the headlands associated with Cobble Beach will require significant focus and attention in order to ensure the work is completed in a timely manner and in compliance with the conditions of environmental approvals.

In addition, permitting associated with the Cobble Beach will require approval from HONI with respect to building the headlands at the base of hydro towers. As such, permitting for Cobble Beach elements of the Master Plan are assumed to require 6-12 months and has been built into the Phased Implementation Plan schedule **(Figure 10.1).**

Environmental Impact Assessment

Section 118(3.1) of the Regional Official Plan requires the completion of an Environmental Impact Study (EIA) for all development or site alteration located within or immediately adjacent (within 120m) to the Regional Natural Heritage System (RNHS). It is assumed that many of the Master Plan elements, on their own, will not necessarily trigger an EIA but that some specific elements, or bundles of elements, may.

Based on the design concepts presented in the Master Plan, it is assumed that shoreline protection and dune stabilization works will require the completion of an EIA. Other Master Plan elements potentially requiring an EIA include: tree removal (i.e. SAR bat habitat potential) as well as development over the foredune (access points) or within areas of rare plants and rare vegetation (boardwalk).

Where an EIA maybe required, The Region of Halton and Conservation Authority have the ability to focus the EIS on site specific issues. As such, once the three priority work packages presented in **Section 10** (i.e., Cobble Beach, The Strand and Wind Beach) are confirmed, further discussion will be required with the Region and Conservation Halton to confirm the need for, and scope of, an EIA for each of the work packages.

Specific permits and approvals anticipated to be required to support implementation of the Master Plan include the following:

- Fisheries Act
- Ontario Regulation 162/06 – Approval required as a result of potential development interference with wetlands and watercourses, plus flood, erosion, and dynamic beach hazards
- Public Lands Act – Permit required for addition of erosion control structure and/or placement of fill on shorelands
- Endangered Species Act (provincial)
- Species at Risk Act – Permitting or approval potentially required to comply with federal act pertaining to works on federal lands such as HOPA
- Environmental impact assessment – Under Section 118(3.1) of the Regional Official Plan.
- MNRF Crown Bottom Lands
- Navigable Waters Protection Act.
- Permitting potentially required for building adjacent to Trans Northern Pipeline.

5.0
NEW APPROACHES TO PARK USE AND MAINTENANCE

NEW APPROACHES TO PARK USE AND MAINTENANCE

While the Master Plan presents a vision for restoring local ecosystems, including plant communities, within Beachway Park, such areas will remain under significant pressure due to the high levels of use. As adjacent areas continue to develop and accommodate a growing population, the same pressures on the Park, that have resulted in the current conditions, will continue to increase. As such, **the successful implementation of the Master Plan demands that new approaches, to the way the Park is used and maintained, be developed.**

The following describes key areas where new approaches to Park use, management, and maintenance are required in order to help advance implementation of the Master Plan.

Controlling Beach & Dune Access

Given the high volume of current use within beach and dune areas of the Park, the re-establishment of a self-sustaining foredune and backdune environment, where native plants can be sustained over time, requires controlled access to the beach and dune. The primary objectives of controlling beach and dune access would be to protect restored areas, encourage users to stay on formal trails and access points, and limit impacts from equipment requiring access to undertaken maintenance activities.

Figure 5.0.1 - Example of post and rope to protect beach dunes.

Areas of Incipient and Foredune Rehabilitation

To achieve the rehabilitation of the foredune in The Strand and Wind Beach, the use of fencing, such as post and ropes, or other similar form (such as app-supported virtual fencing), is required as it does not interfere with natural dune processes and prevents, or at a minimum dissuade, Park users from entering sensitive areas.

Barriers should be accompanied with strategically located signage that explains the importance of the barriers and their intended goal. Specific outreach during busy seasonal periods should be considered to assist in educating Park users regarding the benefits of the barriers.

Figure 5.0.2 - THE WIND BEACH PROPOSED FENCE LOCATIONS

TRAIL FENCING

BEACH FENCING

WALKWAY RAILS

EXISTING FENCING AND RAILS

TRAIL SIGNS

Figure 5.0.3 - NORTH STRAND PROPOSED FENCE LOCATIONS

TRAIL FENCING

BEACH FENCING

WALKWAY RAILS

EXISTING FENCING AND RAILS

TRAIL SIGNS

Figure 5.0.4 - SOUTH STRAND PROPOSED FENCE LOCATIONS

Pedestrian Access Points

Numerous informal pathways from the multi-use trail to the beach have been identified throughout Beachway Park. These informal access points result in localized impacts including killing vegetation required to secure the sand substrate. It is important that informal access paths be closed and that the number of formalized access paths be expanded to provide reasonable access points. Formal pathways should be regularly spaced, especially in The Strand, and originate from nodes of high activity such as parking lots, or pathways entering from other areas of the Park.

Formalized access points should consider virtual fencing and signage that guide the user towards a specified path, making it easy for them to access the beach. Protection of the foredune area should consist of a wooden boardwalk, stairs, or other similar structure. The access pathway should be angled to the south in such a way that it prevents prevailing winds from transporting sand up the pathway.

Figure 5.0.5 - Example of informal access with disturbed vegetation.

Figure 5.0.6 - Example of formal access point with controlled pathway.

Wayfinding

Wayfinding and signage are an integral component of the Master Plan, drawing visitors to new uses, and supporting restoration and enhancements efforts. Building on the recommendations of the Master Plan, a detailed Wayfinding and Signage Strategy should be undertaken to determine a design concept for all signage on site, including signage that is integrated into the beacons. In addition to the design of these elements, the strategy should consider the precise placement and content of the signage so that it aligns with site specific objectives that flow out of the Master Plan.

Figure 5.0.7 - Examples of wayfinding and signage options.

Refer to Section 7.0 for additional details on wayfinding and signage.

Heavy Equipment Access Points

The hydro tower corridor crossing Beachway Park provides a unique challenge for the foredune rehabilitation. As well, heavy equipment for Park maintenance activities, such as beach raking, require access to the beach and foredune area from time to time.

Beach entrance and exit points should be confined to the southern service access point until the northern access point at the north end of The Strand is constructed. Once the northern access point is in service, no other points should be used for entering and exiting the beach with light or heavy equipment/ machinery. Park maintenance staff, including HONI staff should be provided with educational material identifying areas of sensitivity and areas to be avoided, to the degree possible.

Project Partners should work directly with HONI to align maintenance activities under the hydro corridor with rehabilitation efforts and necessary protection measures. Such dialogue, would involve working with HONI to understand their operational requirements and developing site-specific approaches to maintenance works in areas under the transmission lines.

Outcomes from such discussions will help to confirm agreed upon access routes to hydro towers, as well as height constraints and/or preferred species under the transmission, as well as other considerations that may impact ecological conditions within the Park.

Figure 5.0.8 - Example of HONI Maintenance access tracks.

Beach Grooming

Ceasing regular mechanical raking of the beach in the southern portion of the Park is essential to the creation of a natural beach area and consistent with the vision in the Master Plan.

The lack of mechanical raking will assist with the establishment of natural beach vegetation as well as the build up of decaying organic matter along the wrack line (edge between water and beach). Should raking be required, it should be confined to the width of the surf rake beach grooming machine, immediate landward of the wrack line and avoid disturbing the vegetation material associated with the wrack line.

Through consistent outreach, stewardship, education and awareness, the benefits of stopping mechanical raking can be successfully communicated to the majority of users as part of the development and implementation of a Communications Plan that helps users understand how Park operations and use will change in the future, and why, as a result of implementing the Master Plan.

Through such communications mechanisms, ensuring garbage, dead fish and birds are removed through low impact measures will assist in public acceptance of the natural beach area.

Additional training should be provided for all maintenance staff to ensure a proper understanding and appreciation for the restoration efforts and impacts of such practices. Such training would be supported by the development of an Operations and Maintenance Plan for the Park, that contains best practices to avoid impacts to existing ecological values and promote the success of restoration and enhancement works. The Operations and Maintenance Plan would be developed by the Partners with input from other parties, such as HONI, who have infrastructure within the Park that requires maintenance.

In addition to ceasing mechanical raking of the Wind Beach, no raking or other maintenance activities should take place within 5 m of the rehabilitated foredune in The Strand.

Figure 5.0.9 - Example of wrack line with sanderlings.

Operations and Maintenance

The Park is immediately adjacent to a large urban population seeking recreation activities in one of the rarest ecosystems in the Great Lakes and one that is exceedingly sensitive to disturbance. As such, Beachway Park is not a typical urban Park. An Operations and Maintenance Plan, which reviews and documents site specific needs of the Park should be developed.

The scope of the Operations and Management Plan would include, at minimum:

- Standards for operations and maintenance in areas of sensitive dune communities
- Confirming access points for operations and maintenance including access to support HONI maintenance of existing infrastructure
- Practices for controlling beach and dune access for recreational users
- Identifying maintenance activities that support sensitive natural features, and
- Identifying appropriate beach grooming practices.

6.0
LONG TERM ADAPTIVE MANAGEMENT PLAN

LONG-TERM ADAPTIVE MANAGEMENT PLAN

The removal of invasive plants species, and replacement with native plant species, and restoration of dunes within the Park, will be a challenging process for a number of reasons including:

- Difficulty in permanently removing invasive species once established;
- Effort and time required to support native plant restorations until they become established/self-sustaining;
- Restoring dunes, in a highly dynamic environment, influenced by a changing climate; and
- Ongoing pressures on physical and biophysical systems as a result of high volumes of users and recreational activities that can adversely impact restoration activities.

As such, restoration and enhancement works will be supported by an adaptive management approach as described in the Beachway Park Invasive Plant Inventory and Rehabilitation Adaptive Management Plan (Ausenco 2022a) as shown in **Figure 6.1.1.**

Following this approach, restoration and enhancement works, for dune and vegetated areas, should be supported by a program of:

- **Design Solution (Stage 2)** – Identify site specific design specifications (e.g., species mix, planting densities, etc.) for restoration and enhancement works to inform tendering and procurement processes.
- **Implementation (Stage 3)** - Undertake restoration/enhancement activities such as invasive plant removal, planting of native plants, and restoration of beach and dune areas (Stage 3).
- **Monitoring (Stage 4)** - Monitoring of restoration and enhancement works against design specifications;
- **Review (Stage 5)** – Evaluate results of monitoring programs, against design objectives for restoration and enhancement works; and
- **Adjust Management Solution (Stage 6)** – Identify follow up actions to address areas where design objectives for restoration and enhancement works are not being achieved.

Figure 6.1.1 - Adaptive Management Cycle

The Beachway Park Invasive Plant Inventory and Rehabilitation Adaptive Management Plan (Ausenco 2022a) identifies metrics to be monitored to help evaluate the success of restoration and enhancement works and, where necessary, identify additional efforts required to ensure the long-term success of dune restoration, removal of invasives vegetation and establishment of native vegetation. Monitoring of site-specific metrics, to help determine if restoration and enhancement targets are being achieved, should focus on the following:

- Invasive plant control effectiveness
- Detailed invasive plant inventory
- Native plant survivorship
- Foredune stabilization
- Vegetation community inventory
- Trail usage to protect restored areas.

As site specific restoration works are planned in the future, site specific adaptive management plans should be developed that identify relevant metrics to be monitored over time to evaluate the success of restoration and enhancement works and identify what type of additional action may need to be taken.

Where monitoring determines that invasive species are re-establishing or survival rates of native plants are not being achieved, the adaptive management approach will identify additional measures for ensuring restoration objectives are met.

Such actions could include: increased efforts on invasive species removal; replanting of native plants; additional information and educational campaigns, or fencing/changes to access points to reduce impacts to restoration areas from park users. If impacts from beach users on the restoration efforts can not be mitigated through the controlled access trails, signage, and information sharing, the park owners may need to adopt more active management strategies, such as deploying staff onsite from dawn to dusk.

It is envisioned that the Adaptive Management Plan to support Master Plan implementation will be a living document which grows and evolves as specific restoration and enhancement works are planned and undertaken.

It should build on information contained in Beachway Park Invasive Plant Inventory and Rehabilitation Adaptive Management Plan (Ausenco 2022a) to identify specific treatments for specific areas of the Park as well as design objectives to be evaluated against. Oversight of the Adaptive Management Plan should be supported by a lead individual that is responsible for tracking monitoring programs across multiple restoration and enhancement works.

7.0
EDUCATION, AWARENESS AND STEWARDSHIP

EDUCATION, AWARNESS AND STEWARDSHIP

Because effective implementation of the Master Plan demands new approaches to the way the Park is used and maintained, education and awareness activities that encourage shared stewardship of Beachway Park are critical to redefining the relationship between all users and the Park.

Modifying the way users envision their experience and their role in protecting the Park will require a targeted education and awareness campaign.

Education and Awareness

The development of Park amenities, including implementation of rehabilitation works will occur over multiple years and require recreational users to modify how they use the Park in some cases.

Online municipally controlled information about Beachway Park should highlight key messaging for users to educate themselves. Such messaging will help raise awareness among Park users that dune communities are sensitive to foot traffic and can be easily disturbed and that such disturbance reduces the resilience of the beach and dune system during high water or storm events.

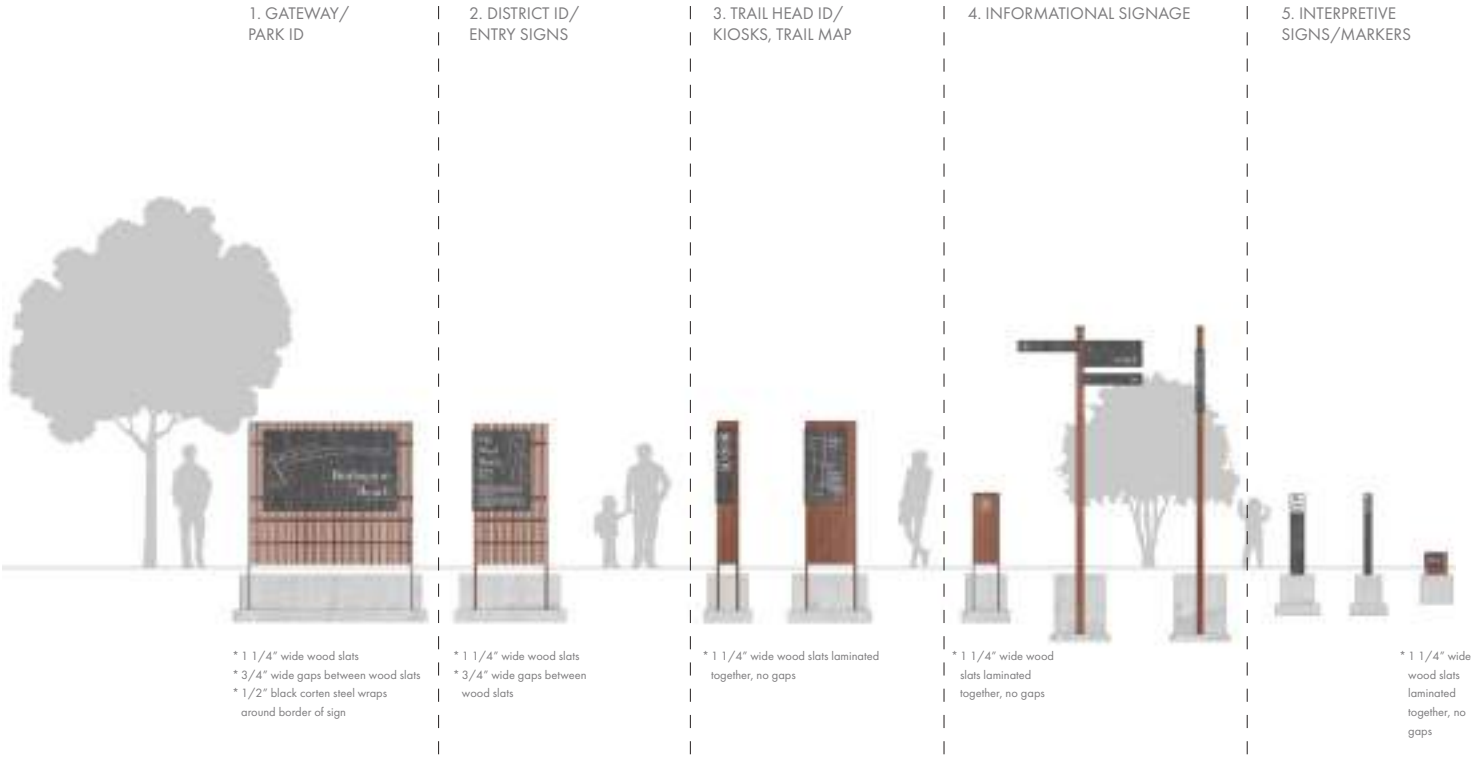
Similarly, changes to access, and the lack of raking in the natural beach area, are likely to result in some complaints from Park users due to a perceived untidy look.

Park users will need to be educated and made aware of the benefits of the natural beach section, why raking is detrimental to the beach and dune system, and the importance of the wrack line material for wildlife. Limited raking of The Strand, away from the foredune restoration, can continue in the high-use area of the park.

Signage

Signage, public outreach events and municipally controlled online media sources should focus on the following as it relates to rehabilitation and Park use:

- Formation of a baymouth bar
- Structure, role and function of beach and dune ecosystems
  - » Wind and wave action and formation of dunes
  - » Natural erosion and rejuvenation process
  - » Importance of incipient and foredune vegetation to the process
- Historical context of Burlington Beach and why rehabilitation is necessary
- Rehabilitation plan
  - » Invasive plant removal and control
  - » Native plantings
- Benefits and intent of controlling access points in certain areas
- Plants and wildlife of beach and dune ecosystems on Lake Ontario
- Benefits of a natural beach areas and impacts of beach grooming.



Beach Ambassadors Program - Recently, the City of Burlington undertook a Beach Ambassadors Program to assist with beach maintenance (i.e. litter clean-up), and spread education and awareness about sustainable beach use. An important aspect of their presence was the communication of information about beach and dune rehabilitation and protection efforts, and why this is important to the long-term sustainability of the Park.

This program was supported by short-term government funding during Covid, and has been discontinued. However, some form of a similar program is needed to raise aware of restoration works and encourage new ways of engaging with the Park so that users can avoid impacts to ecological values and promote restoration and enhancement works.

Stewardship

Harnessing the power and passion of local community groups, Park user groups and adjacent landowners is important to achieving successful rehabilitation and maintenance of the Park over the long-term. Coordinating stewardship efforts and focusing them on specific rehabilitation tasks or protecting important areas of the Park will benefit from the identification of local community groups, Park user groups and adjacent landowners and direct engagement with them. Engaging with identified groups should focus on:

- Distribution of education and awareness materials and how each group can promote Park rehabilitation
- Involving identified groups in invasive plant control efforts
- Involving identified groups in rehabilitation planting
- Getting buy-in for controlled access points and closing informal trails

Community Groups - Community groups have been involved in rehabilitation efforts at Beachway Park in the past and it is anticipated there will be an ongoing interest. Community groups can provide a useful resource during labour intensive rehabilitation efforts such as invasive plant removal or planting new native species (e.g., beachgrass). Specific effort should be undertaken to identify appropriate and interested community groups to be involved with rehabilitation going forward.

Catamaran Club - Given its proximity to rare vegetation communities, the foredune, and natural beach area, the Catamaran Club can make important contributions to the implementation of the Plan, and demonstrate stewardship to other users.

As such, ongoing engagement with the Catamaran Club during Master Plan implementation is important to ensure that future operations (i.e., boat storage, boat moorage, trail use) account for, and align with, efforts to restore beach and dune areas and associated plant communities.

Figure X - Image of Catamaran Club

Such engagement should lead to an agreement with the City that formalizes use of the land, including site boundaries, location of facilities, access requirements, and boat mooring.

Park Programming

Implementing the Master Plan, and encouraging a new relationship with Park users, will benefit from a renewed, and intentional, approach to developing Park programs that align with and support the vision and objectives of the Master Plan.

The new uses and facilities provided in the Master Plan will require a strong commitment to programming. A Programming Strategy should provide regular programming for a determined timeframe (i.e. five years) including events, festivals and activities. The strategy should also identify recommendations for attracting new uses and programming to Burlington Beach.

Park programming and event organization continues to be recommended to ensure that spaces such as the Cultural Festival Area and the market building in The Commons do not become underutilized.

Staff resources and expertise could be devoted to working with event planners, community groups, businesses, schools, etc. to organize and advertise regular festivals, activities and events that meet the needs of Regional visitors.

An equal focus on programming and activities should be applied year-round with the goal of attracting a consistent number of visitors in all seasons.

8.0
SUPPORTING PARTNERSHIPS

SUPPORTING PARTNERSHIPS

Beachway Park is unique in the diverse number of organizations, both governmental and non-governmental, that have an interest and/or influence over activities and infrastructure within the Park. As such, intentionally focusing on the growth and development of partnerships between these entities is essential for successful implementation of the Master Plan.

Effective partnerships are critical in order to advance priority activities supporting Master Plan implementation including: developing long-term funding mechanisms, property acquisition, and developing new approaches to the management of areas within the Park. As such, implementation of the Master Plan will benefit from collaboration with other interests including:

Federal Government

Lands associated with The Skyway and areas of the Wind Beach south of the service entrance are federally owned by and managed by the Hamilton Oshawa Port Authority. Proposed improvements to these lands will need to be coordinated with the respective federal agency. Since the Master Plan (2015) was released, initial discussions have taken place with appropriate federal agencies with respect to the canal pier. These communications should continue to explore partnership opportunities and a mutually agreeable management approach for these areas.

Hydro One Networks Inc.

In the case of HONI, the development of an agreement regarding vegetation maintenance within the existing right-of-way, is a critical piece to ensuring the success of proposed dune restoration and revegetation works.

Adjacent Property Owners

Some of the recommendations in the Master Plan require development on adjacent municipal or provincial properties, including enhanced landscaping along the west side of Lakeshore Road. These landowners should be informed about the role their property plays in achieving the vision for Burlington Beach, with the objective of determining a clear approach for implementation, including funding and maintenance.

Recommended rehabilitation efforts may occur near residential landowners in the short-term and may result in questions or concerns. Outreach to residential landowners should be completed throughout the rehabilitation process and efforts should be made to include them in stewardship opportunities. Adjacent residential landowners can assist with creating a positive image of rehabilitation efforts and assist in setting an example of appropriate protection for sensitive Park features.

MASTER PLAN IMPLEMENTATION COMMITTEE

The organizations that have jurisdiction over areas and infrastructure within or adjacent to Beachway Park represent an important tool to support Plan implementation. As such, regular engagement amongst the Region and Project Partners, during the implementation phase, is essential to the successful implementation of the Master Plan and it is recommended that a Master Plan Implementation Committee be established.

The membership of the Master Plan Implementation Committee would be comprised of representatives from the Region, City of Burlington, and Conservation Halton. The focus of the Committee would be on developing, and executing, annual plans for implementing specific Master Plan elements.

The Committee would also provide direction to staff responsible for: advancing design and construction works; developing and implementing supporting communication plans; developing new operations and management plans; continuing work to acquire land or secure land access agreements, identify funding to support Master Plan implementation, and monitoring Master Plan implementation.

It is envisioned that the Committee would meet 4 times per year with a focus on advancing specific activities described in the Phased Implementation Plan.

9.0
FUNDING IN SUPPORT OF MASTER PLAN IMPLEMENTATION

FUNDING IN SUPPORT OF MASTER PLAN IMPLEMENTATION

Regular engagement between members of the Master Plan Implementation Committee, will provide an important mechanism to identify existing and emerging funding to support Master Plan implementation. The overall approach to funding will remain as it is currently stands, with the Region providing funding to support Master Plan implementation and the City responsible for operations funding.

Funding in support of Master Plan implementation must focus on two core areas relating to:

- **Long-term ecological rehabilitation works including monitoring, and additional restoration activities as identified though implementation of the Beachway Park Invasive Plant Inventory and Rehabilitation Adaptive Management Plan; and**
- **Costing and development of physical infrastructure, including nature-based solutions such as the foredune restoration.**

Accordingly, a Funding Strategy needs to be developed to identify and secure funding to support delivery of the Phased Implementation Plan. Development of the Strategy would be led by the Master Plan Implementation Committee and be prepared in partnership with Halton Region, Conservation Halton, and the City of Burlington. It is assumed the Strategy will be a living document that is regularly updated to reflect changing funding opportunities and the status of Master Plan implementation.

It is important that the Funding Strategy allocate annual base-level funding to ensure that implementation of adaptive management actions, such as monitoring, can be conducted over the long-term following the completion of construction and restoration works. In addition, in the immediate term, the Funding Strategy should reflect the focus on advancing restoration and rehabilitation works associated with Cobble Beach, The Strand and Wind Beach.

Fundraising strategies for the Master Plan implementation should outline the parties responsible for funding each element of the Master Plan and consider alternative funding strategies (e.g. sponsorships, partnership funding). Staff assigned to the management and programming of the Park, should explore opportunities for sponsorships and funding partnerships. This may include corporate sponsorships, private donations (consistent with the City's Celebration Program, where appropriate), fundraisers and events, as well as more unique approaches, such as crowdfunding.

Where unanticipated funding becomes available from the Project partners, or external sources such as federal/provincial funding programs, specific aspects of the Master Plan should be prioritized using the core principles outlined in this Plan and in keeping with the vision and design principles of the Master Plan.

10.0
PHASED IMPLEMENTATION PLAN

PHASED IMPLEMENTATION PLAN

The following is a proposed phased approach to implementing the Master Plan and assumes that full implementation of the Master Plan will take place over a 12 year period between Year 1 (2023) and Year 12 (2035).

The phased approach is informed by the assumption that various Master Plan elements will be bundled into a number of work packages for detailed design and construction. While the work packages will have a spatial focus, and align with the 5 zones within the Master Plan, it is possible that some elements within a given zone may be advanced on different schedules. It is also likely that, in addition to larger bundled work packages, some Master Plan elements or activities may be advanced as stand-alone projects.

Key activities, that will be undertaken to implement the Master Plan, are reflected in **Figure 10.1**, and are grouped around the five Master Plan zones. The proposed phasing of specific Master plan elements reflects a number of considerations including the importance of advancing elements, such as those associated with Cobble Beach, in the near term and an understanding that the schedule for other elements (i.e., The Skyway and Commons) will be contingent on advancing agreements with other parties and/ or acquiring land.

In addition to implementation activities that are specific to specific spatial areas, **Figure 10.1** also identifies overarching tasks and activities that are supportive of the overall program of Master Plan implementation. These tasks include items such as identifying the institutional capacity to oversee Master Plan implementation as well as tasks such as confirming resources needed to oversee Master Plan implementation, developing supporting communications plans, and identifying funding.

With respect to potential relocation of or modification to existing HONI transmission towers that cross the Park, the Phased Implementation Plan assumes the existing towers will remain in-place, and the phased work plan has been developed accordingly. If a decision is made in the future to re-locate or bury the towers, the implementation plan will have to be modified accordingly

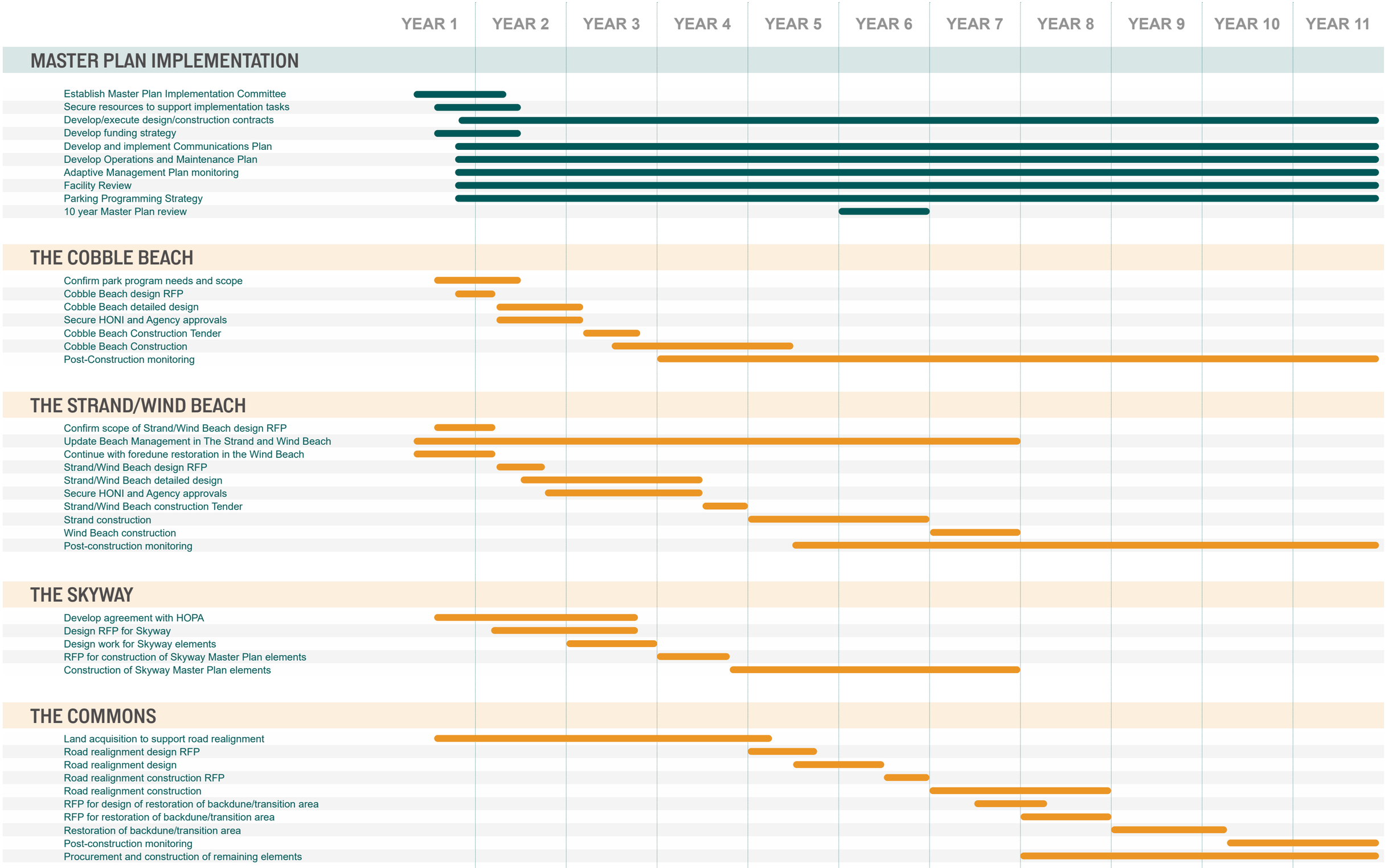

YEAR 1
YEAR 2
YEAR 3
YEAR 4
YEAR 5
YEAR 6
YEAR 7
YEAR 8
YEAR 9
YEAR 10
YEAR 11
MASTER PLAN IMPLEMENTATION
Establish Master Plan Implementation Committee
Secure resources to support implementation tasks
Develop/execute design/construction contracts
Develop funding strategy
Develop and implement Communications Plan
Develop Operations and Maintenance Plan
Adaptive Management Plan monitoring
Facility Review
Parking Programming Strategy
10 year Master Plan review
THE COBBLE BEACH
Confirm park program needs and scope
Cobble Beach design RFP
Cobble Beach detailed design
Secure HONI and Agency approvals
Cobble Beach Construction Tender
Cobble Beach Construction
Post-Construction monitoring
THE STRAND/WIND BEACH
Confirm scope of Strand/Wind Beach design RFP
Update Beach Management in The Strand and Wind Beach
Continue with foredune restoration in the Wind Beach
Strand/Wind Beach design RFP
Strand/Wind Beach detailed design
Secure HONI and Agency approvals
Strand/Wind Beach construction Tender
Strand construction
Wind Beach construction
Post-construction monitoring
THE SKYWAY
Develop agreement with HOPA
Design RFP for Skyway
Design work for Skyway elements
RFP for construction of Skyway Master Plan elements
Construction of Skyway Master Plan elements
THE COMMONS
Land acquisition to support road realignment
Road realignment design RFP
Road realignment design
Road realignment construction RFP
Road realignment construction
RFP for design of restoration of backdune/transition area
RFP for restoration of backdune/transition area
Restoration of backdune/transition area
Post-construction monitoring
Procurement and construction of remaining elements

Figure 10.1

BURLINGTON BEACH
KEY PLAN

MHBC
PLANNING
URBAN DESIGN
& LANDSCAPE
ARCHITECTURE

COBBLE BEACH

The construction of the headlands is proposed to be advanced first as this work underpins and supports restoration of beach and back dune areas and could take multiple construction seasons to complete. It will also require heavy construction equipment and material staging areas (e.g., armour stone), so it should be completed prior to improvements in The Strand.

The key steps, and schedule, for advancing Master Plan elements associated with Cobble Beach, are as follows:

- Given complex permitting requirements at The Cobble Beach, that include environment permits as well as approvals to build adjacent to HONI and Trans Northern infrastructure, the Region will advance initial discussions with key agencies in advance of procuring a Design Contractor. Such discussions will take place in the Year 1(2023) and will focus on sharing initial design concepts in order to confirm that the proposed concept is approvable, and identify design and construction issues that need to considered during the detailed design process.
- The RFP for a Design Contractor will seek a heavy civil engineering firm with specialized skills and expertise relative to the design and construction of headland-beach system.
- It is proposed that elements within Cobble Beach which are separate and distinct from construction of the headlands, such as the First Nations interpretive centre, picnic area/shelter, benches, and ecological restoration (i.e., new plantings) be included in the RFP for the design and construction of The Strand and Wind Beach elements.
- The RFP for detailed design will be released in the fall of 2023, awarded by January of 2024, and it is assumed would take a full year to complete.

- The Design Contractor will be responsible for:
  - » Developing a procurement package including design drawings, confirm a cost estimate, and provide support during evaluation.
  - » Developing an anticipated construction schedule, for inclusion in the RFP, that accounts for seasonal considerations and environmental exclusion periods (i.e., avoid high-use summer season).
  - » Identifying performance metrics to be monitored to evaluate the effectiveness of constructed headlands and beaches, and following construction to support adaptive management monitoring.
  - » Confirming environmental permitting and approval requirements and develop and submit applications for permits and approvals. Once permits are secured, assisting with the development of a tender package, release, and selection of a Construction Contractor.
  - » Required agency approvals should be in-place prior to retaining the Construction Contractor. Schedule constraints associated with permitting of proposed works associated with Cobble Beach include in-water works windows as well as obtaining HONI approval for headlands construction adjacent to existing hydro towers.
  - » Onsite construction observations and/or supervision.
- The tender for construction would be issued in the spring of 2025. In addition to construction services, the Construction Contractor would be required to provide environmental services to develop and implement a Construction Environmental Management Plan that complies with the terms and conditions of permits and approvals.
- It is assumed Construction would be undertaken between fall 2025 and spring 2027. It may require multiple seasons to complete and must avoid the summer. The anticipated construction schedule will be informed by input from the Region and Partners and consider current use of the Park.
- In addition to the above noted tasks that are specific to Cobble Beach, there is a requirement to undertake a tree inventory across the Park. The inventory is required to support permitting associated with proposed tree removal, and Species at Risk (bat) requirements, associated with implementation of Master Plan elements in multiple zones including The Cobble Beach. It is recommended that this scope of work be undertaken in Year 1 (2023) to avoid the need for such information becoming a schedule constraint. This scope should be contracted out separately from the detailed-design contract for The Cobble Beach.

THE STRAND AND WIND BEACH

The construction of Master Plan elements associated with The Strand and Wind Beach are proposed to be advanced in concert given similarities in the nature of physical works to be advanced and the integrated nature of such works.

The key steps, and schedule, for advancing Master Plan elements associated with The Strand and Wind Beach are as follows:

- The RFP for detailed design of Master Plan elements associated with The Strand and Wind Beach will be released in the spring of 2024. This additional time allows the Partners to focus efforts on Cobble Beach design and procurement and while also initiating work to identify native vegetation and seed stock for vegetation restoration in subsequent years.
- The RFP for a Design Contractor, for The Strand and Wind Beach, will seek a multi-disciplinary team led by a landscape architect/urban design expert complimented by technical ecological restoration expertise, civil engineering design, First Nations design expertise, and beach/dune restoration. It is assumed a single contract, for detailed design of both areas and the ecological restoration associated with Cobble Beach, will be awarded to ensure a consistent, integrated, and efficient approach to construction of Master Plan elements in these areas.
- It is assumed that the scope of the RFP for the detailed design for The Strand and Wind Beach will primarily focus on beach and dune restoration, ecological restoration and vegetation enhancement works as well as the construction of Master Plan elements (i.e., boardwalk) and ancillary requirements (e.g., measures to stop access to informal trails, creation of formal trails, supporting signage) that are integral to the success of restoration works.
    - » The Strand involves new parking lots, new alignment for multi-use trail, play structure, firepit, rental building, controlled access walkways to the beach, foredune restoration, signage/benches/ etc., and the ecological restoration inland of the foredune. All elements have to go to final design at the same time, because the parking lots influence the controlled access walkways, which influences the multi-use trail, etc.

- » The Strand involves new parking lots, new alignment for multi-use trail, play structure, firepit, rental building, controlled access walkways to the beach, foredune restoration, signage/benches/ etc., and the ecological restoration inland of the foredune. All elements have to go to final design at the same time, because the parking lots influence the controlled access walkways, which influences the multi-use trail, etc.
- » Master Plan elements at the Strand also include provisions for washrooms associated with the existing Pump House and Rental Building. As there is no link to City services at these locations, additional work is required to identify solutions for managing sewer/septic waste that align with Halton Region, City of Burlington and Conservation Halton policies.
- » The type of ecological restoration between the multi-use trail and restored foredune will require thought about users, visitor experience, etc. The proposed detailed design, will need to anticipate the way the area is currently used and identify temporary and permanent design elements to encourage people to stay out of restored areas. The successful execution of the proposed works will also require a robust communications program to educate users about sensitivities in the area and its intended future use.

- The Design Contractor will be responsible for:
  - » Developing a procurement package including design drawings, confirm a cost estimate, and provide support during evaluation.
  - » Developing an anticipated construction schedule, for inclusion in the RFP, that takes into account the availability of native planting stock, and the preferred period for native plantings.
  - » Identifying performance metrics to be monitored to evaluate the effectiveness of the foredune restoration and following construction to support adaptive management monitoring of the beach and dune.
  - » Confirming environmental permitting and approval requirements and develop and submit, applications for permits and approvals. All permits and approvals should be in place prior to releasing an RFP to select a Construction Contractor.
  - » In addition to environmental permitting, the Design Contractor will be responsible for considering, and addressing in the design, requirements associated with building in proximity to the Trans-Northern pipeline and applying for and obtaining permits or approvals that may be required.
  - » Undertaking work to identify sufficient quantities of native plant and seed material, in order to support ecological restoration works beginning in 2026.
  - » On-site construction observation and/or supervision.

- In addition, to support the dune restoration and increase resilience to high lake levels in Wind Beach, the Region and Partners should take steps to eliminate raking of the beach starting in the spring of 2023, as per the recommendations in the original Master Plan and the Zuzek Inc. Beach and Dune Restoration and Management Plan. If one pass is needed to access The Strand from the Wind Beach, it should be confined to the width of the surf rake beach grooming machine, immediately landward of the wrack line and avoid disturbing the vegetation material associated with the wrack line.
- In order to support the change in beach management practices, it is recommended that in early 2023 steps will be taken to communicate this change both to maintenance staff as well as beach users. It is assumed that these tasks will be undertaken as part of the development and implementation of a Communications Plan to support Master Plan implementation.
- Advancing Master Plan elements at The Strand will require engagement with the catamaran club to create a formal agreement regarding the use of the land, including future site boundaries, location of facilities, and access to be developed in future phases of the Park. The engagement should also include adjusting boat mooring location and footprint in a manner that achieves foredune stabilization requirements. It is assumed this would be led by the Region or Partners with the support of the Design Contractor.
- The RFP for Construction Contractor would be released in fall of 2026. The RFP would include a requirement for a phased construction schedule for The Strand and Wind Beach such that work in the two areas takes place over a minimum of three seasons. This would ensure that some portions of Park and beach are available to users throughout construction.
- In addition to construction, and ecological restoration services, the Construction Contractor would be required to provide environmental services to develop and implement a Construction Environmental Management Plan that complies with the terms and conditions of permits and approvals.
- The Construction Contractor would also be required to provide up to 2 years of support service to assist native plantings in becoming self-sustaining. This would include where, appropriate: watering of plantings and replacement of plant stock that does not survive. It is proposed that monitoring of the success of native plantings, and invasive species removal, be undertaken by an independent environmental monitor who can assist with monitoring past the warranty period of the construction contract.

THE COMMONS

The schedule for advancing Master Plan key elements associated with the Commons, in particular a re-aligned Lakeshore Road, is contingent on acquiring properties to support proposed works. Given that the road re-alignment will influence how other Master Plan elements in this area are designed and constructed, it is assumed that design of Master Plan elements associated with The Commons, are not advanced until property acquisition is sufficiently advanced.

For the purposes of proposed implementation schedule, it is assumed that property acquisition, sufficient to allow the re-alignment of Lakeshore Road will take 4 years and be complete until 2027. As such, the assumed schedule for design and construction of Master Plan elements associated with The Commons is premised on a 2027/2028 start date.

The key steps, and schedule, for advancing Master Plan elements associated with The Commons are as follows:

- The RFP for detailed design of the road realignment will be released in Year 5 (2027/2028). The re-alignment of Lakeshore Road in The Commons will involve upgrading it to a park-like road. The design of the re-aligned road will integrate landscape enhancements and drainage requirements and is assumed to be done under the detailed design contract for road design. The scope of the road design contract will also on street parking and parking lots associated with the Commons. It is assumed the detailed design of non-road/drainage infrastructure, will be subject to separate procurement process that focuses on remaining infrastructure.
- As the re-aligned Lakeshore Road spans The Commons, and will include road-related drainage, it recommended that the contract for road design also include site-wide drainage planning taking into account other future planned infrastructure that might influence drainage requirements. In addition, drainage planning would integrate proposed water management related Master Plan elements at The Commons including bioswales and the stormwater management pond.

- It is assumed that the detailed design of the road re-alignment will occur in Year 5, with procurement for a Construction Contractor taking place in Year 6 and construction related to road realignment being complete by Year 8.
- Once the properties have been acquired, infrastructure is removed and Lakeshore Road and/or Lakeshore Court is rerouted, rehabilitation of the backdune transition area can occur. This will involve the addition of sand parent material to create a more natural profile and accommodate a greater number of native plantings with the elevation and profile of additional material informed by detailed design. The schedule assumes that design of restoration works, and even selection of a Contractor, can occur concurrent to road realignment such that restoration works are initiated immediately following the complete of road realignment works.
- The development of the remaining Master Plan elements (i.e., over above road, parking, drainage, and restoration works), will take place between years 8 and 12. It is also assumed that some of the work to undertake design and procure a construction contractor can take place in parallel to earlier stages of work.
- If not previously undertaken by the time that the re-alignment of Lakeshore Road is complete, future development at The Commons is assumed to include a City maintenance/storage facility. Once the re-alignment of Lakeshore Road is complete, a controlled access road from Lakeshore Road to the Catamaran Club and City maintenance yard as part of the realignment of Lakeshore Road.
- The development of infrastructure at The Commons will include washroom facilities in close proximity to the Artisan Market Building. At this time, there is no connection to sewer services and current City policy does not allow for septic tanks. Additional work needs to be done to identify an approach for managing sewer/septic streams and obtain approval prior to design of buildings/washroom facilities associated with the Commons.

THE SKYWAY

Advancing the Master Plan key elements associated with the Skyway (i.e., pier upgrades and new road from the Skyway to the Canada Centre for Inland Waters (CCIW)) is contingent on the development of an agreement with HOPA and acquisition of remaining land needed to build the road.

As such, the schedule for implementation of Master Plan elements associated with The Skyway **(Figure 10.1)** identifies effort focused on land acquisition and the development of an agreement with HOPA. It is assumed that, pending resolution of access considerations, a schedule for the design and construction of specific Master Plan elements, associated with The Skyway, will be developed and the Master Plan Implementation Schedule updated accordingly.

Given that the Master Plan elements associated with The Skyway are not integrated with, or dependent on, restoration of dune or beach areas, the schedule for advancing such elements can be expedited once an agreement is reached with HOPA. In particular, upgrades to the Pier could be advanced as a stand-alone works package and provide an opportunity for engaging with the public on Master Plan implementation. For the purposes of the proposed implementation schedule, it is assumed that an agreement with HOPA, that would support other works at the Skyway to be advanced would occur no sooner than Year 3 (2025). As such, the assumed schedule for design and construction of Master Plan elements associated with The Skyway is premised on a Year 4 (2026) start date.

The key steps, and schedule, for advancing Master Plan elements associated with The Skyway are as follows:

- Continue dialogue with HOPA in order to secure approval to advance Master Plan elements associated with The Skyway which require HOPA approval.
- In order to facilitate dialogue with HOPA, and prepare to advance individual Master Plan elements opportunistically subject to funding and access agreements, work could be initiated to develop designs for Master Plan elements associated with the Skyway. The proposed schedule assumes some design work begins in Year 2 (2024).
- Depending on the stage of discussions with HOPA, it may be prudent to develop preliminary designs which can be finalized to accommodate input from HOPA where relevant.
- Design work could be strategically focused to expedite specific Master Plan elements that are relevant to establishing an agreement with HOPA.
- Similar to Cobble Beach and Wind Beach, the design of Master Plan elements associated with The Skway should be undertaken by a multi-disciplinary team led by a landscape architect/urban design expert and complimented with civil engineering capacity for the design of the road and bike paths.
- The assumed schedule for the Skyway assumes that an RFP for construction is released in late Year 4 (2026) with construction taking place between 2027 and 2029.

MASTER PLAN IMPLEMENTATION TASKS

In addition to design, procurement and construction of specific Master Plan elements, there are a number of administrative, and program delivery tasks that are supportive of the long-term delivery of the Master Plan. Assumed start dates for these tasks are proposed in **Figure 10.1**, with an emphasis on the tasks that are most critical in terms of supporting the early physical works that are

Establish Master Plan Implementation Committee

Implementation of the Master Plan, and adhering to the milestones in the proposed schedule, will require focused and ongoing effort from the Region and Partners. As such, establishing the Committee is an important first step to kick-off implementation of the Master Plan.

The Master Plan Implementation Committee will be responsible for providing leadership, to internal staff and contractors, that are responsible for advancing key tasks such as: advancing design and construction works; developing and implementing supporting communication plans; developing new operations and management plans; continuing work to acquire land or secure land access agreements, identify funding to support Master Plan implementation, and monitoring Master Plan implementation.

Secure resources to support Master Plan Implementation

The Phased Implementation Plan assumes a significant amount of design and construction work will be advanced between 2024 and 2029. As such, it is imperative that dedicated resources, with appropriate technical expertise, are available during this time when time sensitive physical restoration works are proposed.

Master Plan implementation will require an overall Project Manager with experience in design, procurement, and construction of similar works as well as contract management of such services. It is assumed this role would be a full-time position during the early stages of Master Plan implementation when there are multiple design and construction contracts concurrently active.

Other technical expertise and resources that will be required to support the Project Manager, and Master Plan Implementation Committee, will include personnel with expertise in environmental management (i.e., environmental monitoring, permitting), communications (i.e., developing and executing communications plans), as well as expertise in park operations and management. It is assumed that resources to support Master Plan implementation will include a mix of internal and external resources and that tasks such as engagement with external parties and developing communication and funding plans, will be led by staff working for the Region or Partners rather than contractors who might support such activities.

Following identification of resources to support Master Plan implementation, it is assumed that the project team established to oversee implementation works (i.e., development and oversight of design, procurement, and construction contracts) will begin work in late 2023 as shown in Figure X.

Develop and Implement Communications Plan

A communications plan, that anticipates the challenges and opportunities associated with various stages of Master Plan implementation, and proposes communication mechanisms to capitalize on potential opportunities and avoid or minimize challenges, needs to be developed and resources identified to support the delivery of communications activities. The communications plan will facilitate the development of partnerships with funding partners, federal authorities, adjacent landowners, stewardship interests and users to and help to build support for and alignment around Master Plan implementation.

In addition to communications and engagement with external parties, the Communications Plan will also provide for and support communications with Partner staff including various departments within the City with responsibilities related to the Park. The Communications Plan will also guide the development of consultation activities with internal and external parties, focused on specific work packages, to support the development and delivery of detailed design and construction plans.

Key objectives of the Communications Plan are to:

- Raise awareness of Master Plan implementation, in general, amongst users and key stakeholders including changes in how the Park will operate in the future.
- Inform all interests regarding the schedule, and key milestones associated with construction and Master Plan implementation.
- • Obtain feedback on detailed design and construction plans, and construction phase works, during implementation.
- Build partnerships with users and key stakeholders, including stewardship groups and adjacent land owners, who can provide support in advancing the Master Plan, and
- Educate users about new practices for using and maintaining the Park and protecting its unique features and ecology.

Operations and Maintenance Plan

As noted in several preceding sections, successful implementation of the Master Plan assumes that, going forward, there will be changes in the way the Park is operated and managed. Such changes will focus on avoiding management practices that do not align with efforts to restore, and maintain, dune and beach areas including their associated vegetation and biota.

As such, an important deliverable to support Master Plan implementation, is an Operations and Maintenance Plan that establishes operations and management practices that align with and support restoration of the Park.

The scope of the Operations and Management Plan would include, at minimum:

- Standards for operations and maintenance in areas of sensitive dune communities
- Confirming access points for operations and maintenance including access to support HONI maintenance of existing infrastructure
- Practices for controlling beach and dune access for recreational users
- Identifying maintenance activities that support sensitive natural features
- Identifying appropriate beach grooming practices.

As the Operations and Maintenance Plan will focus on maintenance activities conducted by the Region and Partners, as well as entities such as HONI with infrastructure running through the Park, implementation of the would be supported by education and training activities that focus on Operations and Maintenance staff.

It is assumed the Operations and Management Plan would be developed by early 2024 to support immediate term changes in O&M practices that are proposed but that it would evolve, during the construction phase of the Project, until such time that all Master Plan elements have been completed.

It is noted that with future expansion of the Park, and the potential requirement for site-specific maintenance procedures, future consultation is required with the City of Burlington for storage of maintenance equipment on site. Currently, beach maintenance equipment is brought to site as required but it is anticipated that maintenance requirements will increase and change in the future.

Adaptive Management Plan Monitoring

As noted in the previous sections each phase of work to be advanced will include the identification of adaptive management metrics to be tracked to assist in evaluating the success of Master Plan elements such as beach and dune restoration, native plantings and the removal of invasive plants. As adaptive management measures will be implemented across different phases of work, and differing timescales, the successful delivery of the adaptive management program will require:

- Identification of personnel to track adaptive Management program monitoring results and communicate key findings and recommendations to the Master Plan Implementation Committee; and
- Establish a regular reporting schedule for providing updates to the Master Plan Implementation Committee.

Facility Review

Ahead of the design of Master Plan elements associated with The Strand and The Commons, a facility review needs to be conducted to confirm the needs and operational requirements associated with infrastructure to be designed and constructed.

In the case of The Strand, the scope of the review would consider, at a minimum, the needs and operational requirements of the rental building, the number of toilet facilities required for the Pump House, potential new requirements or possible replacement of the existing amenity building, as well as infrastructure needed to support operations staff. It is assumed the facility review for The Strand would be conducted in 2023/2024 to inform the design RFP process. The facility review for The Commons is assumed to be undertaken at a later date and potentially as part of the 10 year Master Plan review.

Park Programming Strategy

In alignment with advancing additional infrastructure that will change the ways users engage with the Park, it is recommended that Programing Strategy be developed. The objective of the strategy would be to develop and advance park programs that take advantage of new infrastructure. As such, the Strategy would have a primary focus on programs associated with The Common. However, it is also assumed that the Strategy would support programming that encourages new ways for users to experience the Park and would consider programming focused on restored natural areas and associated ecological values.

Similar to the Operations and Management Plan, it is assumed that a Park Programming Strategy would be developed in early 2024, with a focus on what infrastructure is available through the early phase of construction. The Strategy would be reviewed and updated, on an annual cycle, with programming changing as Park infrastructure advances and restoration works are completed.

It is assumed development and updates to both the Park Programming Strategy and Communications Plan would be undertaken in concert with Park programming representing an important opportunity to achieve key objectives of the Communications Plan including education and awareness of Master Plan Implementation. In particular, Park programming could include activities that increase education and awareness of both WHY and HOW restorations works are being undertaken, the benefits of such works, and how users can help protect restored areas in the future.

10 Year Master Plan Review

The Master Plan includes a recommendation for a 10 Year review of the Master Plan in order to take into account evolving conditions within the Park as well as the changing priorities of the organizations leading Master Plan Implementation. In the context of the proposed scope of work presented in the Phase Implementation Plan, and work that has been undertaken as part of the Master Plan Update, it is recommended that the first Master Plan Review be undertaken in approximately Year 6 (2029) once final design of works at The Cobble Beach, The Strand, and Wind Beach have been design and construction advanced and all remaining land/ access issues are resolved. The exact date for the review would be set by the Master Plan Implementation Committee.

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