



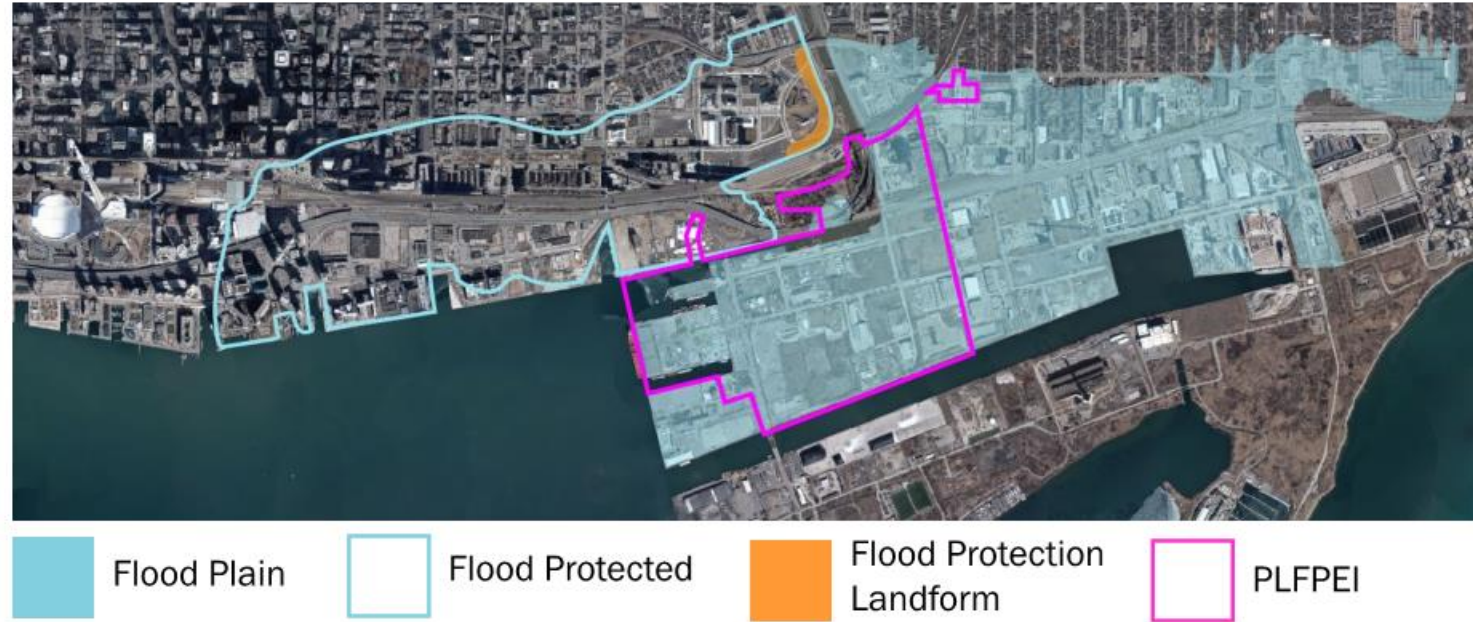
Port Lands Flood Protection: Parks

Detailed Design

April 22, 2020

Project Description and Background

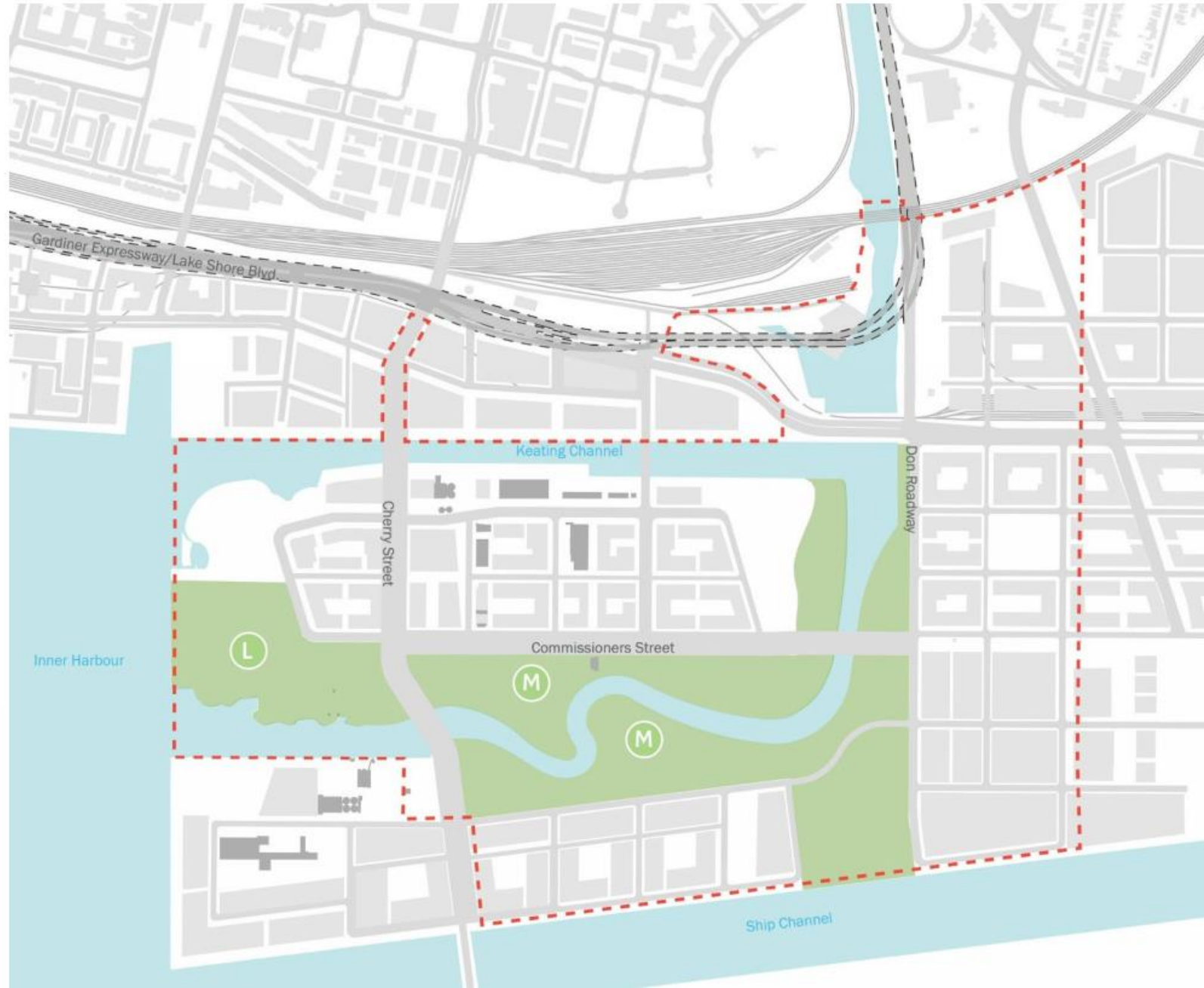
- 290 hectares of southeastern downtown Toronto are at risk of flooding from the Don River watershed
- The Port Lands Flood Protection and Enabling Infrastructure Project is a comprehensive solution to flood protection
- Items that will be presented today:
 - Parks Detail Design Review



Parks

- A** Cherry Street Stormwater and Lakefilling
- B** Polson Slip Naturalization
- C** Flood Protection - River Valley
- D** Don Greenway (Spillway & Wetland)
- E** Don Roadway Valley Wall Feature
- F** East Harbour Flood Protection Land Form
- G** Sediment and Debris Management Area
- H** Flow Control Weirs
- I** Eastern Avenue Flood Protection
- J** Villiers Island Grading
- K** Keating Channel Modifications
- L** Promontory Park South
- M** River Park
- N** Lake Shore Road and Rail Bridge Modifications
- O** Cherry Street Bridge North
- P** Cherry Street Bridge South
- Q** Commissioners Street Bridge
- R** Old Cherry Street Bridge Demolition
- S** Site Wide Municipal Infrastructure
- T** Don Roadway
- U** Hydro One Integration
- V** Commissioners Street
- W** Cherry Street Re-alignment

-  Port Lands Flood Protection and Enabling Infrastructure Boundary
-  Earthworks/Flood Protection
-  Parks
-  Bridges & Structures
-  Roads and Municipal Infrastructure



Team Structure



Project Schedule – Anticipated Design Schedule

- 10/10/2019- 60% Design Submission (River Valley Park North/River Valley Park South) Work Package #9
- 10/31/2019- 95% IFT Submission (River) Work Package #8
- 01/23/2020- 100% Design IFC Submission (River) Work Package #8
- 02/26/2020- DRP Review- Promontory Park South Schematic Design
- 04/22/2020- DRP Review- Promontory Park South and River Park (North and South) Detail Design
- 05/07/2020- 60% Design Submission (Promontory Park South/Canoe Cove) Work Package #9.1
- 01/31/2021- 90% Design IFT Submission (River Valley Park North and South Landscape & Finishes)

Promontory Park South and River Valley Park North/South

April 2020



Recap – Parks and River

September 2018

- Consider retaining more of the industrial heritage features in the revised design.
- Demonstrate the dynamism of the river by showing what it will look like in a 100-year flood event and after.
- The pedestrian bridges require more design consideration in relation to the road bridges.
- Consider making pedestrian connections into the river valley at the termination of each north-south street.
- Accommodate both a destination playground and a significant cultural institution in the plan.

Recap – Integration

June 2019:

- Develop a strategy on how to achieve continuity and leverage discrete elements in the park.
- Consider bringing concrete paving on the entry paths all the way to the interior circulation paths.
- Consider a larger, stronger and more direct entrance to the park, at the corner of Commissioners and Cherry St.

Recap – Parks and River: Promontory Park South

February 2020

- Consider the design of the edges of the park.
- Strengthen the industrial heritage presence in the park, consider **bolder** design gestures.
- Design to communicate the ecological impact of the project.
- Consider the utilization and operations of the park, i.e. staging area for concerts at the big lawn.
- Important to separate dog area with fencing.
- Encouraged the team to be **bold** and develop surprising moments in the design.
- Develop **bold** strategies to improve climate resilience for the park.
- Embrace the impact of rising lake level on the design.
- Consider the winter conditions and programming.
- Consider the scale and presence of the great lawn.
- Provide renderings of the Water's Edge Promenade.
- Consider the long term vision of the precinct and nearby future developments.

Areas for Panel Consideration

Parks and River:

- Balance between programmed space and designed nature
- Clear articulation of the path network within the parks
- Balance of response to site technical constraints and achieving design objectives
- Sensitive integration of heritage elements within the park
- Consider of wide range of programming, as well as operations and maintenance of the park
- Consideration of the dynamism of the river system and creation of resilience strategy

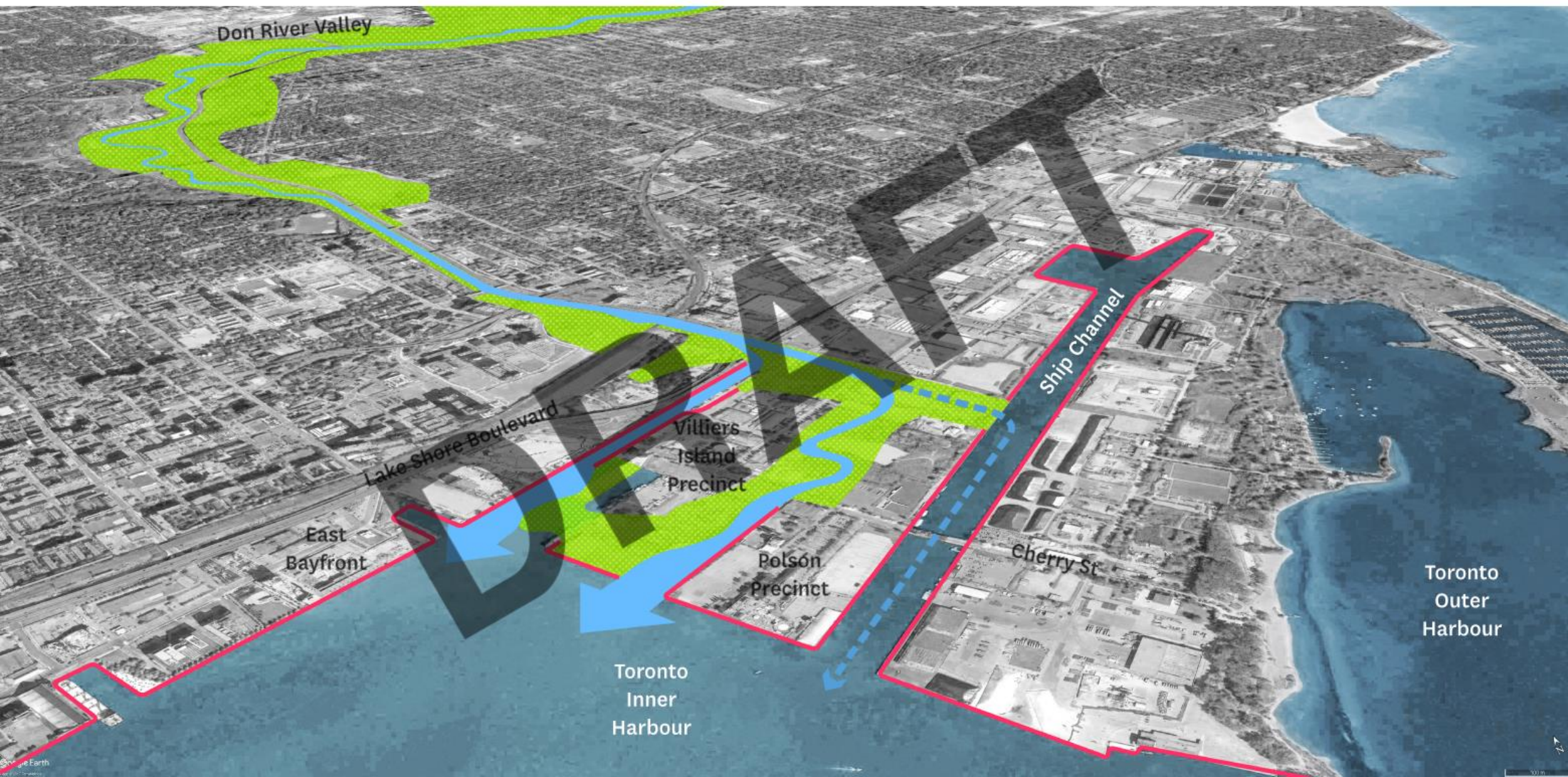
Port Lands Flood Protection & Enabling Infrastructure Parks Detailed Design Review #3B

Prepared for Waterfront Design Review Panel
April 22, 2020

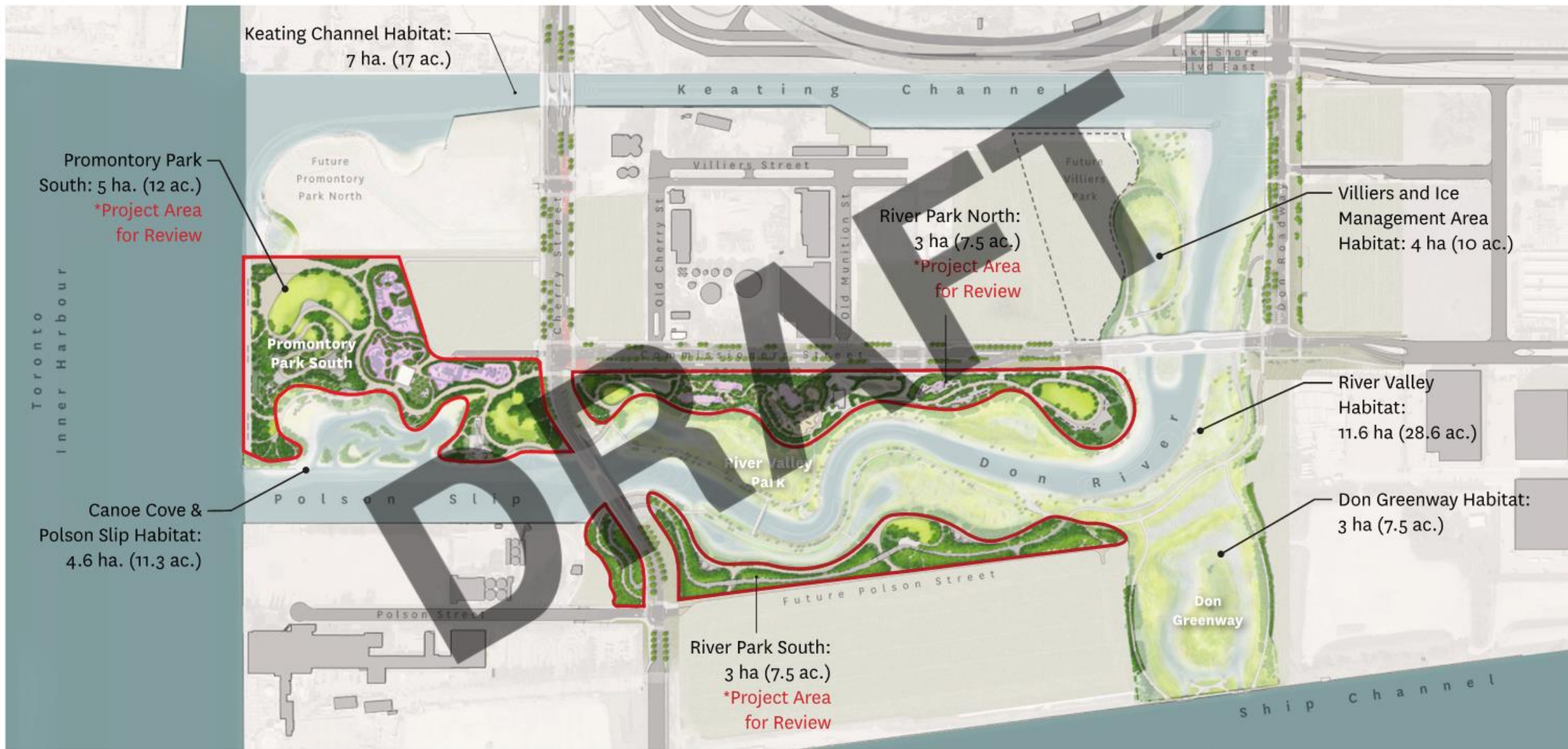
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Michael Van Valkenburgh Associates, Inc.
Landscape Architects

Bringing The Don River Valley to the City



The Port Lands - 2024



Project Feedback

Design Review Panel

- Find a role for **public art** within the design
- Develop signage and way-finding
- Create a family of materials and furnishings
- **Consider future conditions** in and around the park, such as the catalyst building and urban massing
- Future-proof the design to **accommodate fluctuating lake levels**
- **Study event programming** at the central lawn
- Develop **park operations** and programming
- Choreograph **winter programming and character**
- Consider unique engagement opportunities between park visitors and site ecology
- Create an **inventive, bio-diverse, and daring planting strategy**
- **Strongly integrate remnants** of industrial and natural heritage
- Provide renderings of the Esplanade
- Develop the character of Destination Play

Community (Survey + Consultations)

- Feeling immersed in nature comes from ability to wander while discovering new views or un-manicured vegetation
- **Variation of landscape and ecology** was noted as “nice to have”
- People expressed a desire for **clear information about access points** (lighting and signage indicating formal paths)
- Emphasis on **views and variety of landscape types**
- **Create views of Inner Harbour and City**
- **All season use** support winter programming
- Facilitate public water activities and **connections/access to the water**
- **Integrate history** through preserving local heritage and culture (adaptive reuse, art)

SAC

- **Water access** and watercraft storage
- **Youth/school group** camp program space
- **Flexibility of spaces** to accommodate economic diverse population
- Recognition of **First Nations**
- **Universal access**
- Retaining **industrial heritage**
- Consider that park access off Commissioners Street will be in high demand
- **Preserve space for fire pits, gathering spaces,** and grills as the design progresses
- **Engage Indigenous Communities** in place-making
- Accommodate large crowds coming to and from events
- **Develop the seasonal accessibility** of the park
- Ensure that the **park is inclusive to various communities**

River Valley Park - Schematic Design Review



- ① Passive Use Lawn
- ② Picnic Terrace
- ③ Fire Hall #30
- ④ Nature Play
- ⑤ Dogs off Leash Area
- ⑥ Levee Wetland
- ⑦ Lake Connected Wetland
- ⑧ Overlook
- ⑨ Multi-use Path
- ⑩ Multi-Use Field
- ⑪ Pedestrian Bridge

River Valley (Floodplain) - Detailed Design Review



Promontory Park South - Revised Schematic Design Review



Promontory Park South and River Valley Park North/South - Updated Design



- ① Central Lawn
- ② Promontory
- ③ Esplanade
- ④ Canoe Cove
- ⑤ Atlas Crane Peninsula
- ⑥ Future Destination Play Area
- ⑦ Future Play Pavilion/Comfort Station

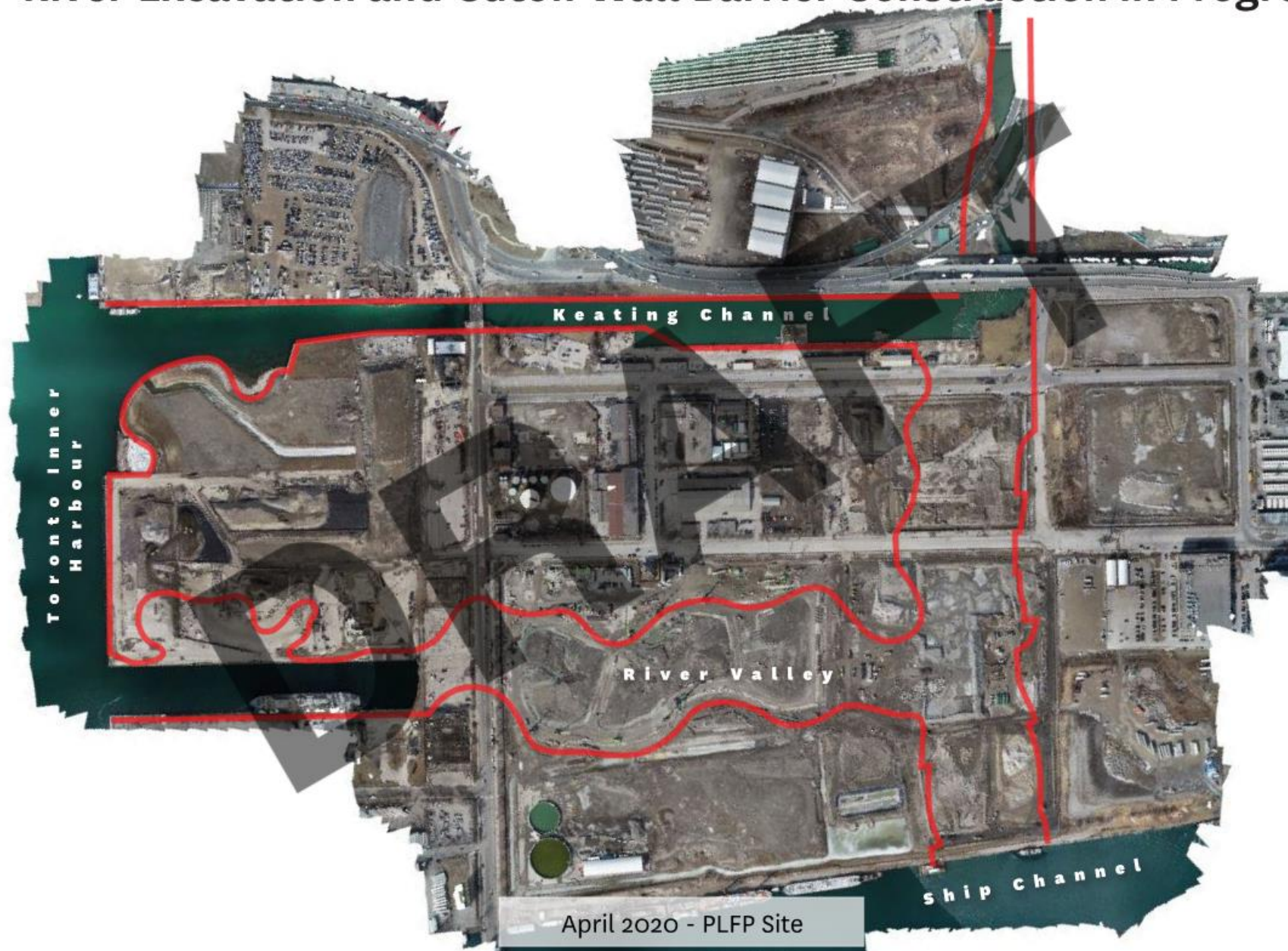
- ⑧ Wetland Viewing Lawn
- ⑨ Dogs Off Leash Area
- ⑩ Nature Play Area
- ⑪ Fire Hall 30 Plaza

- ⑫ Picnic Terrace
- ⑬ Picnic Lawn
- ⑭ Fitness Lawn
- ⑮ Lower Don Trail

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Approach and Strategy

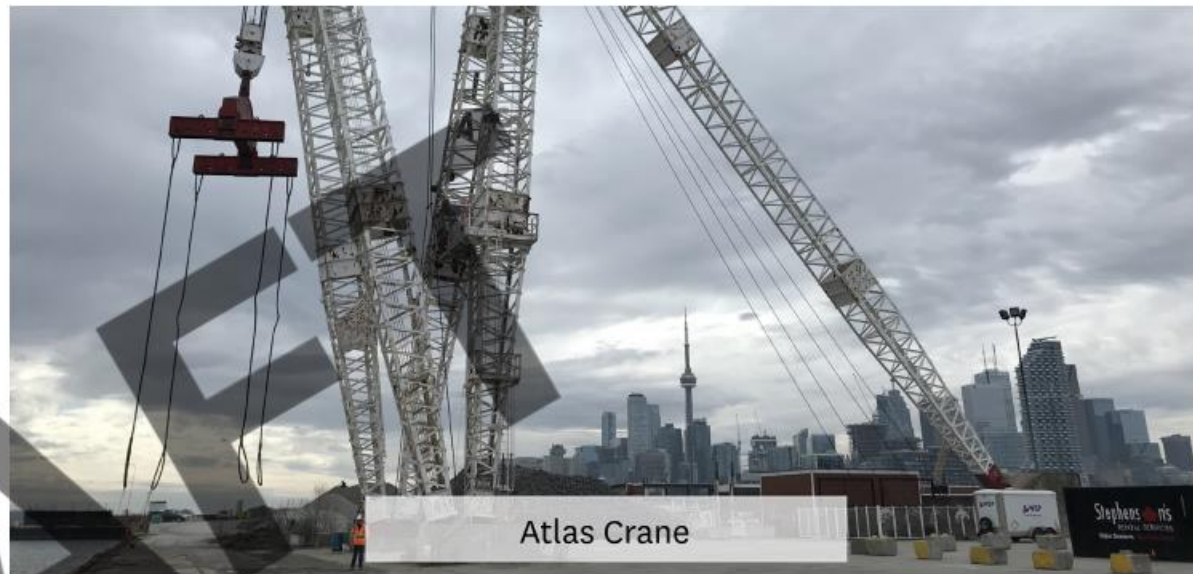
River Excavation and Cutoff Wall Barrier Construction in Progress



Retaining and Commemorating Industrial Heritage



MT-35 Building Girders



Atlas Crane



Fire Hall - 30



Lafarge Silos

River Valley and Forest Frame



Establishing a Forest Frame



Installation



Year 5



Year 20

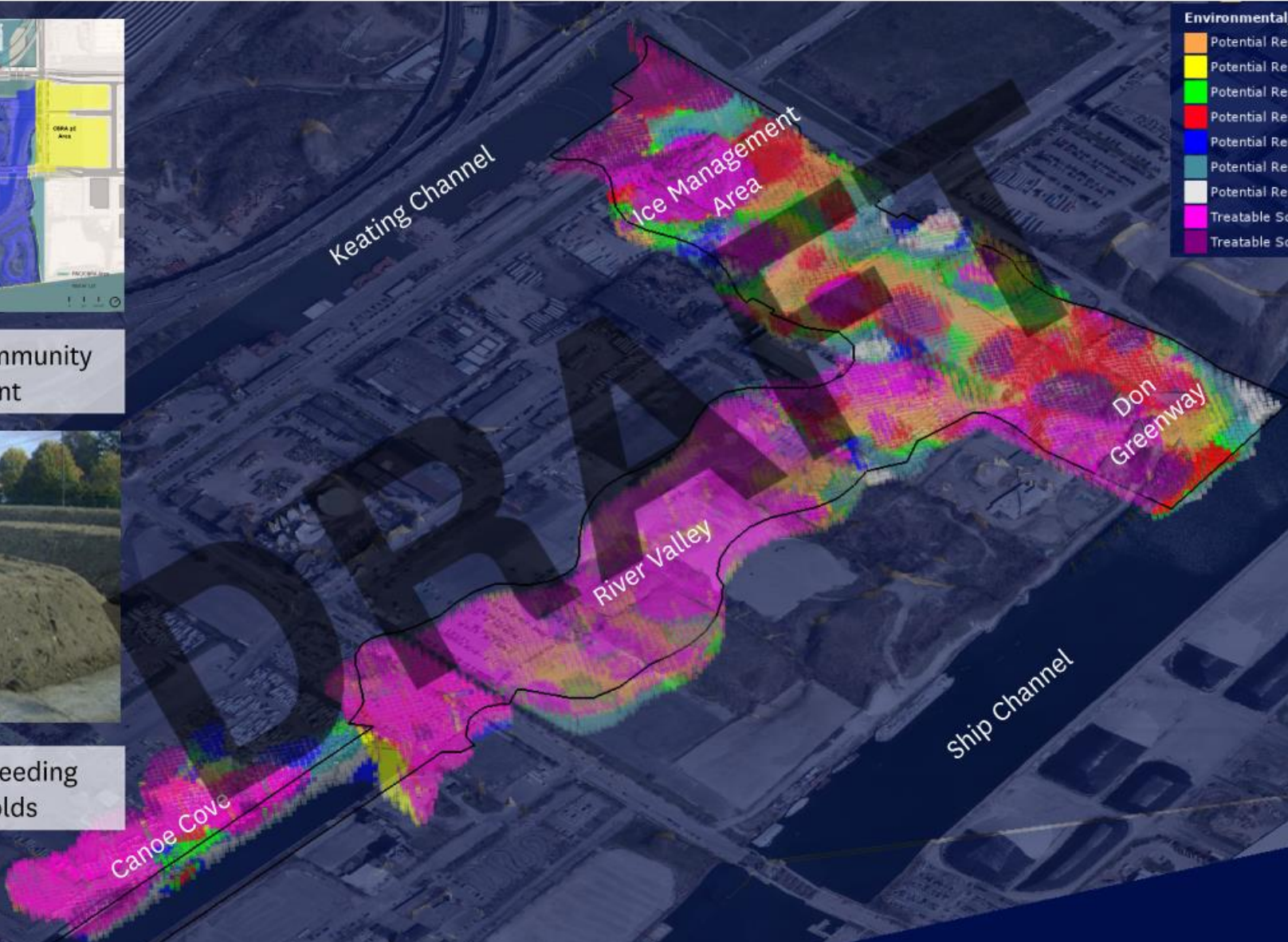
Existing Soil Reuse Strategy



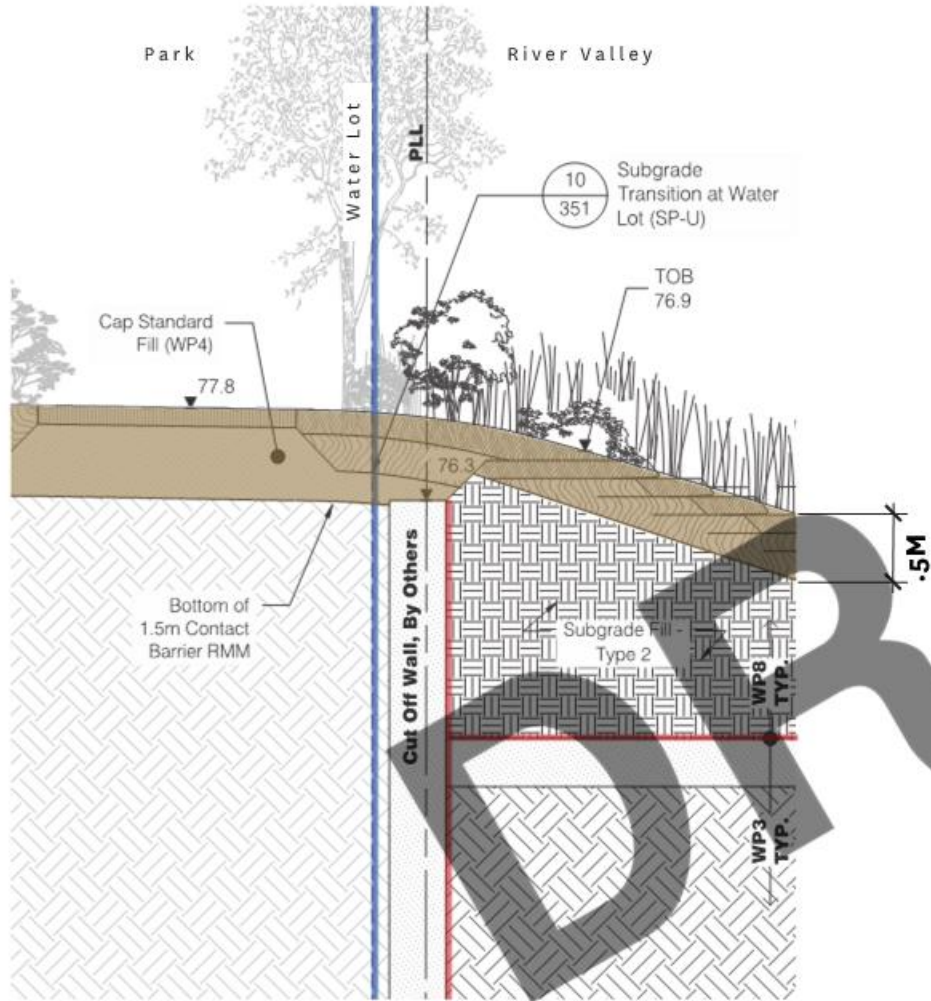
Soil Movement through Community Based Risk Assessment



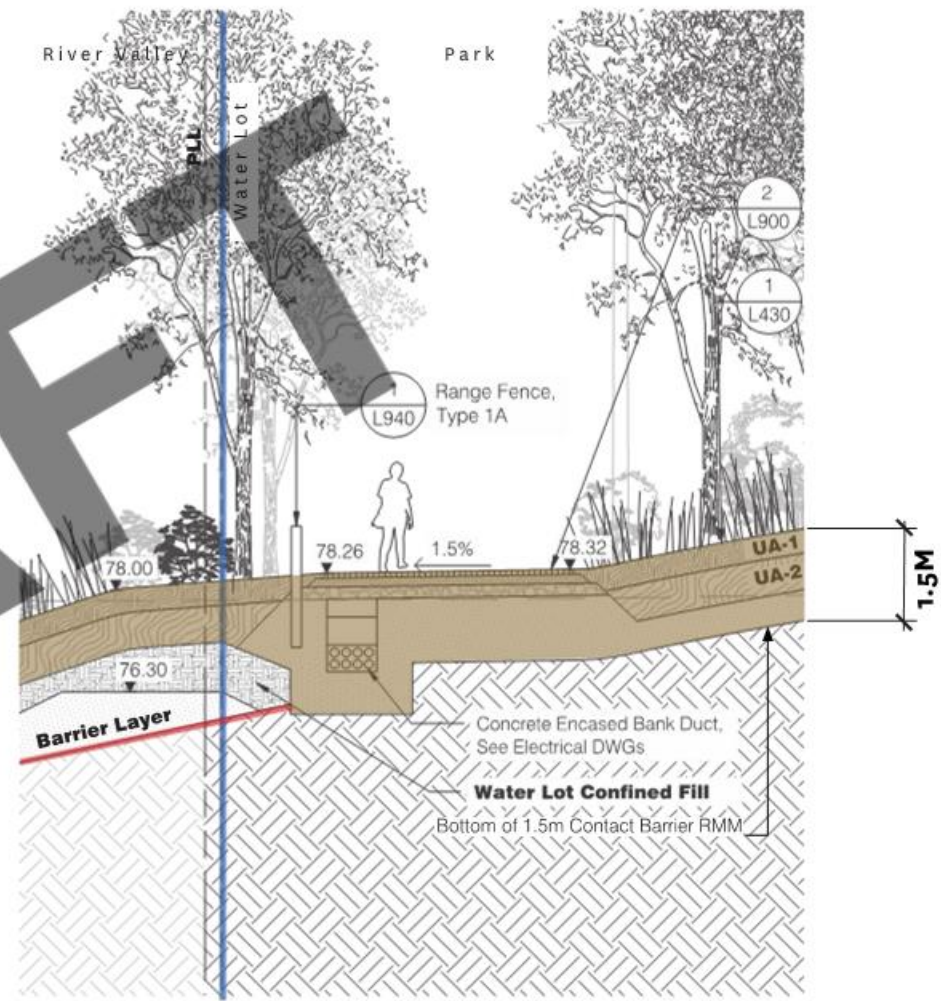
Soil Treatment for Soil Exceeding Environmental Thresholds



Risk Management Measures at Park and River Valley

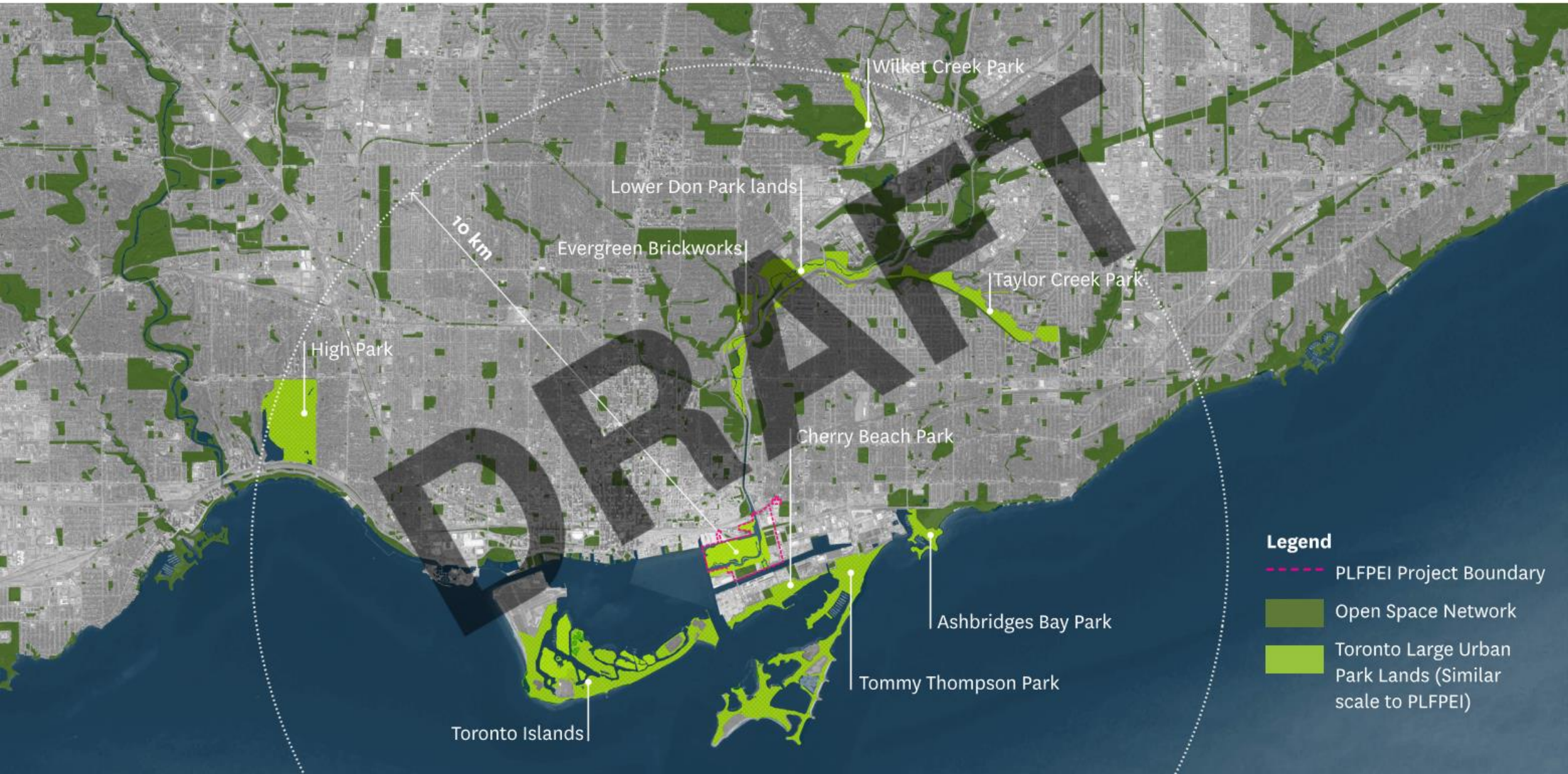


River Valley



Park

Toronto's Large Urban Parks

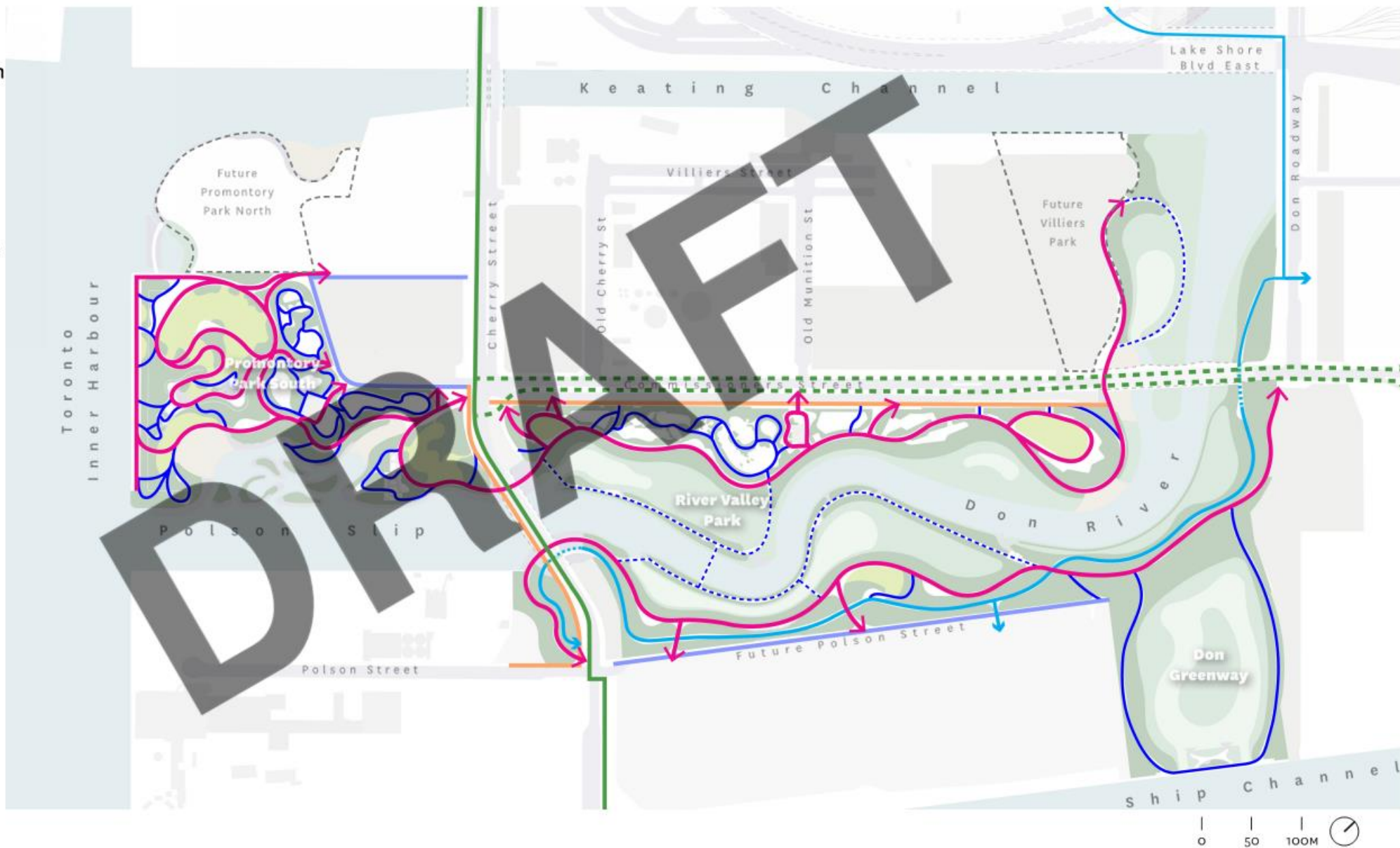


Framing a Comprehensive Vision



An Integrated Network of Paths and Trails

- Main Park Path: 4-6m
- Secondary Park Path: 2-3m
- Recreational Trails: 2.8m
- Lower Don Trail: 3.6m
- Commuter Bike Lane: 2m
- Martin Goodman Trail: 4m
- Interim Paths: 4m
- City Sidewalks: 3-5m



View Looking East in River Valley Park South from Lower Don Trail



Lower Don Trail



River Valley South Park Overlook

View Looking West from Picnic Area in River Valley Park North



Park Programming Types - 2024

- Play Areas
- Dogs Off Leash Area
- Overlook
- Picnic Terrace
- Urban Esplanade
- Plaza
- Event Lawn
- Passive Use Lawn
- Rocky Edge
- Submergent Marsh
- Emergent Marsh
- Vernal Pool
- Planted Armour Stone
- Wooded Upland
- Gravel Beach
- Canoe/Kayak Access
- Bird Watching
- Overlook
- Eco Education / Interpretation
- Fishing Node
- Nature Exploration
- Nature Trail
- Snowshoeing
- Cross Country Skiing



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Park Features

Orchestrating a Complete Ensemble

Promontory Park South

- Event Lawn & Plaza
- Harbour Esplanade
- Marine Terminal 35 Building Commemoration
- Promontory
- Atlas Crane Peninsula
- Entry Plaza
- Destination Play Area

River Valley Park North and South

- Commissioners Street Edge
- Nature Play Area
- Picnic Area
- Picnic Lawn
- Dog Off Leash Areas
- FH-30 Plaza
- Future Polson Street Edge
- Bike Bridges

Park Wide Features

- Gathering Areas
- Art
- Wayfinding and Signage
- Site Furnishings, Lighting and Materials
- Operations and Maintenance
- Planting

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Promontory Park South

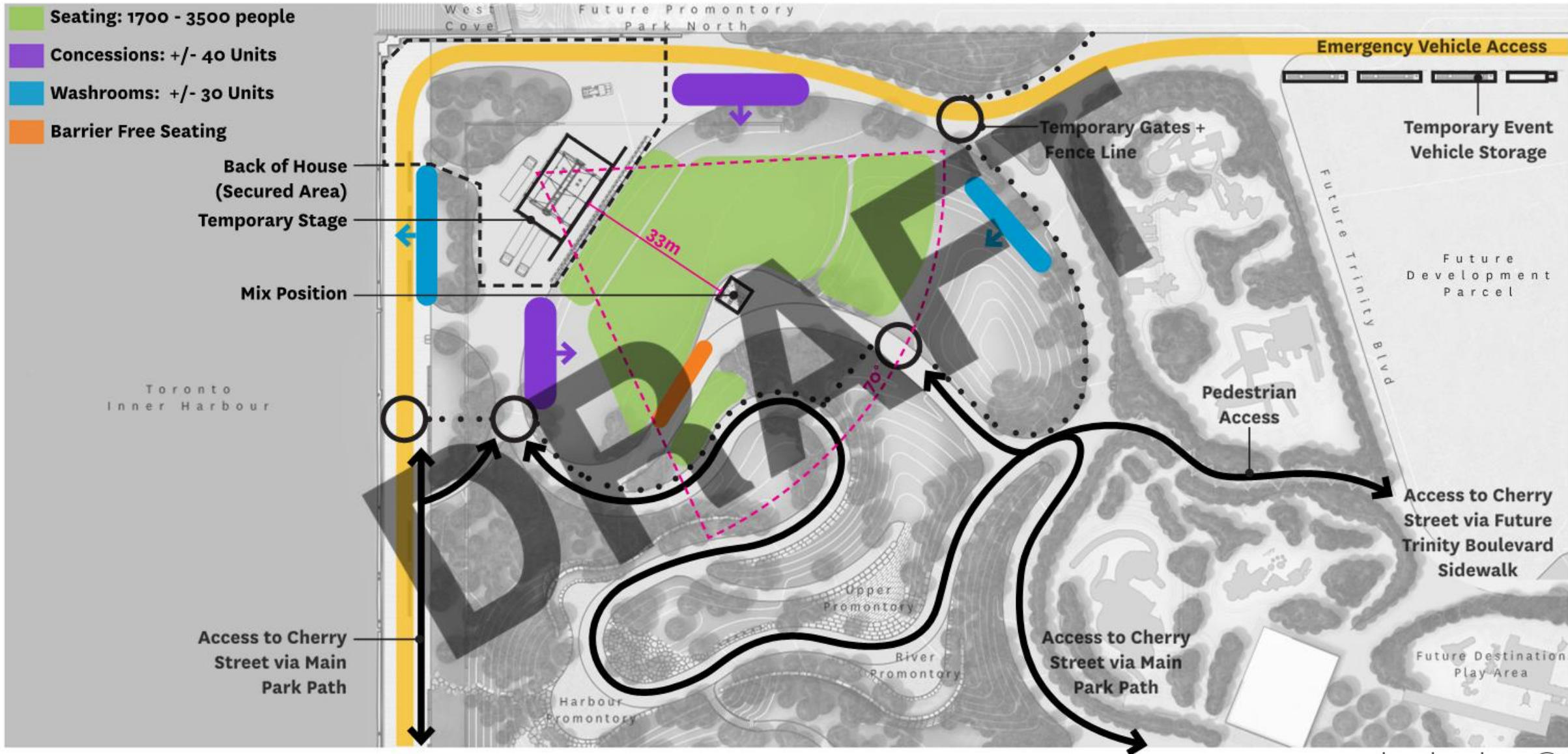
Event Lawn - Precedent



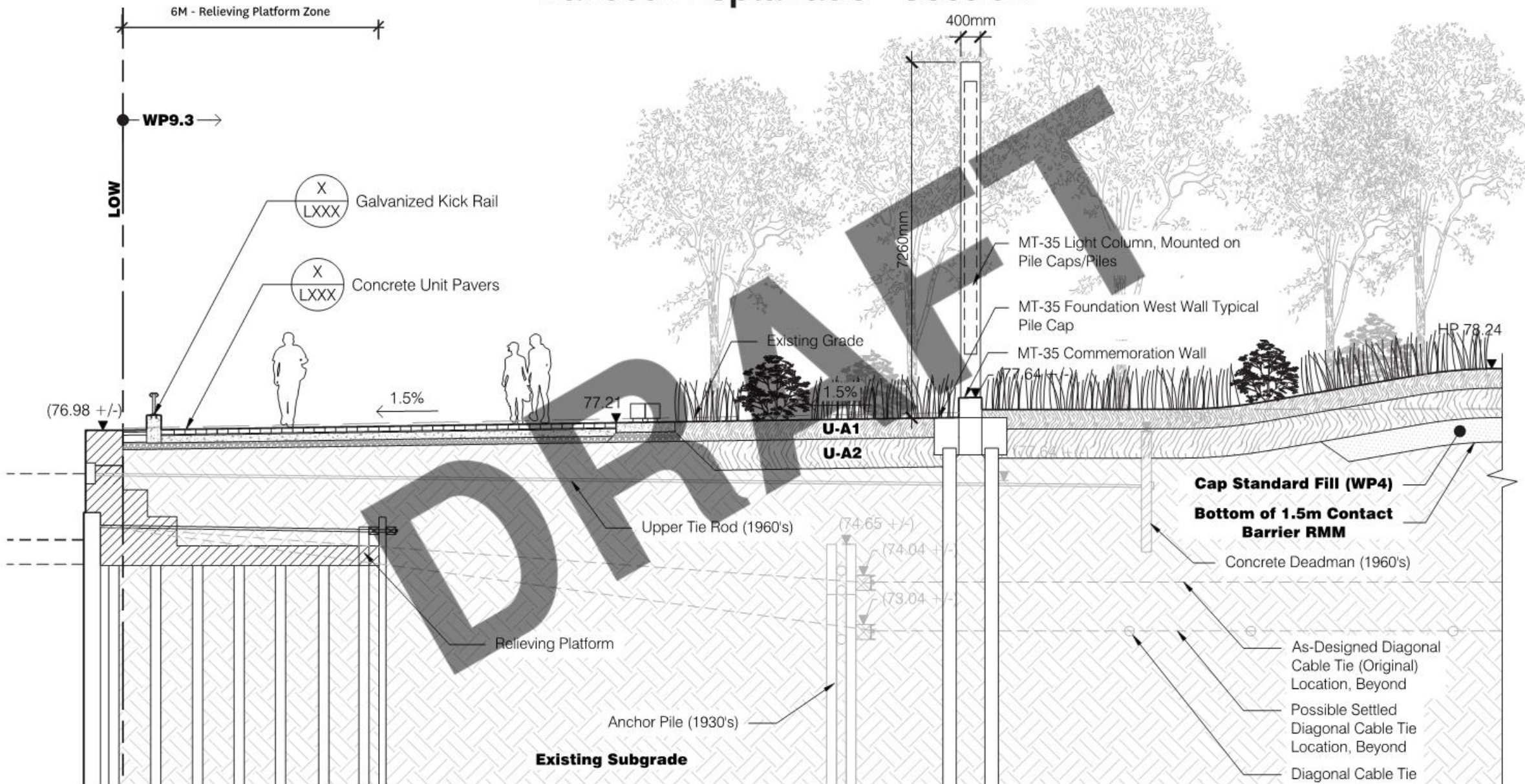
Event Lawn, Plaza and Esplanade - Enlargement Plan



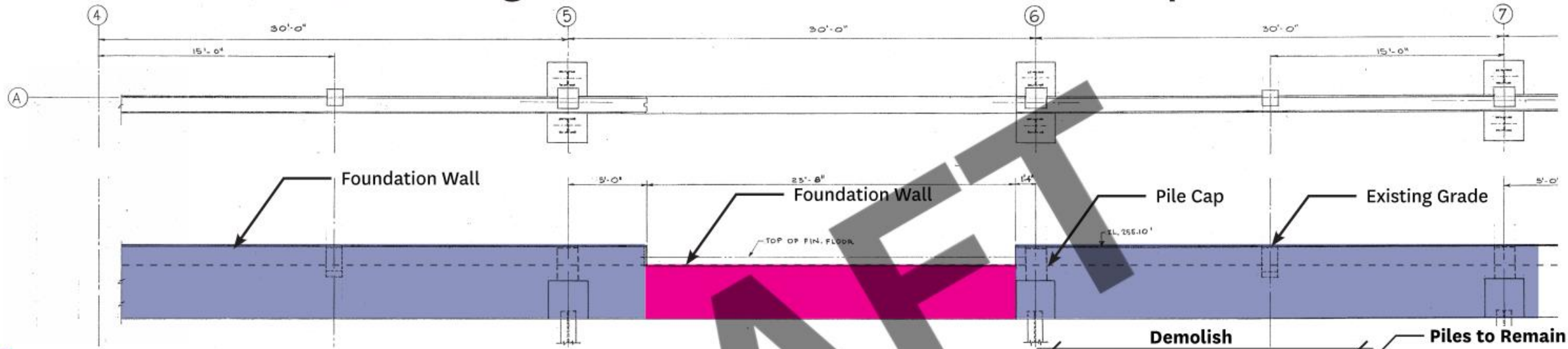
Event Lawn - Diagram



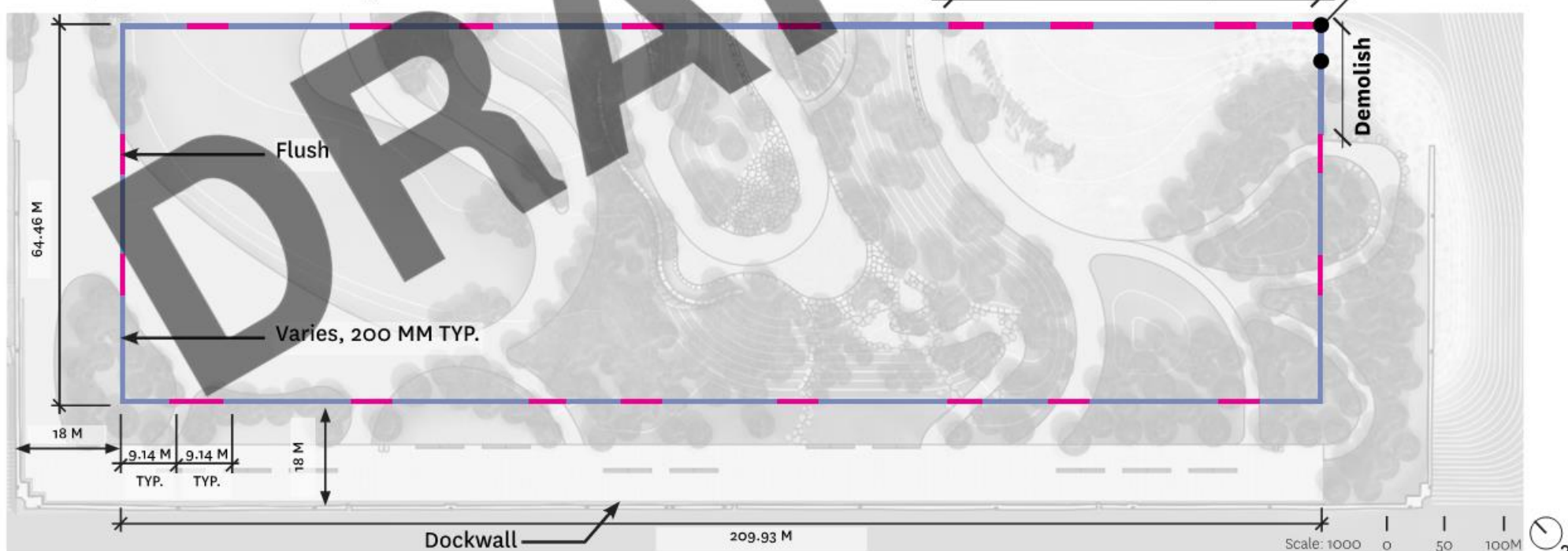
Harbour Esplanade - Section



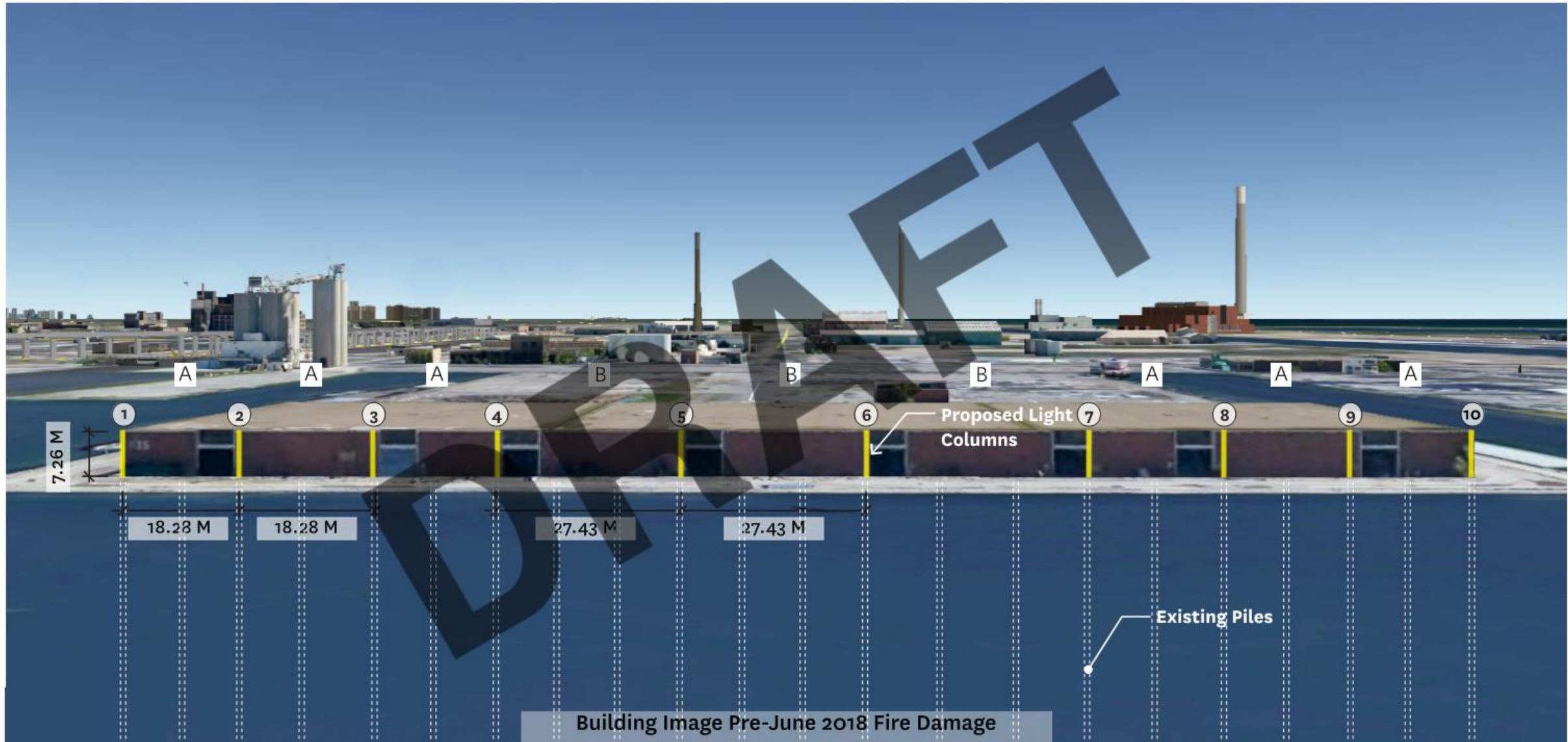
MT-35 Building Commemoration - Foundation Palimpsest



- Foundation Wall at Existing Grade - (Doorway)
- Foundation Wall Above Existing Grade - (Varies)
- Foundation Piles and Pile Caps to be Exposed



MT-35 Building Commemoration - Scale and Volume



View From Harbour Promenade Looking South Towards Toronto Islands



Promontory - Bird's Eye View



Promontory - Stone Types

Glacial Erratic



Rip-Rap



Salvaged Stone



Armour Stone

Block



Fractured



Promontory Walls - Material Concept



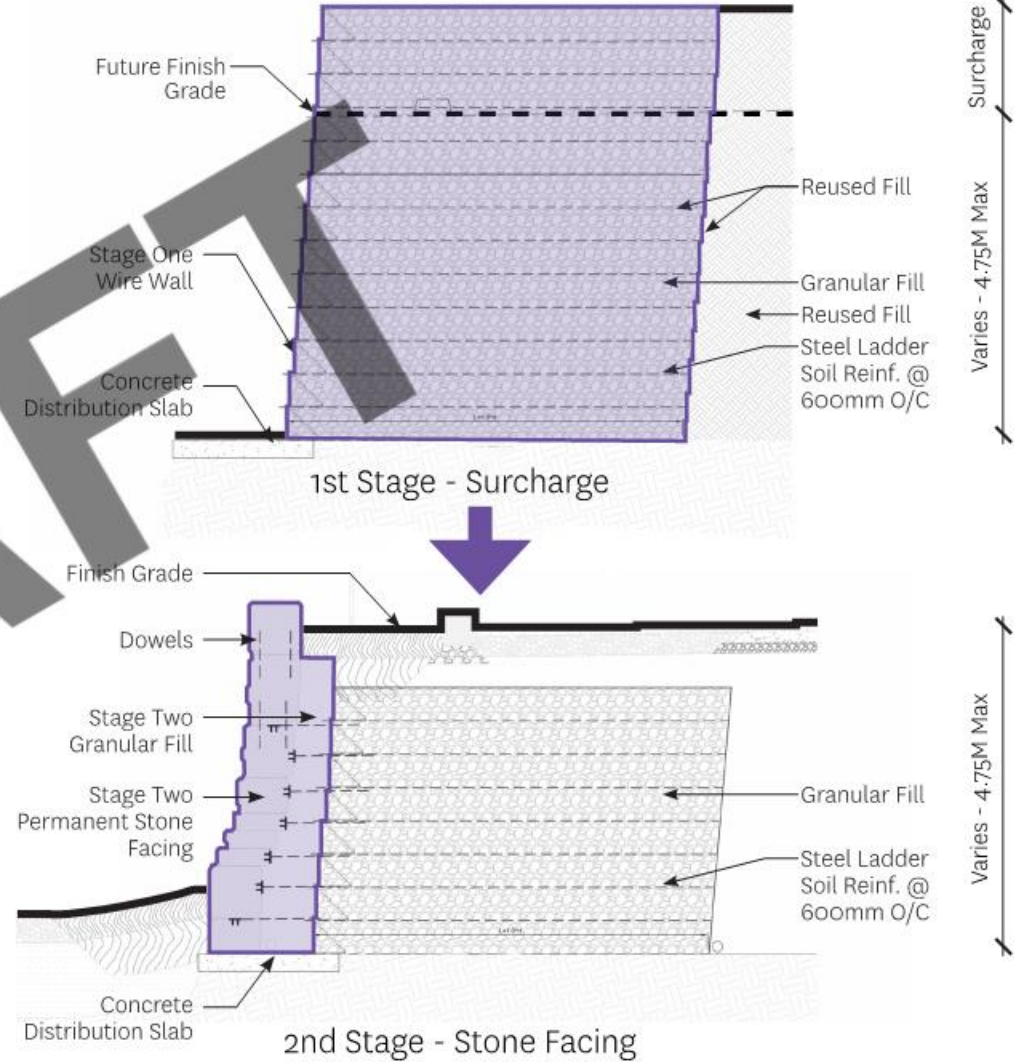
Bobcaygeon Formation

Gull River Formation

Shadow Lake (Sienna) Formation



Regional Stratigraphic Formations

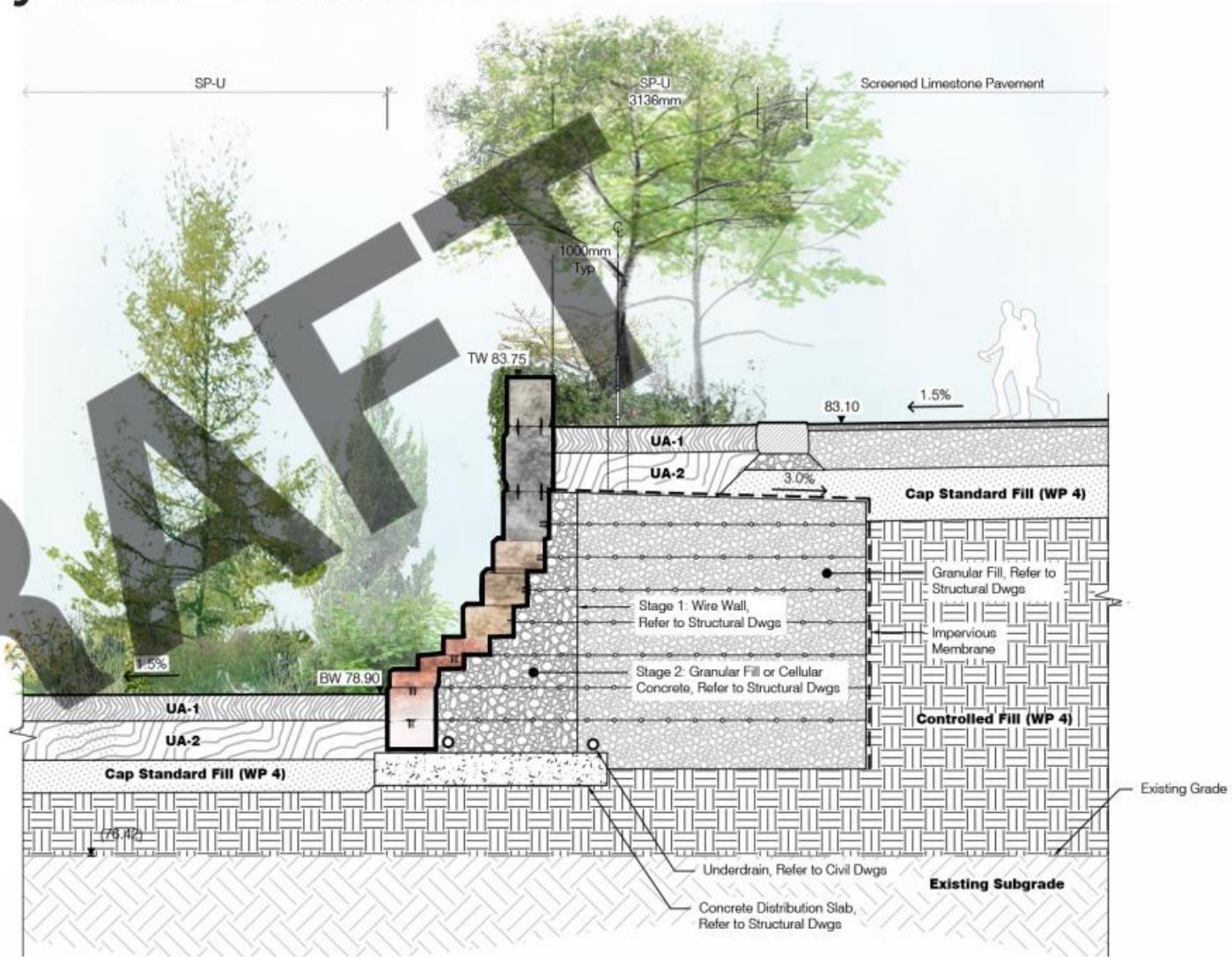


Mechanically Stabilized Earth (MSE) Wall

Promontory Walls - Detail Section



MSE Wall - Waller Creek, Austin, TX



2nd Stage - Stone Facing



East Promontory Wall - Unfolded Elevation



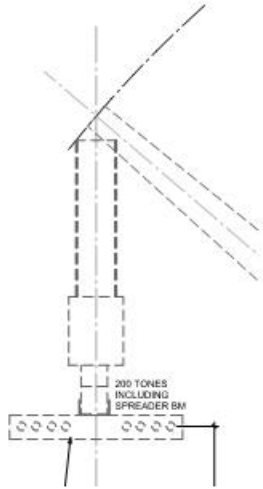
Atlas Crane Peninsula - Enlargement Plan



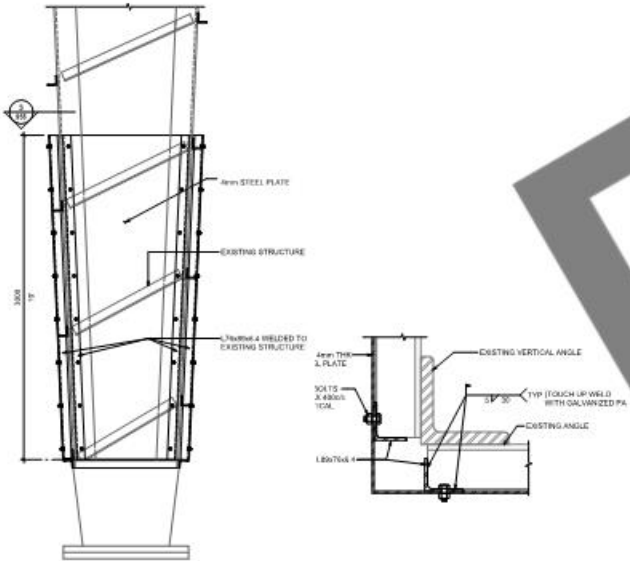
P o l s o n S l i p



Atlas Crane - Section Detail



Spreader Beam To Be Dismantled and Relocated Under the Crane



Steel Tie Beams Stabilize Crane Arm

Cables to be Secured

Spreader Beam to be Salvaged

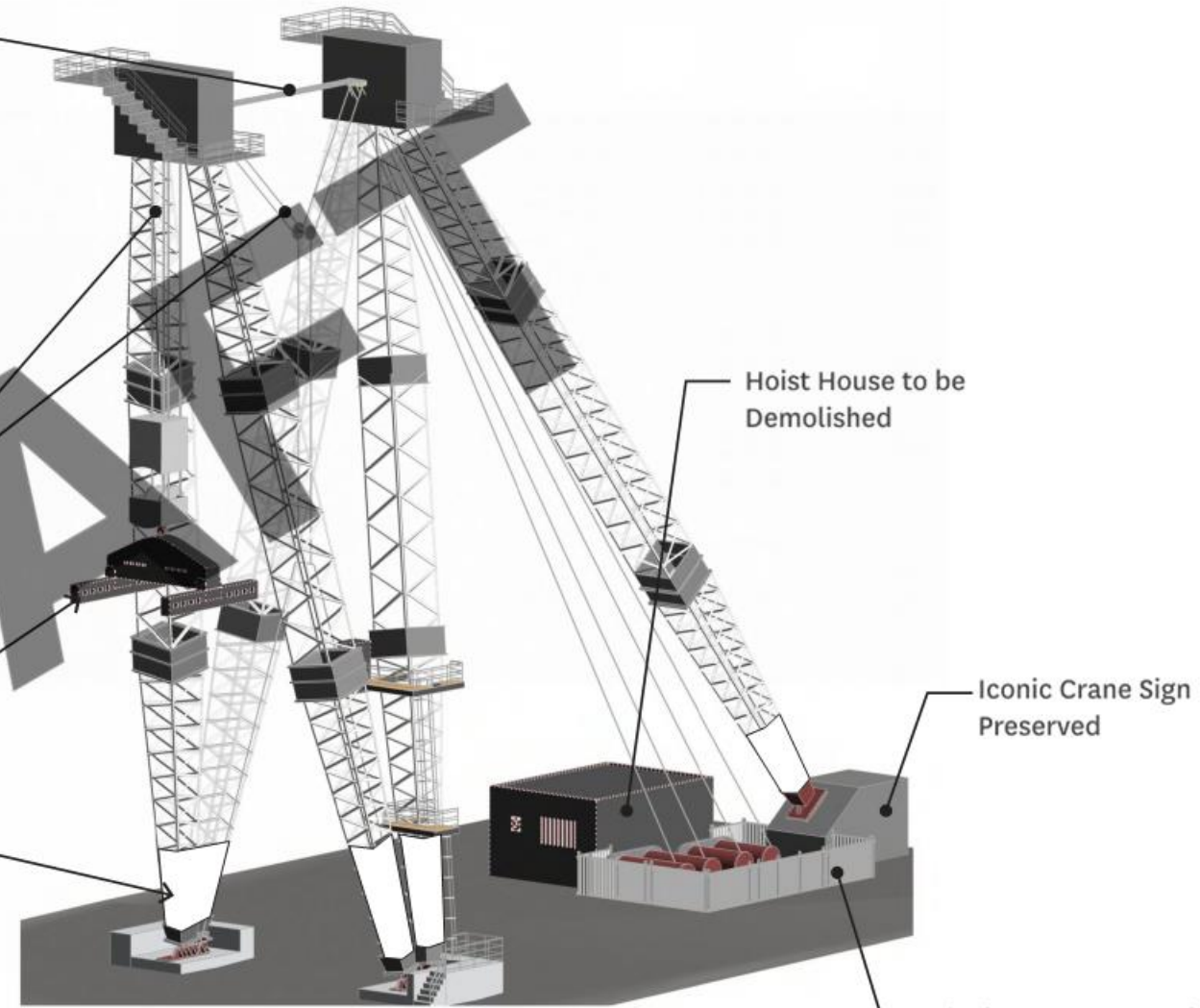
Steel Plate Enclosure

Hoist House to be Demolished

Iconic Crane Sign Preserved

Winch Drums Secured & Protected Behind Fencing

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Park Entrances at Cherry Street - Enlargement Plan



Aspirations for Destination Play Area



Gathering Space, Tulsa OK

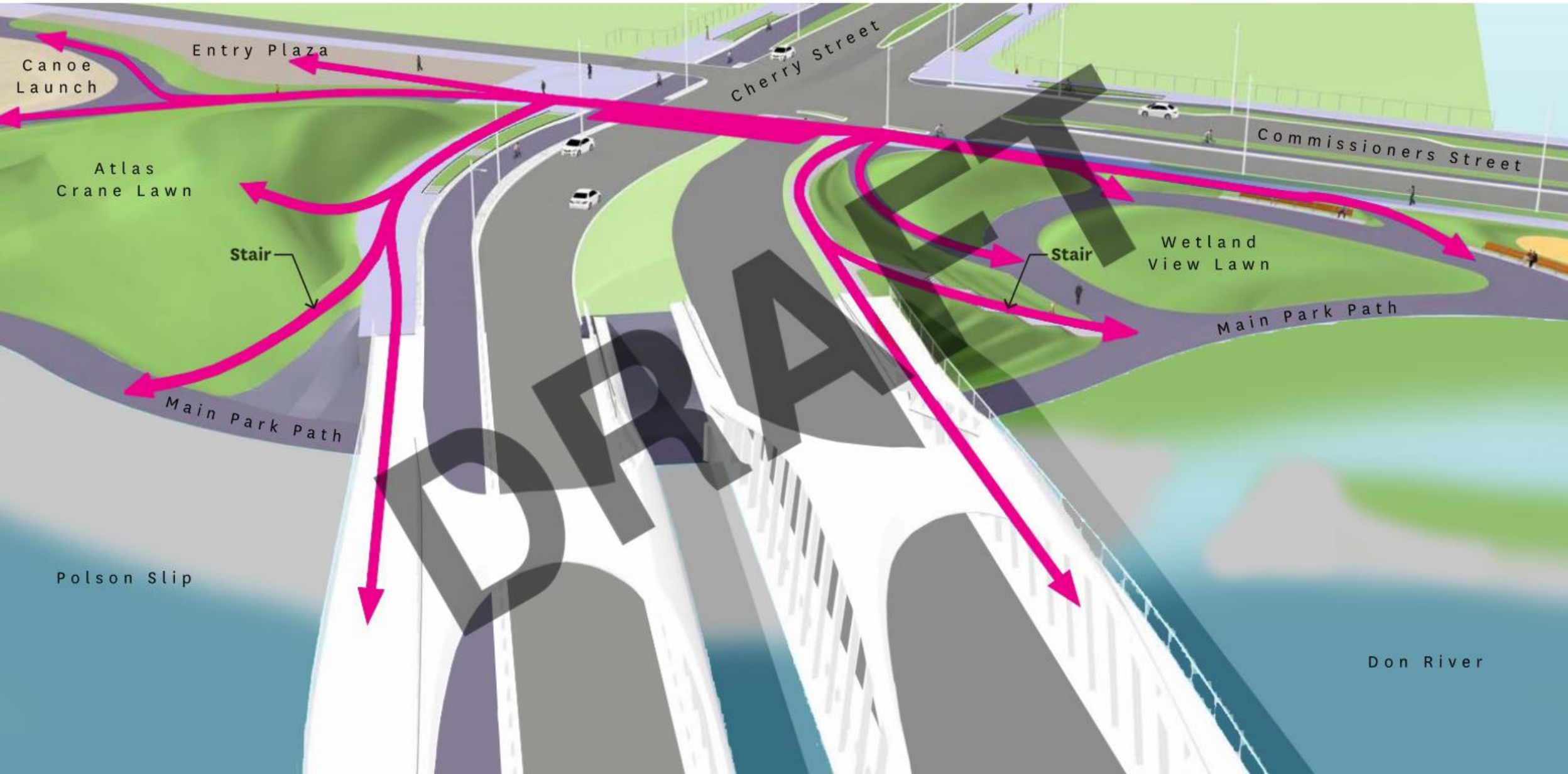
View from Trinity Boulevard Looking West to Future Destination Play Area



River Valley Park North and South

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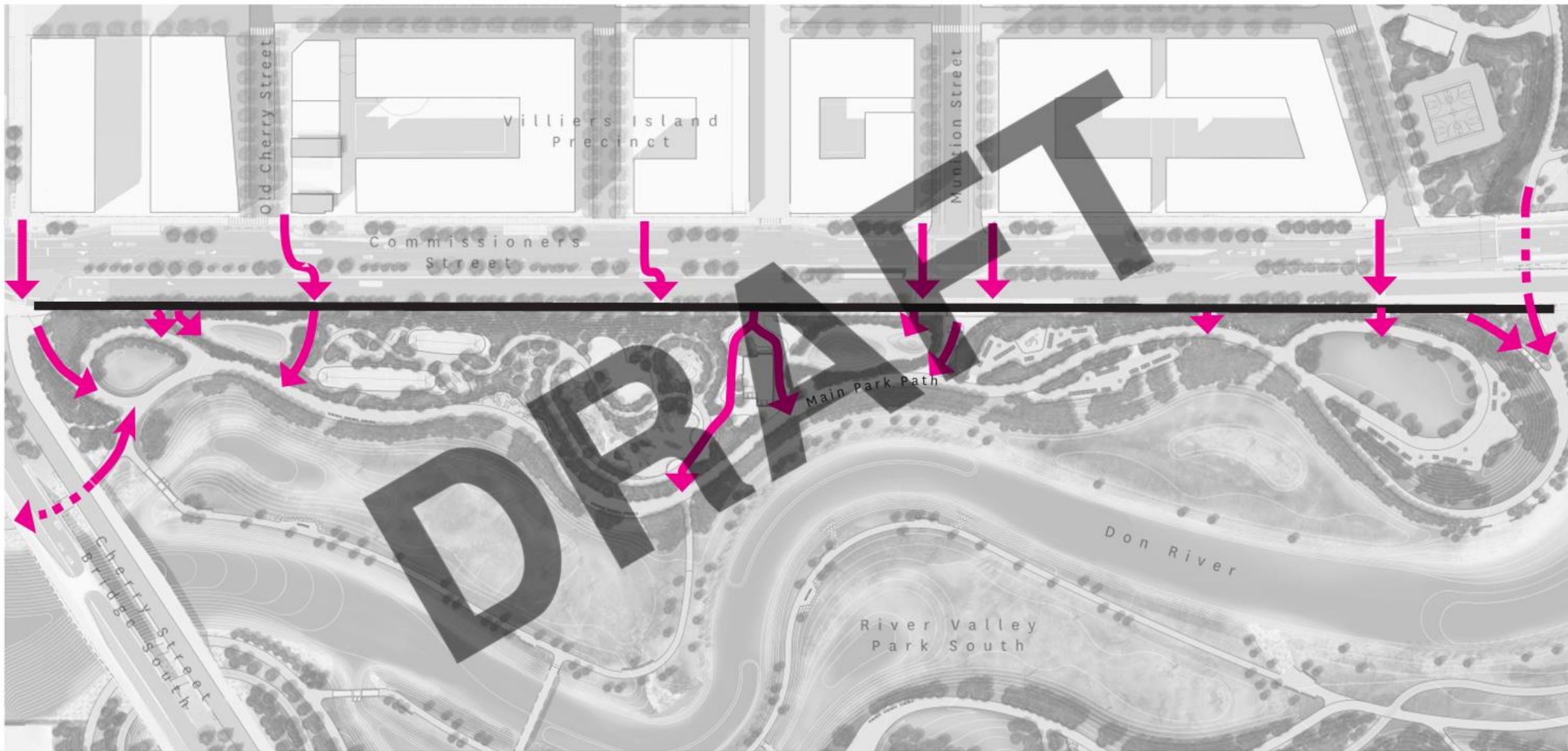
Connections and Porosity to the Urban Context



View From Cherry Street Entrance Looking Southeast into River Valley Park North



Porosity at Commissioners Street Edge



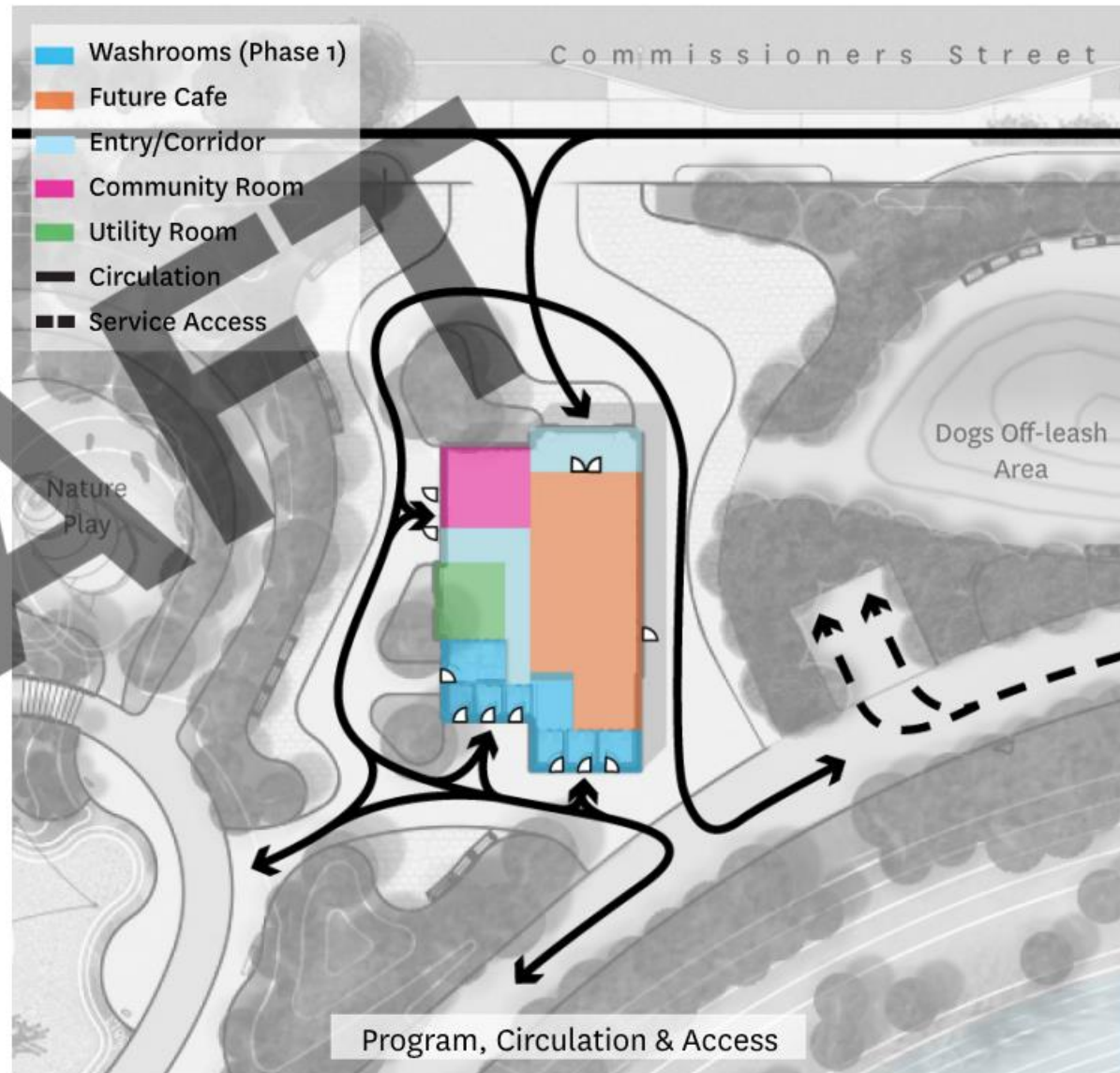
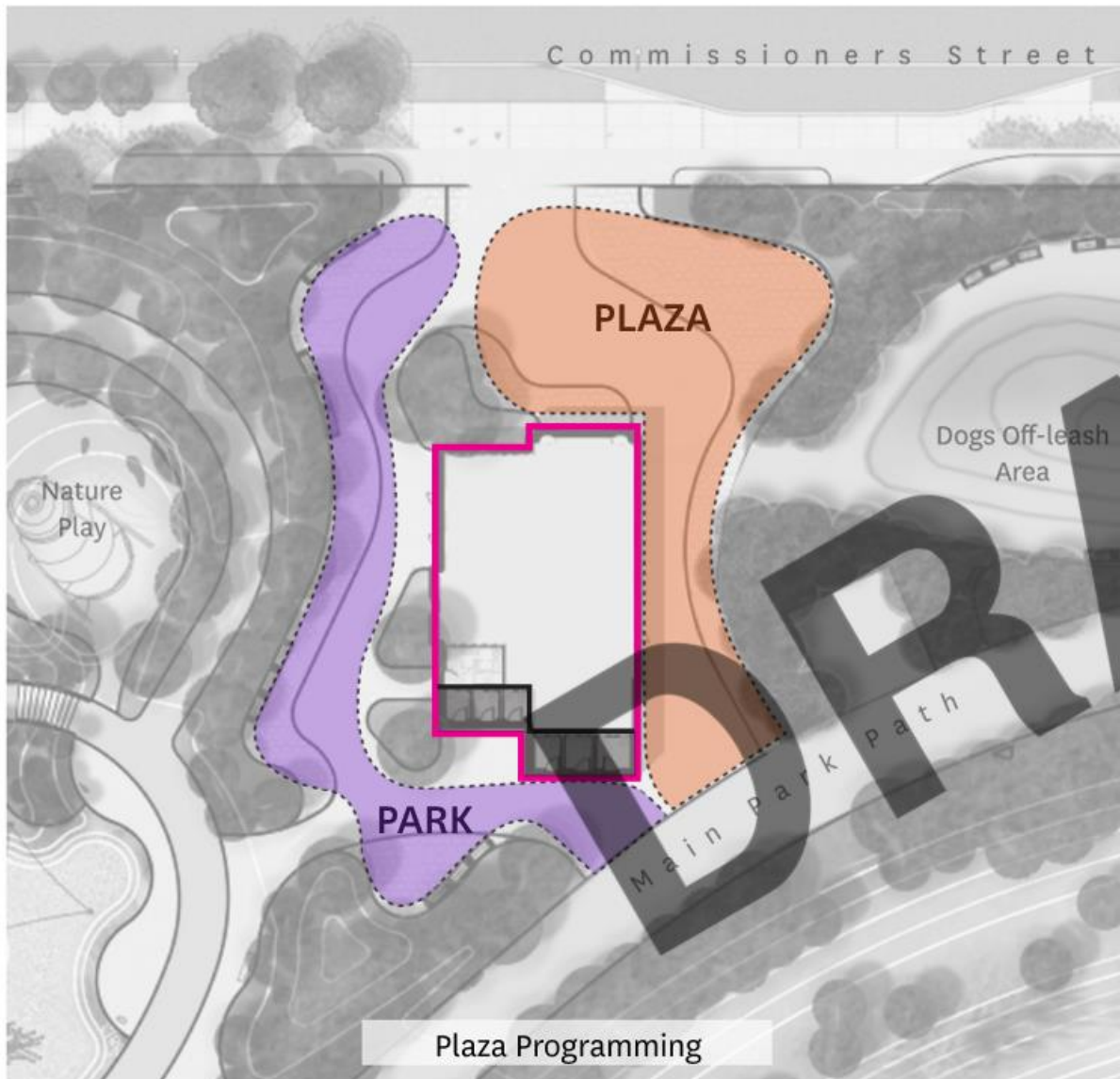
Full Vision



Repositioning the Fire Hall 30 as a Park Amenity



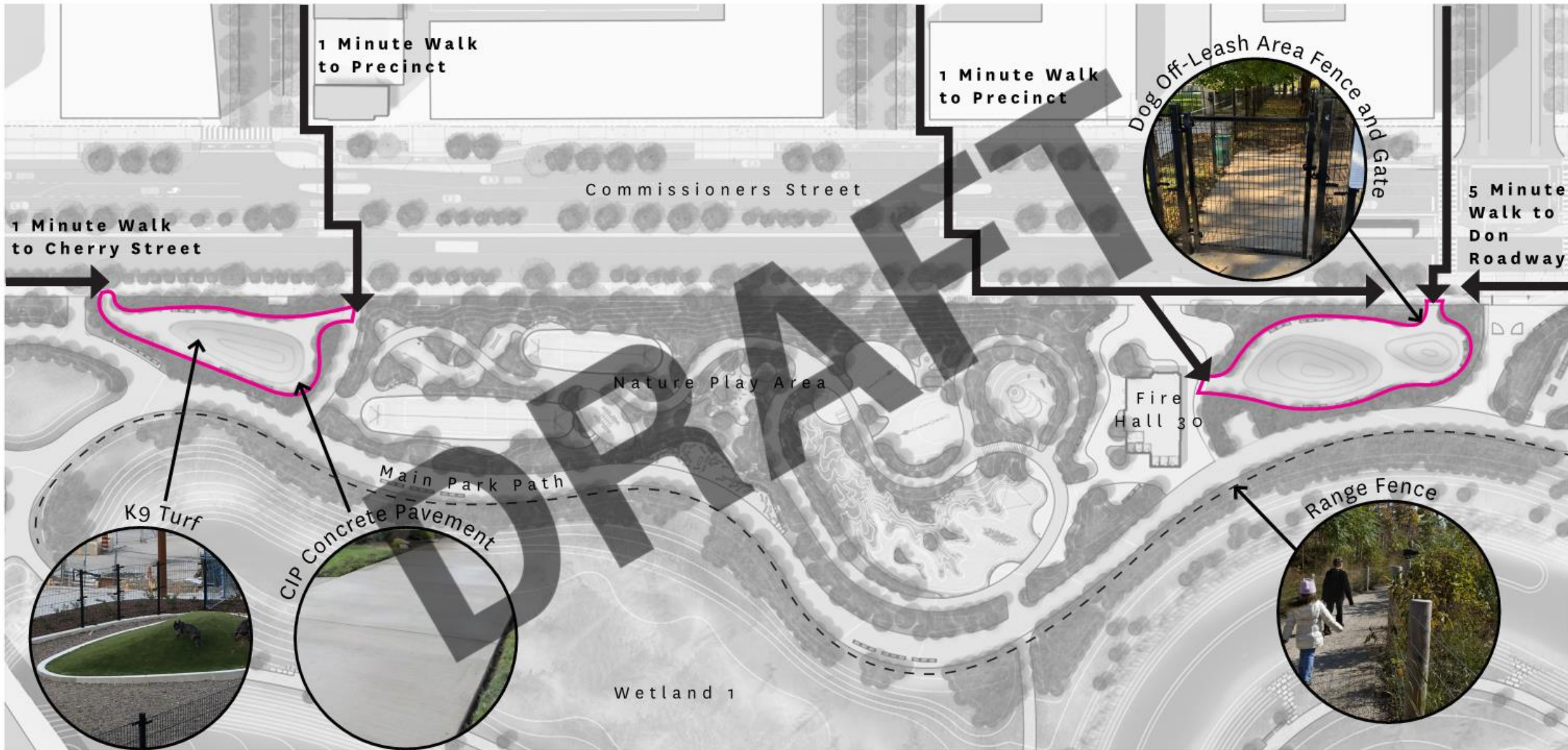
Fire Hall 30 Entry Plaza - Diagram



View from Commissioners Street Looking Southeast to Fire Hall 30 Plaza

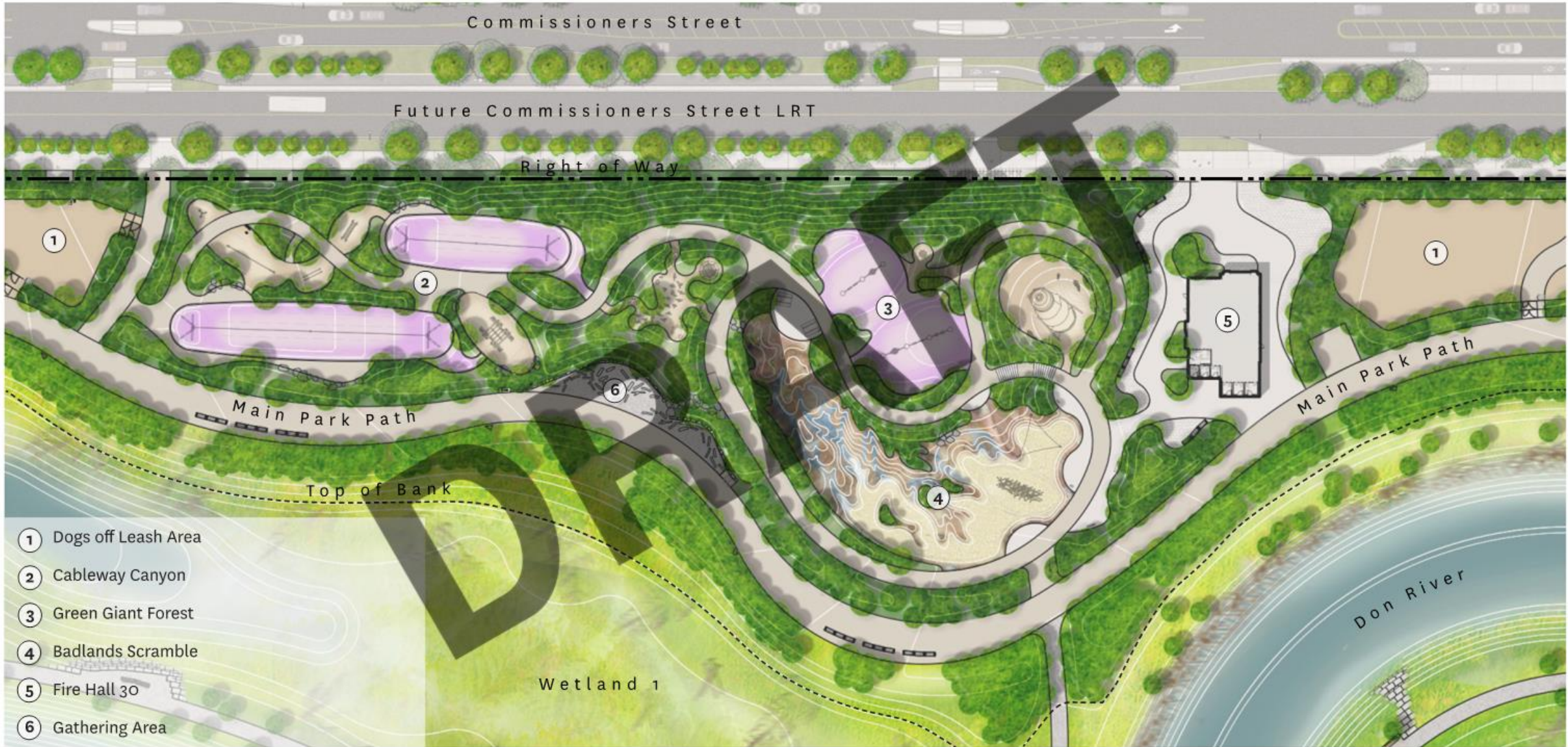


Proximity of Dogs Off-Leash Area to Future Neighbourhood



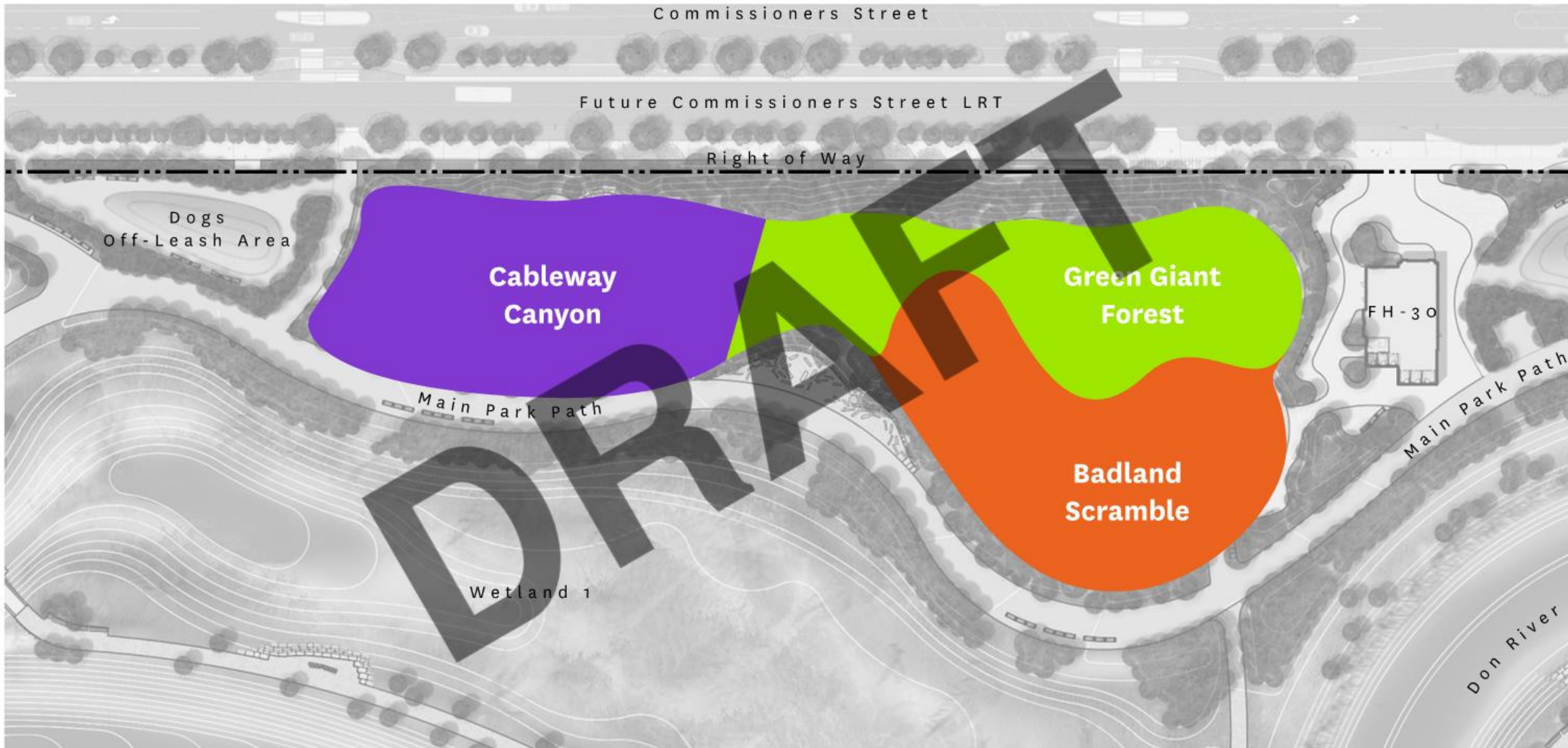
Full Vision

Nature Play Area - Plan

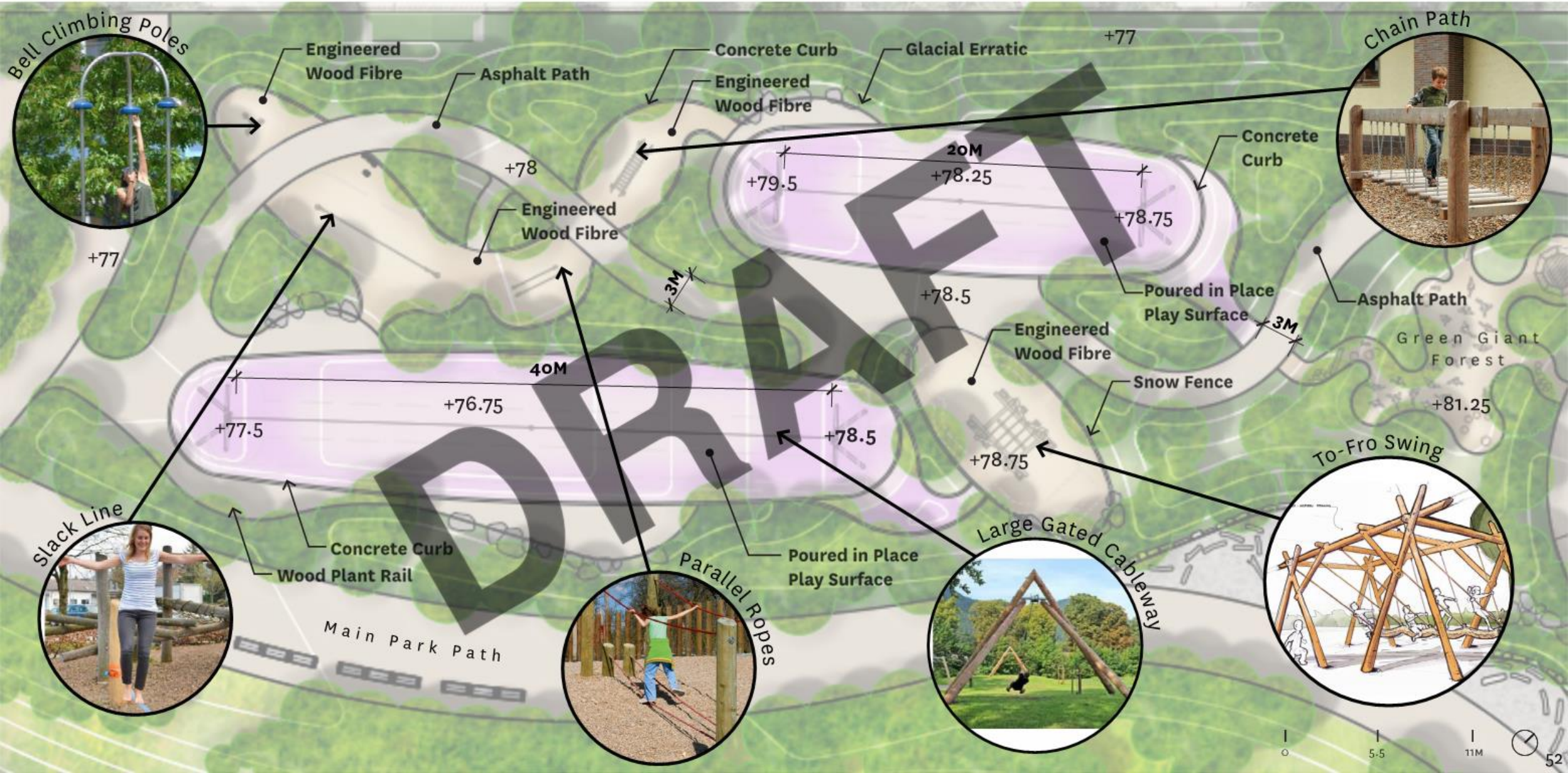


- ① Dogs off Leash Area
- ② Cableway Canyon
- ③ Green Giant Forest
- ④ Badlands Scramble
- ⑤ Fire Hall 30
- ⑥ Gathering Area

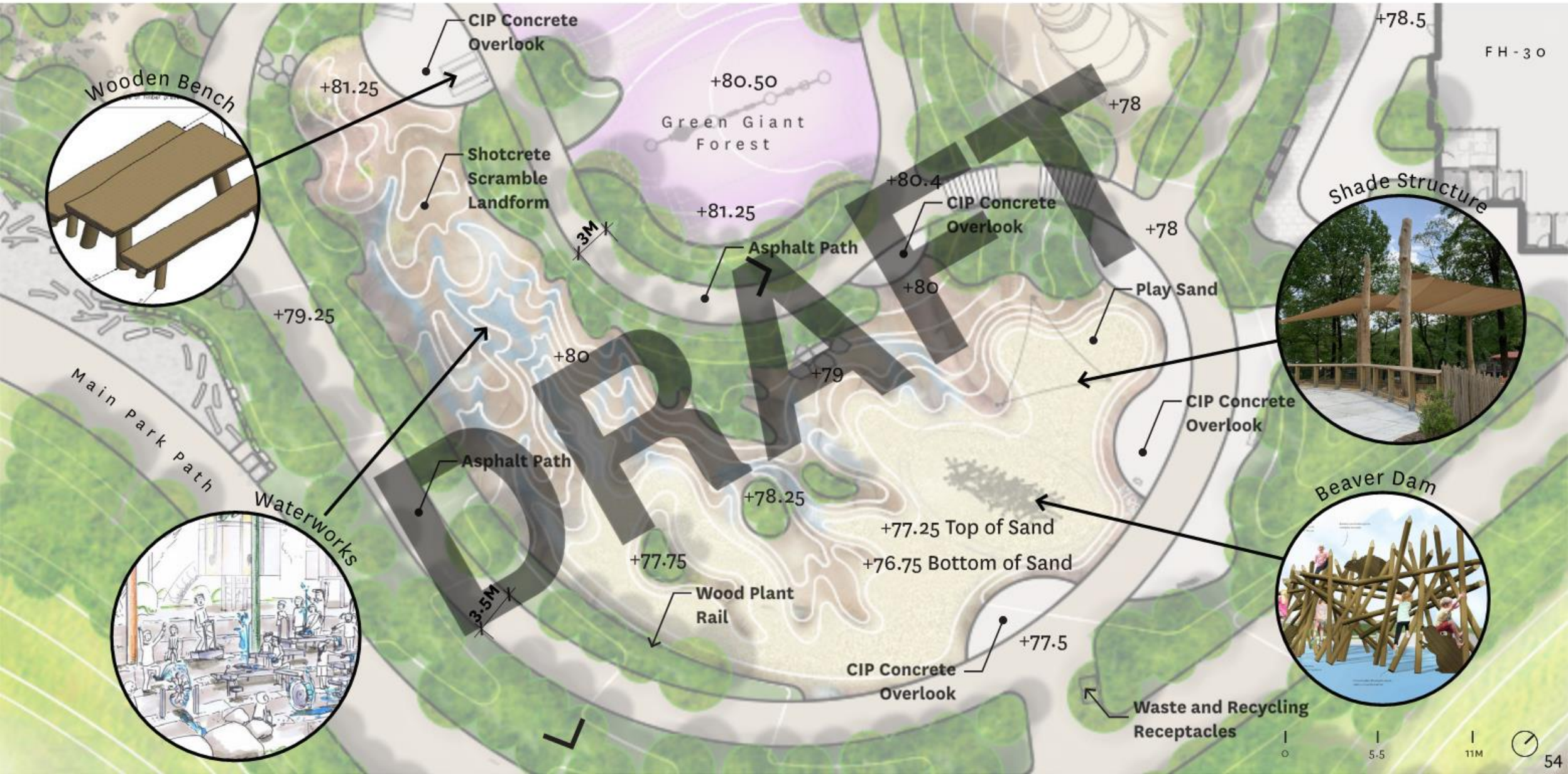
Nature Play Area Garden Room - Diagram



Cableway Canyon - Enlargement Plan



Badland Scramble - Enlargement Plan



FH-30

+78.5

+80.50

Green Giant Forest

+78

Wooden Bench

+81.25

CIP Concrete Overlook

Shotcrete Scramble Landform

+81.25

3M

Asphalt Path

CIP Concrete Overlook

+80.4

+78

Play Sand

Shade Structure

+79.25

Main Park Path

+80

+79

Asphalt Path

+78.25

CIP Concrete Overlook

Waterworks

3.5M

Wood Plant Rail

+77.25 Top of Sand

+76.75 Bottom of Sand

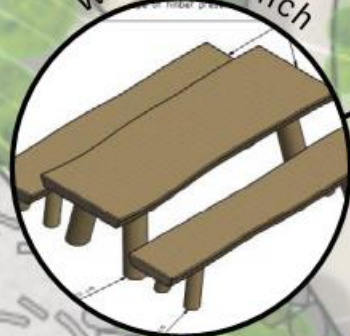
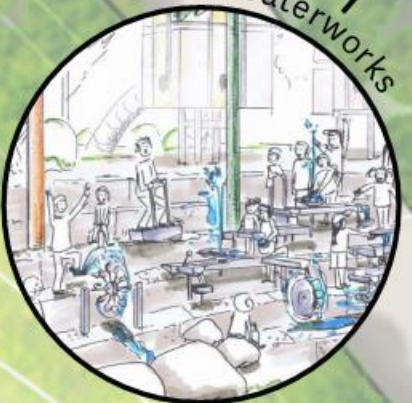
Beaver Dam

+77.75

+77.5

CIP Concrete Overlook

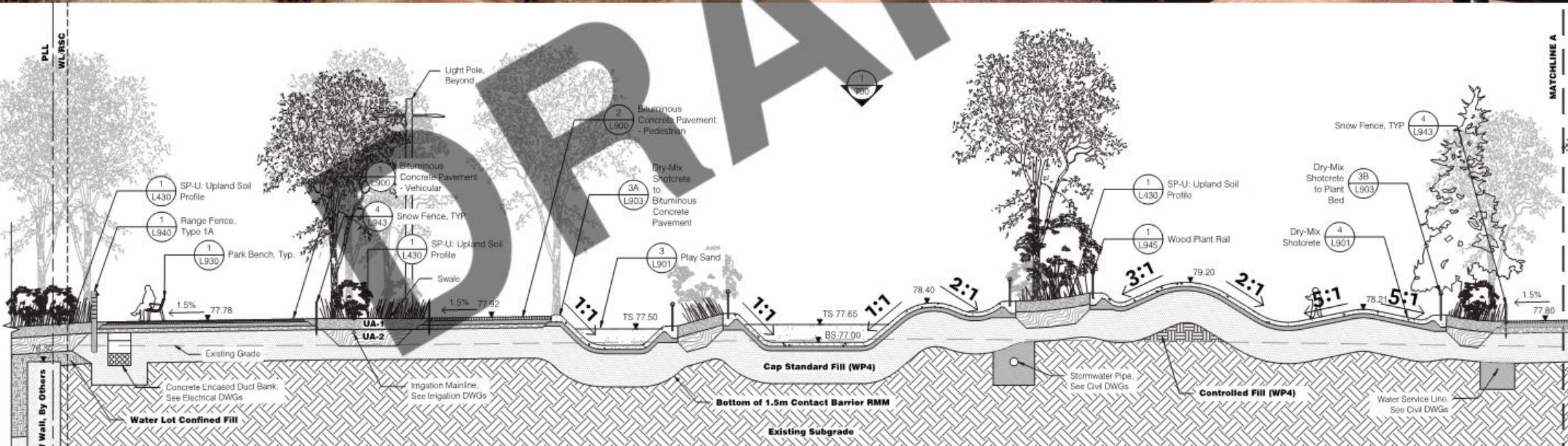
Waste and Recycling Receptacles



Badland Scramble - Details



Geologic Formation Precedent - Cheltenham Badlands, ON



Picnic Terraces and Picnic Lawn - Plan



Picnic Terrace - Enlargement Plan

Future Commissioners Street LRT

Commissioners Street Sidewalk

Right of Way

Entry Gate (PFR and Emergency Access Only.)

Concrete Curb

Poured in Place Play Surface

Screened Limestone Pavement

Asphalt Path

Munitions St. Entry

CIP Concrete Pavement

AODA Picnic Table

Reaching Raccoon

+78.75

CIP Concrete Pavement

Range Fence - Type 1A

Top of Bank

+80

+79.25

CIP Concrete Pavement

+79

Screened Limestone Pavement

Waste/Recycling Receptacles

Bike Racks



CIP Concrete Pavement

Main Park Path

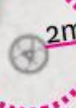
CIP Concrete Pavement

AODA Picnic Table

BBQ Grill

+79.50

Picnic Table



0 7.5 15M

Porosity at Future Polson Street Edge



River Valley
Park

Don River

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Cherry Street

Main Park Path

Lower Don Trail

Future Polson Street

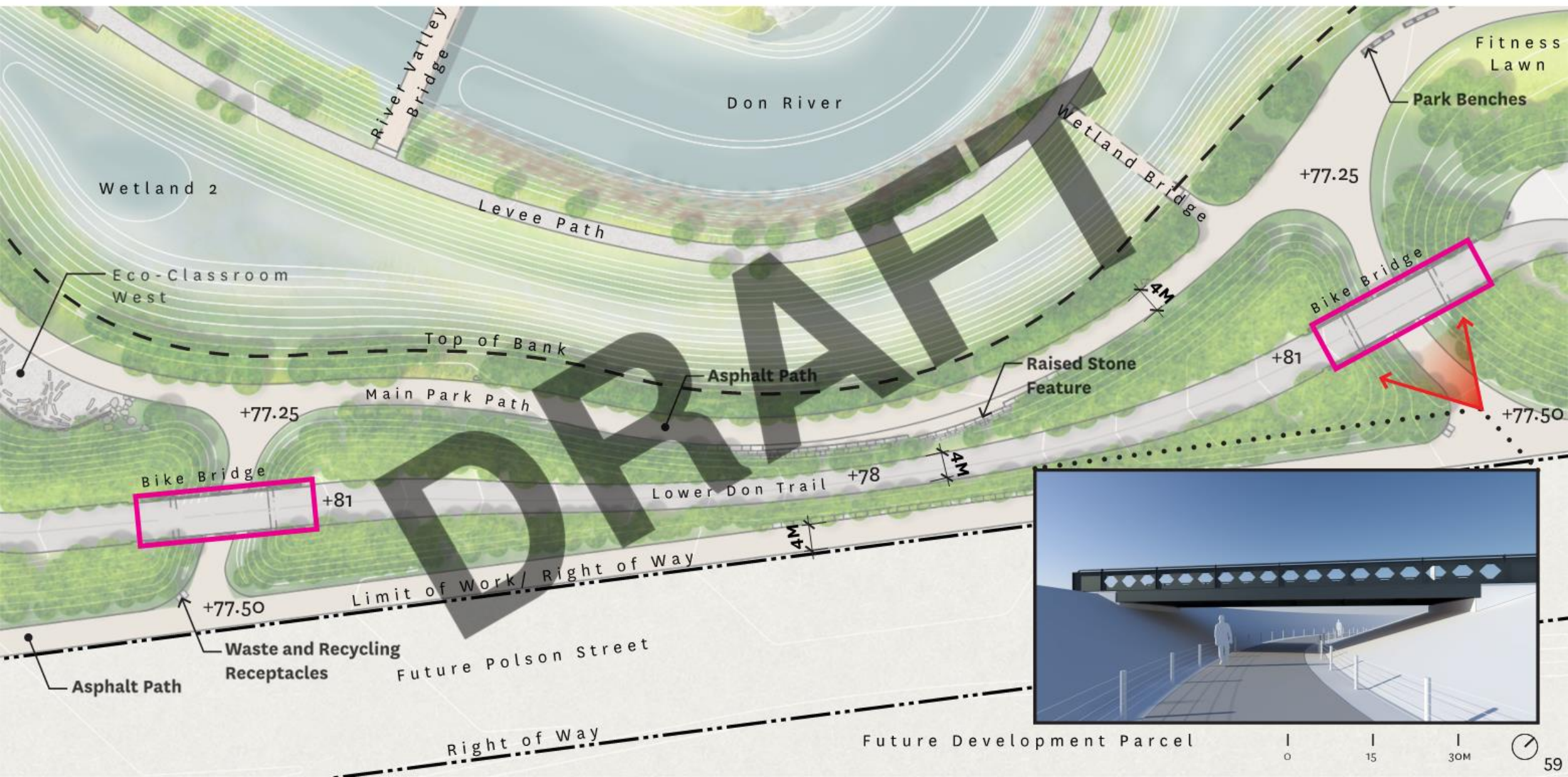
South River
Precinct

Full Vision

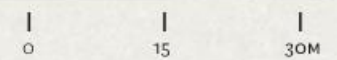
0 20 40M

58

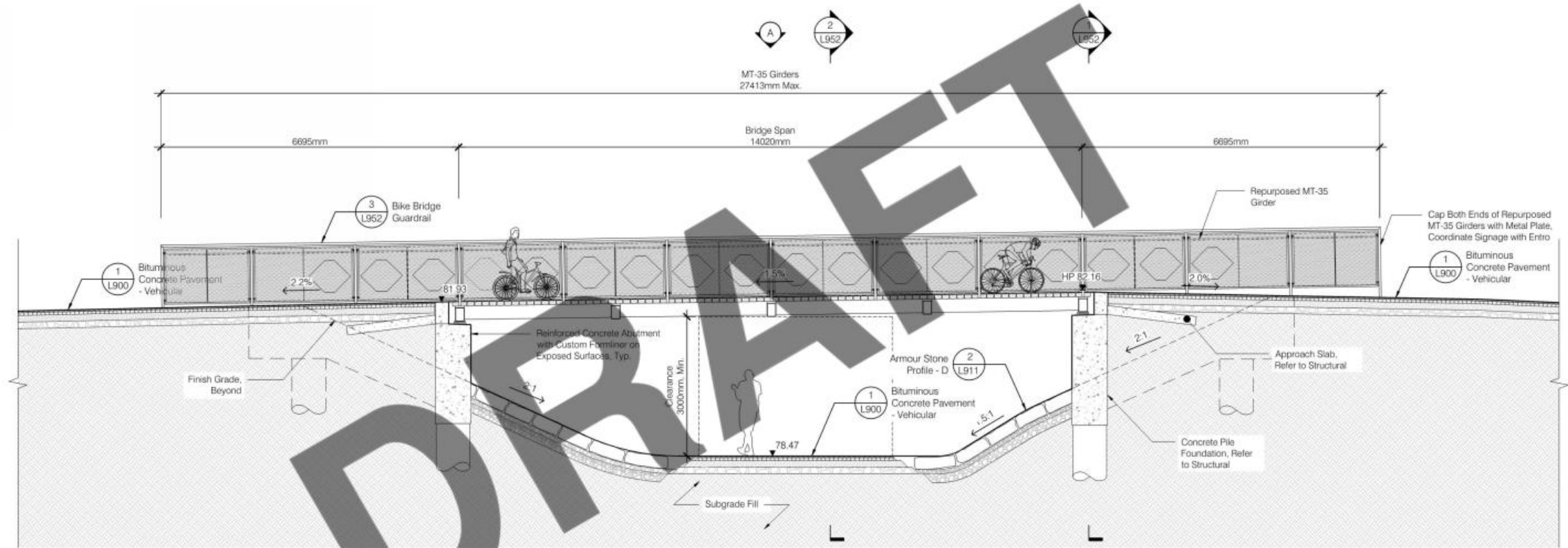
River Valley Park South Main Entrances - Enlargement Plan



Future Development Parcel



Bike Bridge - Details



Ⓑ Section Elevation - Longitudinal



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Park-Wide Components

Gathering Spaces - Material Concept



Gathering Spaces - Overall Diagram



① Harbour Promontory

② River Promontory

③ Canoe Cove Fire Pit

④ Canoe Cove Overlook

⑤ Atlas Crane Overlook

⑥ RVPN Eco-Classroom

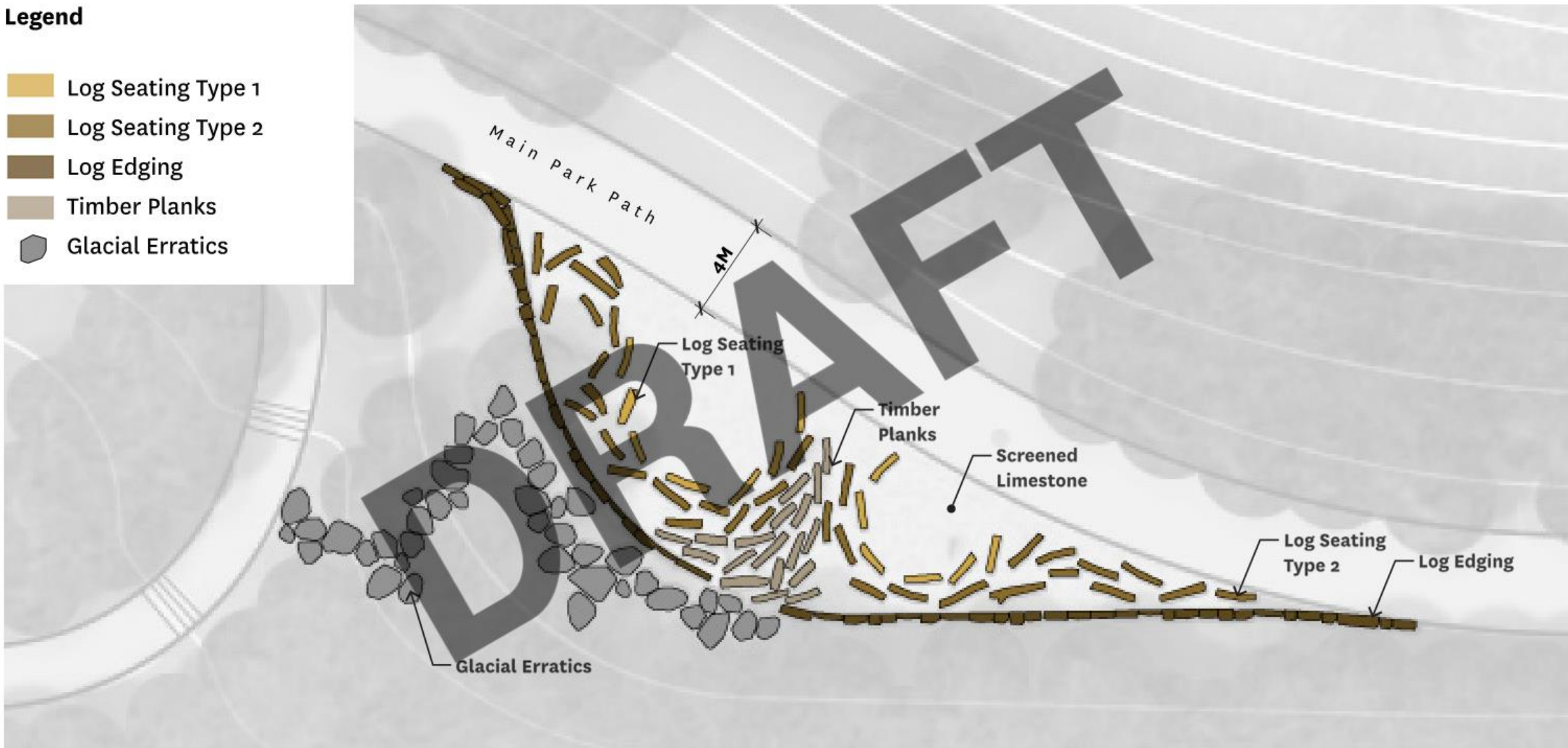
⑦ RVPS Eco-Classroom West

⑧ RVPS Eco-Classroom East

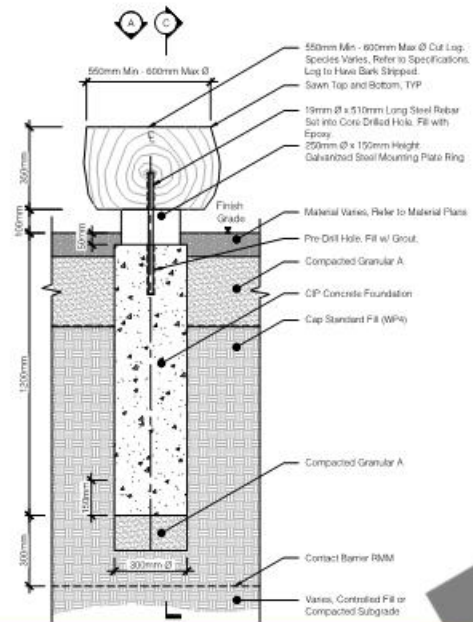
Gathering Spaces - Enlargement Diagram

Legend

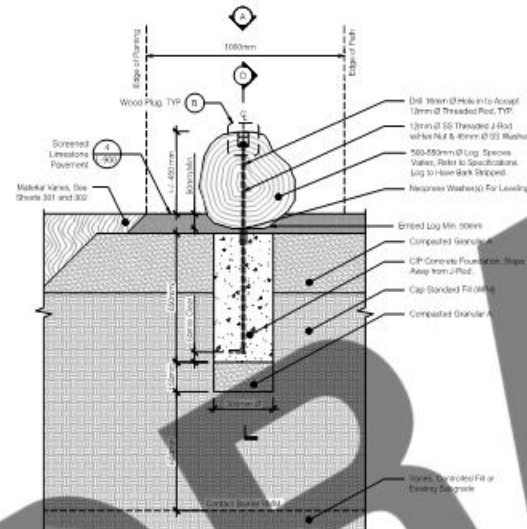
- Log Seating Type 1
- Log Seating Type 2
- Log Edging
- Timber Planks
- Glacial Erratics



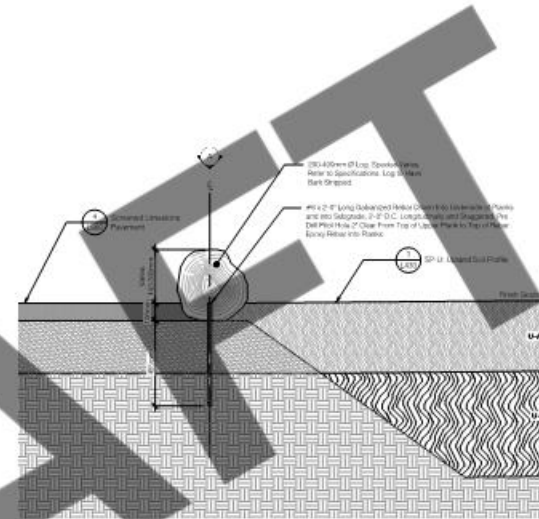
Gathering Space Seating - Details



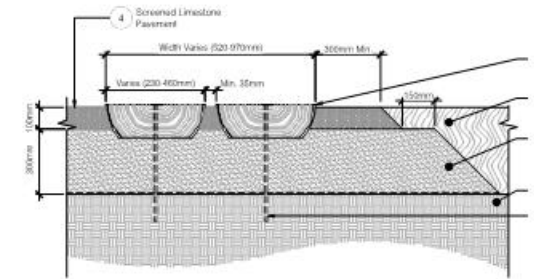
Log Seating Type 1



Log Seating Type 2



Log Edging



Timber Planks

Art Trail - Aspirations



Ephemeral Art by Andy Goldsworthy

Art Trail Strategy - Diagram

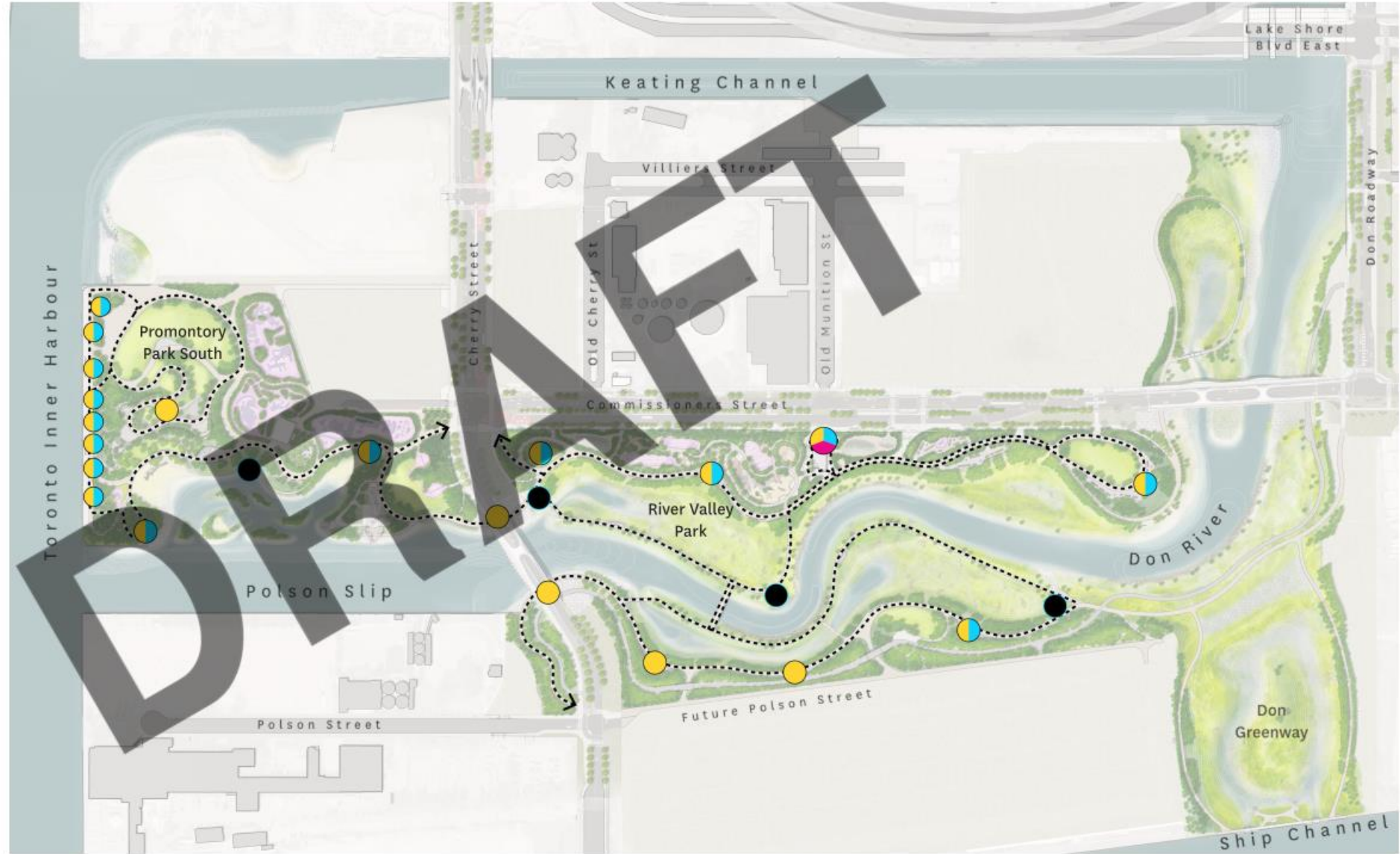
- Temporary Art - Serviced
- Temporary Art - Not Serviced
- Permanent Art - Serviced
- Art Walk

Note:
Ephemeral art that does not require infrastructure can occur throughout park and floodplain.

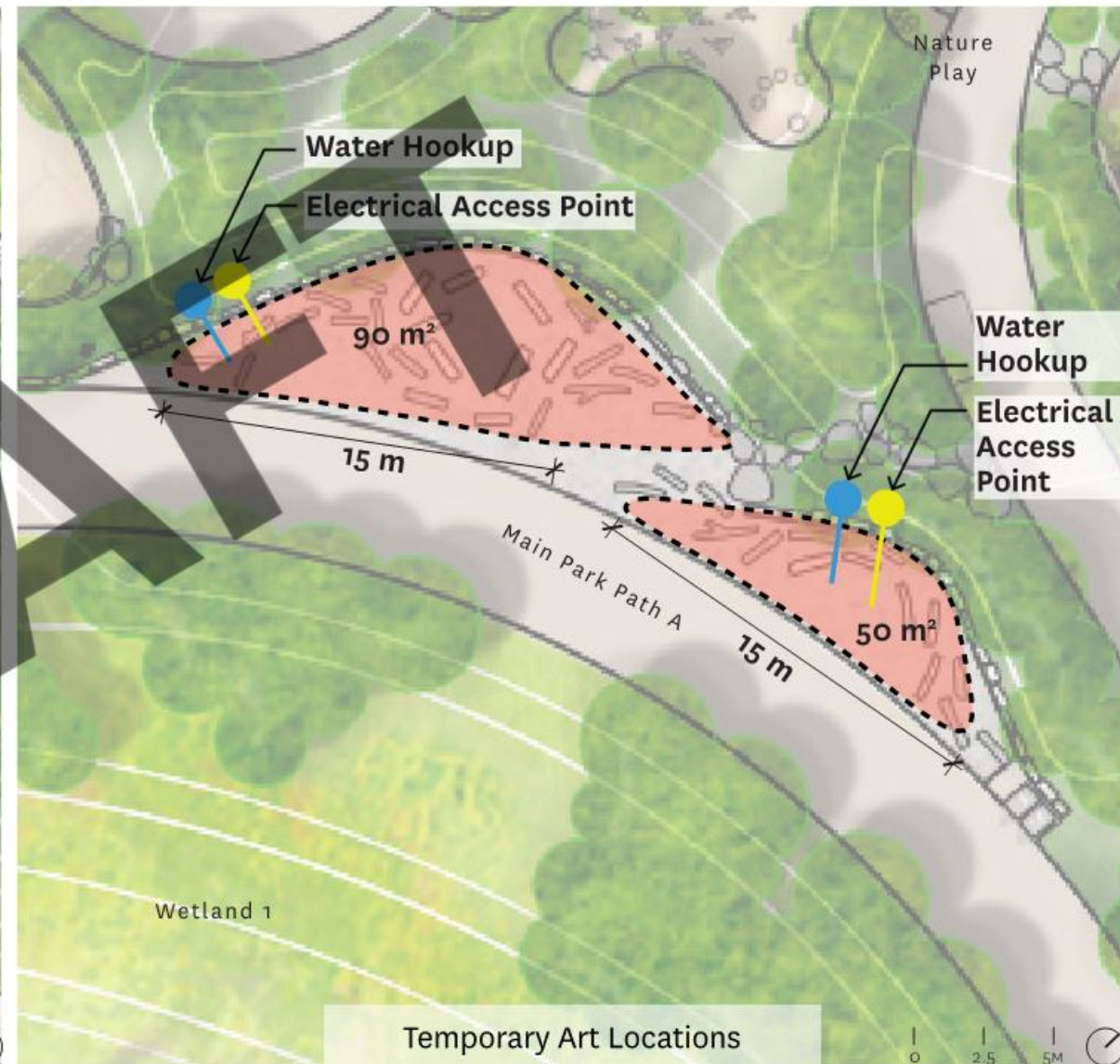
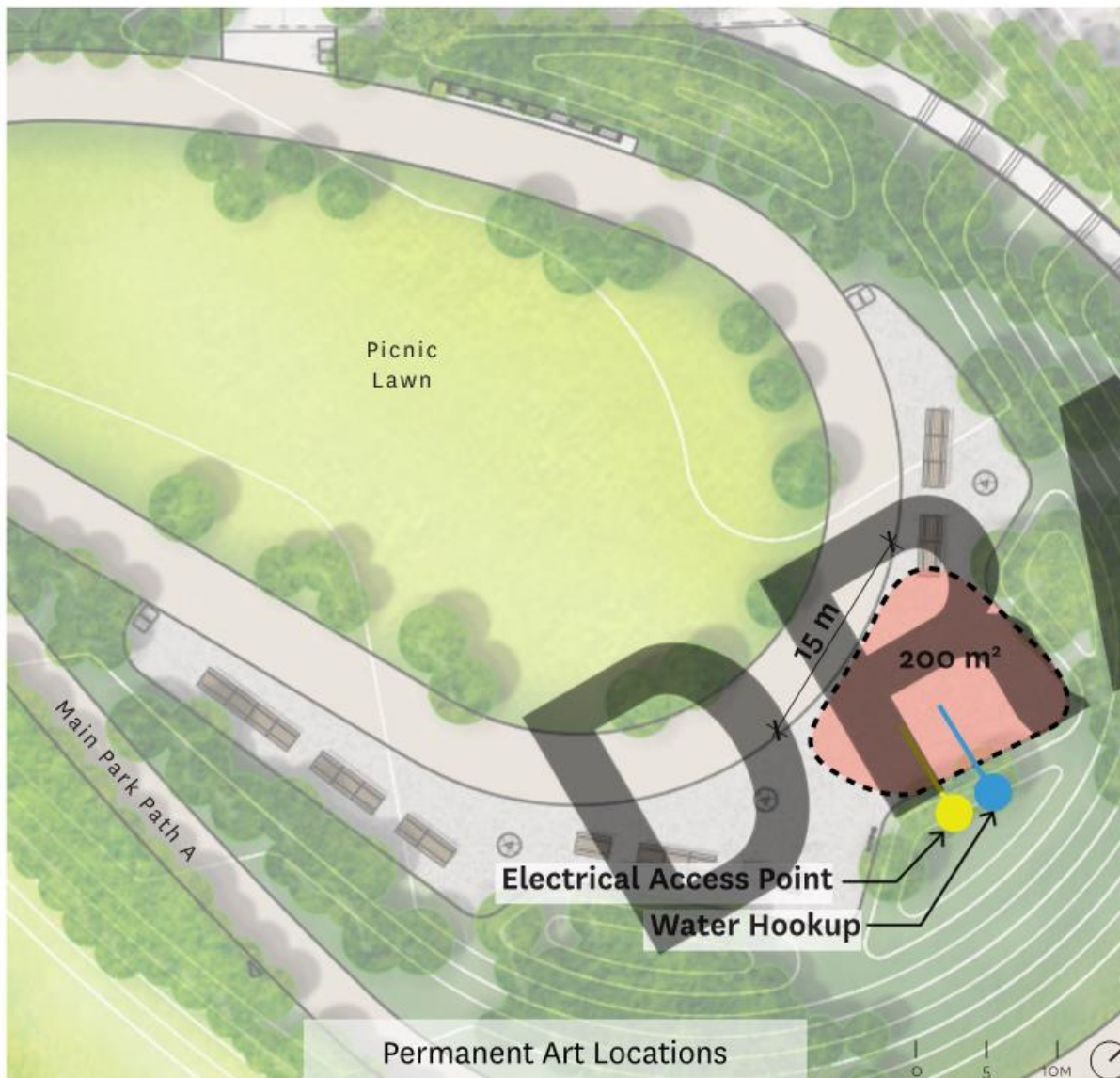


Art Infrastructure - Diagram

- No Servicing
- Electric Only
- Electric + Water
- Electric + Water + Data
- Art Walk



Art Infrastructure - Enlargement Plans

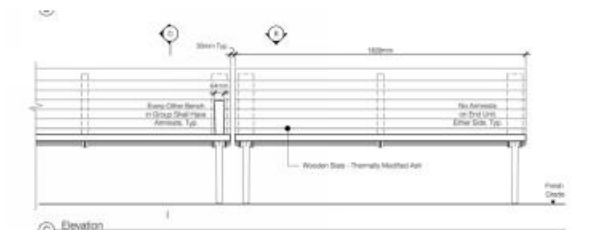


Bench and Seating Locations - Diagram

- Gen-50 Park Bench
- Cut Log
- Rounded Log
- Raised Stone Feature
- Picnic Table
- Gathering Area Including:
 - Log Features
 - Raised Stone Features

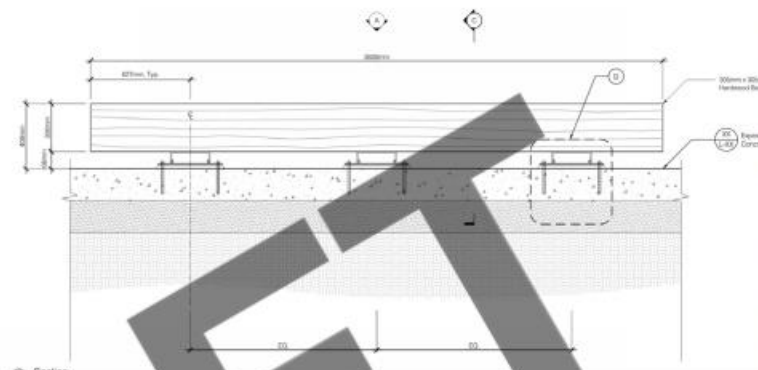


Benches - Details



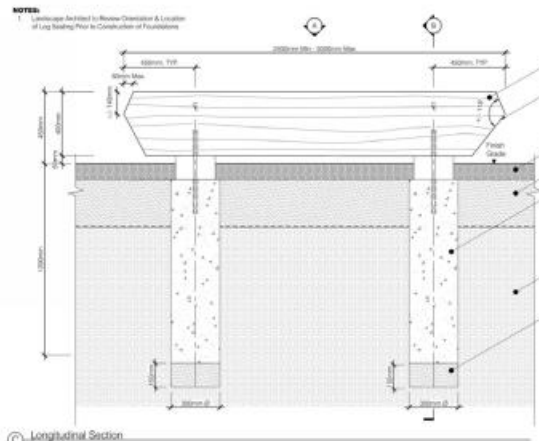
1 Park Bench
Scale 1:10

Generation 50 Park Bench



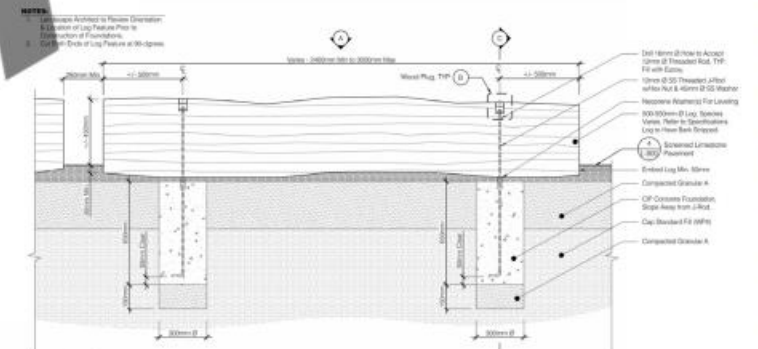
2 Timber Bench Type 2 - Backless
Scale 1:10

Timber Bench



3 Longitudinal Section
Scale 1:10

Cut Log Bench



4 Longitudinal Section
Scale 1:10

2 Log Seating Features Type 2

Rounded Log Bench



Park Fencing and Barriers - Diagram

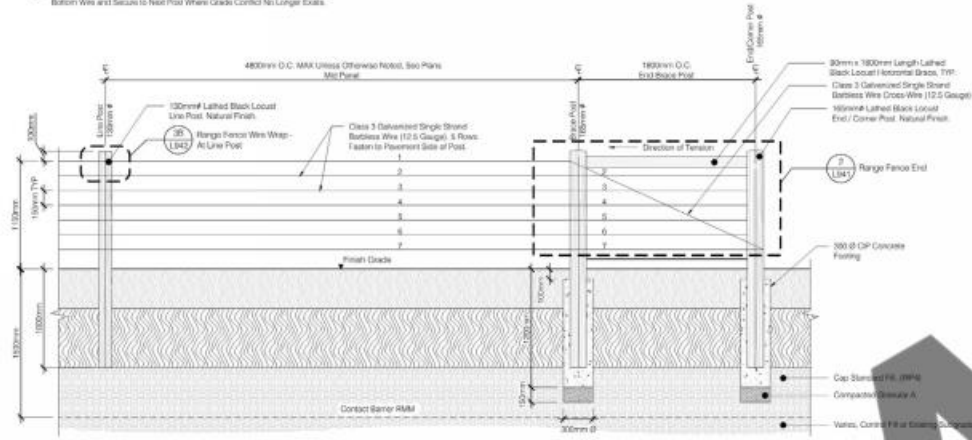
- Range Fence Type 1A
- Range Fence Type 1B
- Range Fence Type 2
- Snow Fence
- Double Pipe Plant Rail
- Wood Plant Rail
- Dogs Off-leash Area Fence
- Chain Link Fence
- Kick Rail
- Guardrail



Park Fencing and Barriers - Details

NOTES

1. CP Concrete Footing shall be Provided at all Brace and End Posts and at Locations with Tight Rock.
2. All Posts for Range Fence Type 1B Shall Be 200mm Long (Min.)
3. Should the Bottom Wire Touch Finest Grade Due to Varying Slope, Remove Bottom Wire and Secure to Next Post Where Grade Conflict No Longer Exists.



A Elevation
Scale: 1:20

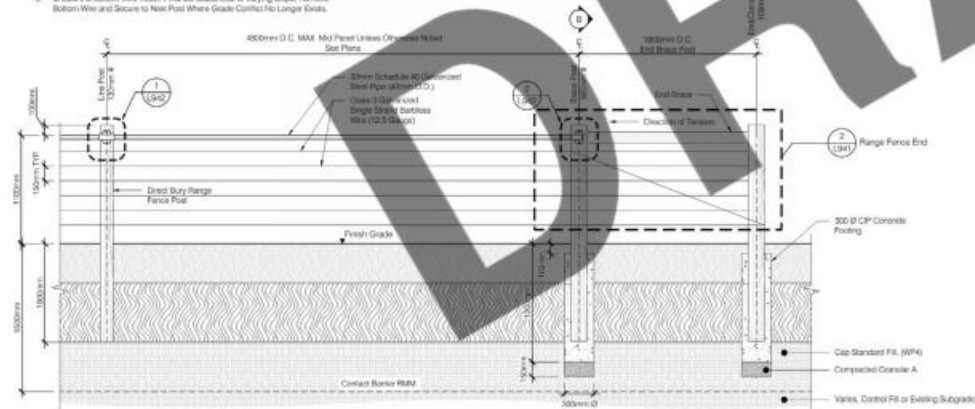


B Image

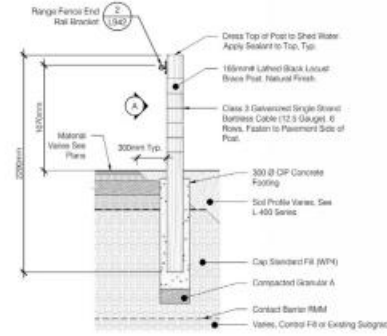
Range Fence Type 1A

NOTES

1. CP Concrete Footing shall be Provided at all Brace and End Posts and at Locations with Tight Rock.
2. All Posts for Range Fence Type 1A Shall Be 200mm Long (Min.)
3. Should the Bottom Wire Touch Finest Grade Due to Varying Slope, Remove Bottom Wire and Secure to Next Post Where Grade Conflict No Longer Exists.



A Elevation
Scale: 1:20



B End Elevation
Scale: 1:20



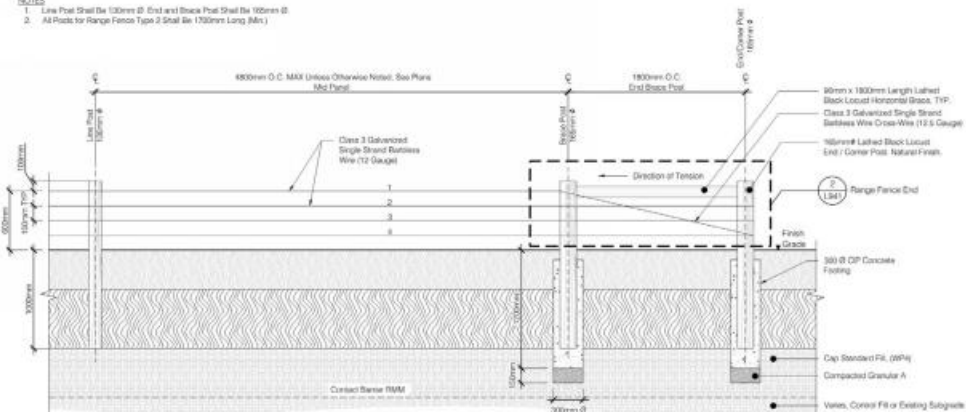
C Image

Range Fence Type 1B

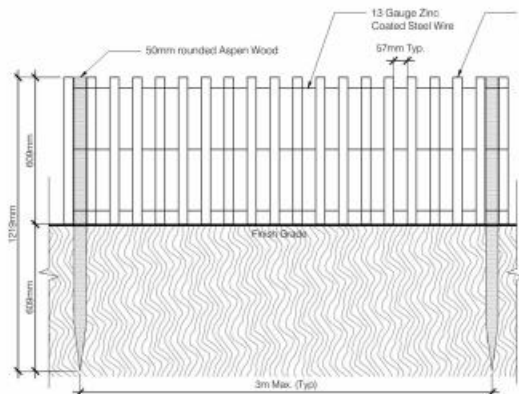
Park Fencing and Barriers - Details

NOTES

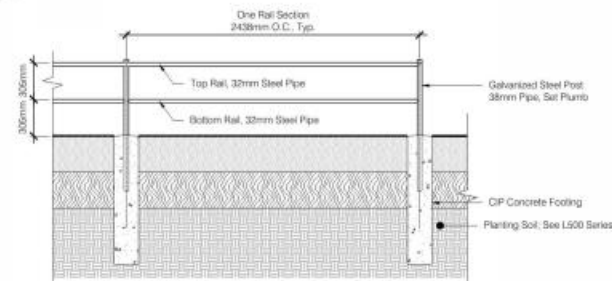
1. Line Post Shall Be 130mm Ø End and Block Post Shall Be 192mm Ø
2. All Posts for Range Fence Type 2 Shall Be 1730mm Long (Min.)



Range Fence Type 2

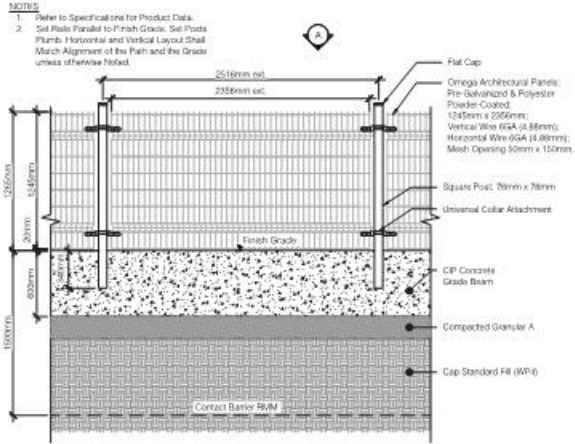


Snow Fence



Double Pipe Plant Rail

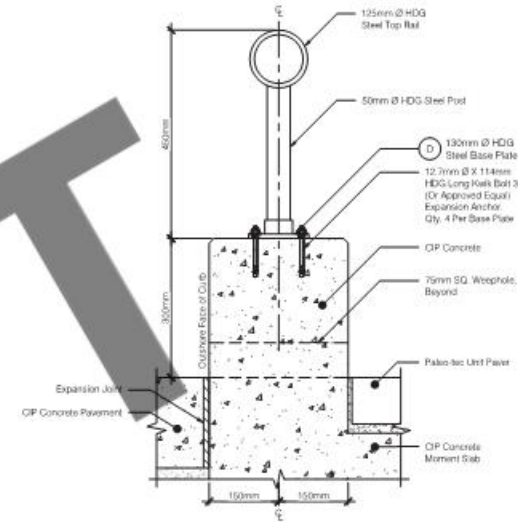
Park Fencing and Barriers - Details



B Elevation Scale: 1:20

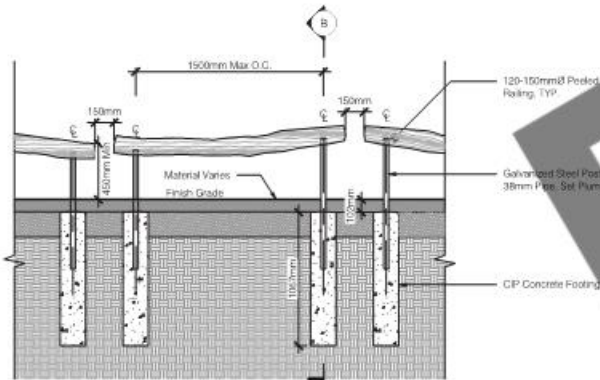


C Image



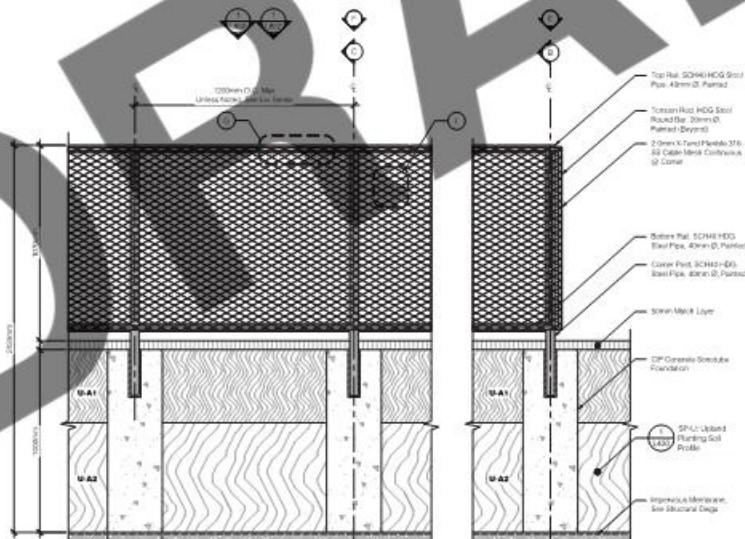
Kick Rail

Dogs Off-Leash Area Fence



A Elevation Scale: 1:20

Wood Plant Rail



Guard Rail



Lighting Strategy - Diagram

- 12.5m Lawn Moonlight+ Floodlight Wood Pole
- 8m Play Area Double Fixture Wood Pole
- 8m Play/Plaza Wood Pole
- 8m Park Path Wood Pole
- 8m Park Path Wood Pole with Shield
- MT-35 Commemoration Lighting
- Esplanade Kick-Rail Lighting
- Promontory Wall Uplights
- Under Bridge Lighting
- Bike Bridge Lighting



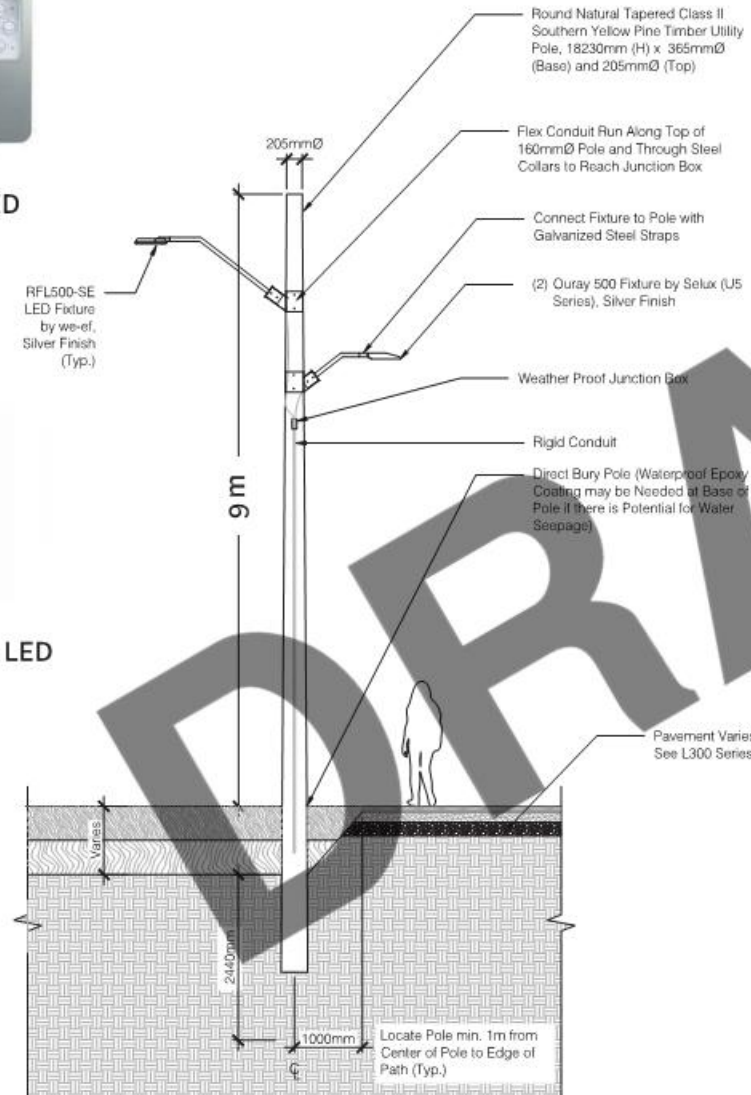
Lighting - Details



Selux Ouray LED Fixture



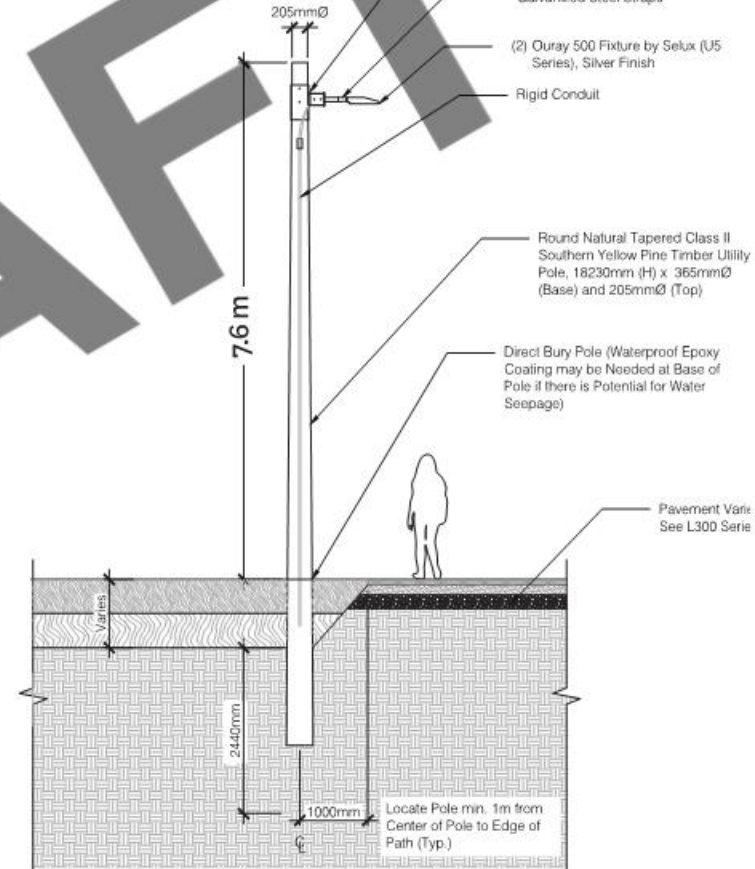
We-ef RFL-530 LED Fixture



Parks - Lawn



Selux Ouray LED Fixture



Parks - Paths

Wayfinding and Signage Strategy - Diagram

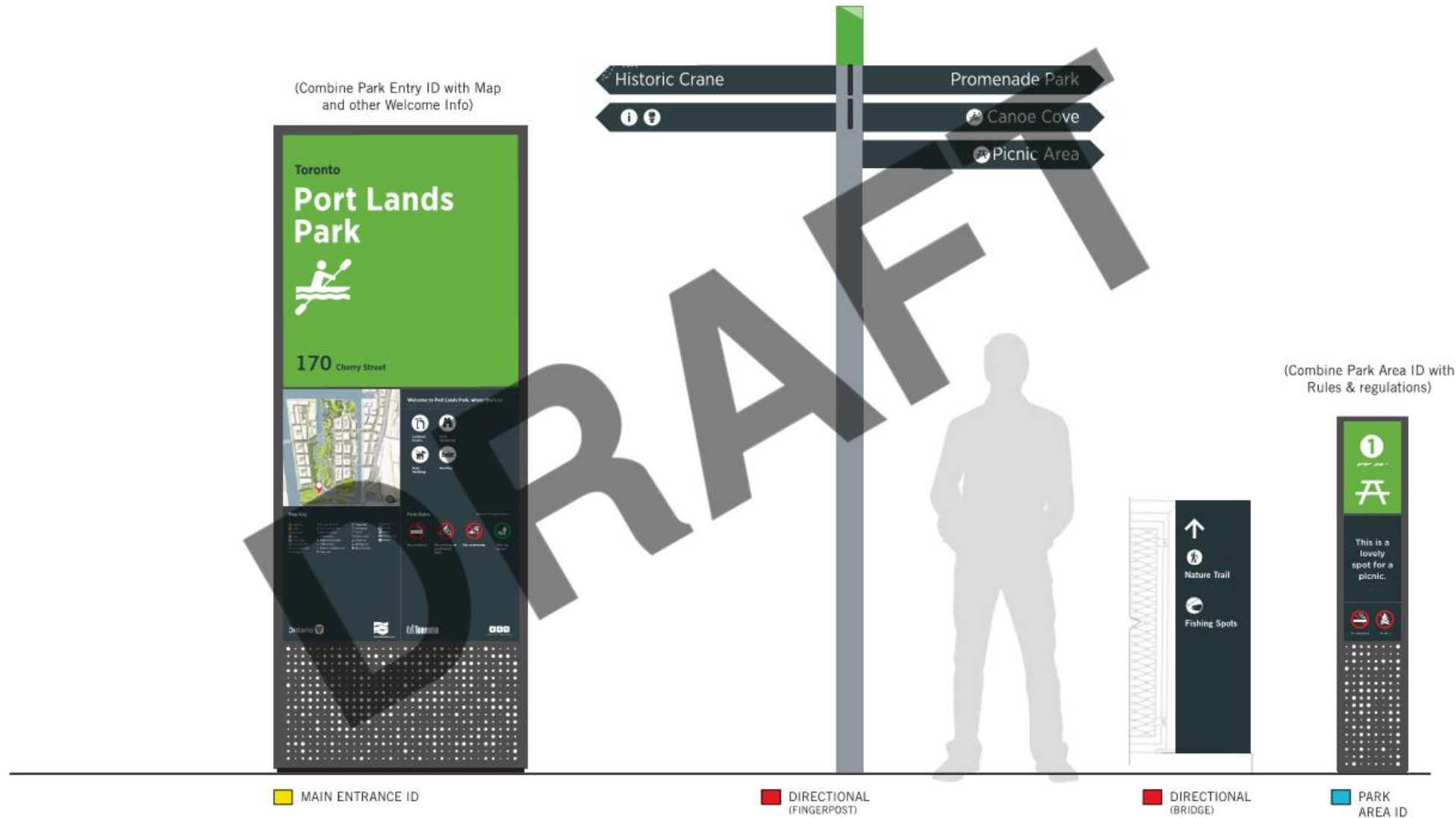
-  Entry Hub
-  Cyclist
-  Pedestrian
-  Park Identification
-  Tactile Map
-  Pavement Compass
-  Finger Post
-  Rules & Park Area Map
-  Bridge ID
-  Bridge ID & AODA Info

Alerts:

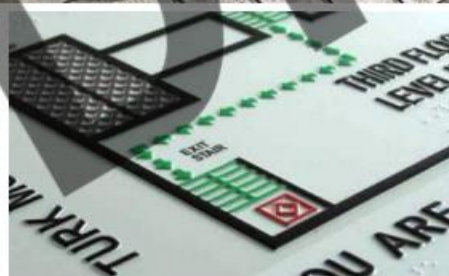
- Bike Crossings
- Accessible Routes
- Lawns
- Play Areas
- No Climbing
- No Dogs
- Washrooms



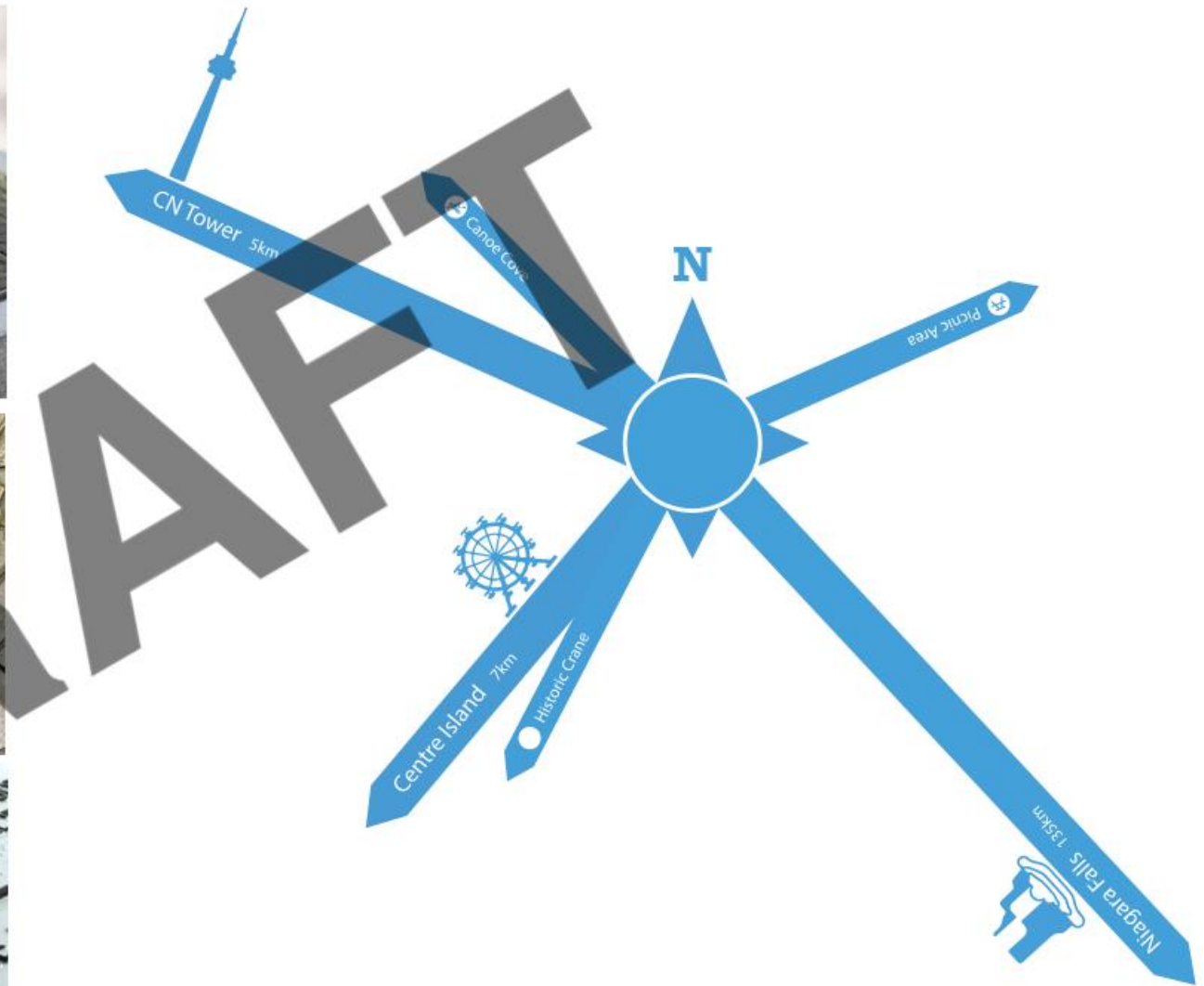
Wayfinding and Signage - Details



Wayfinding and Signage - PLFP Orientation Details



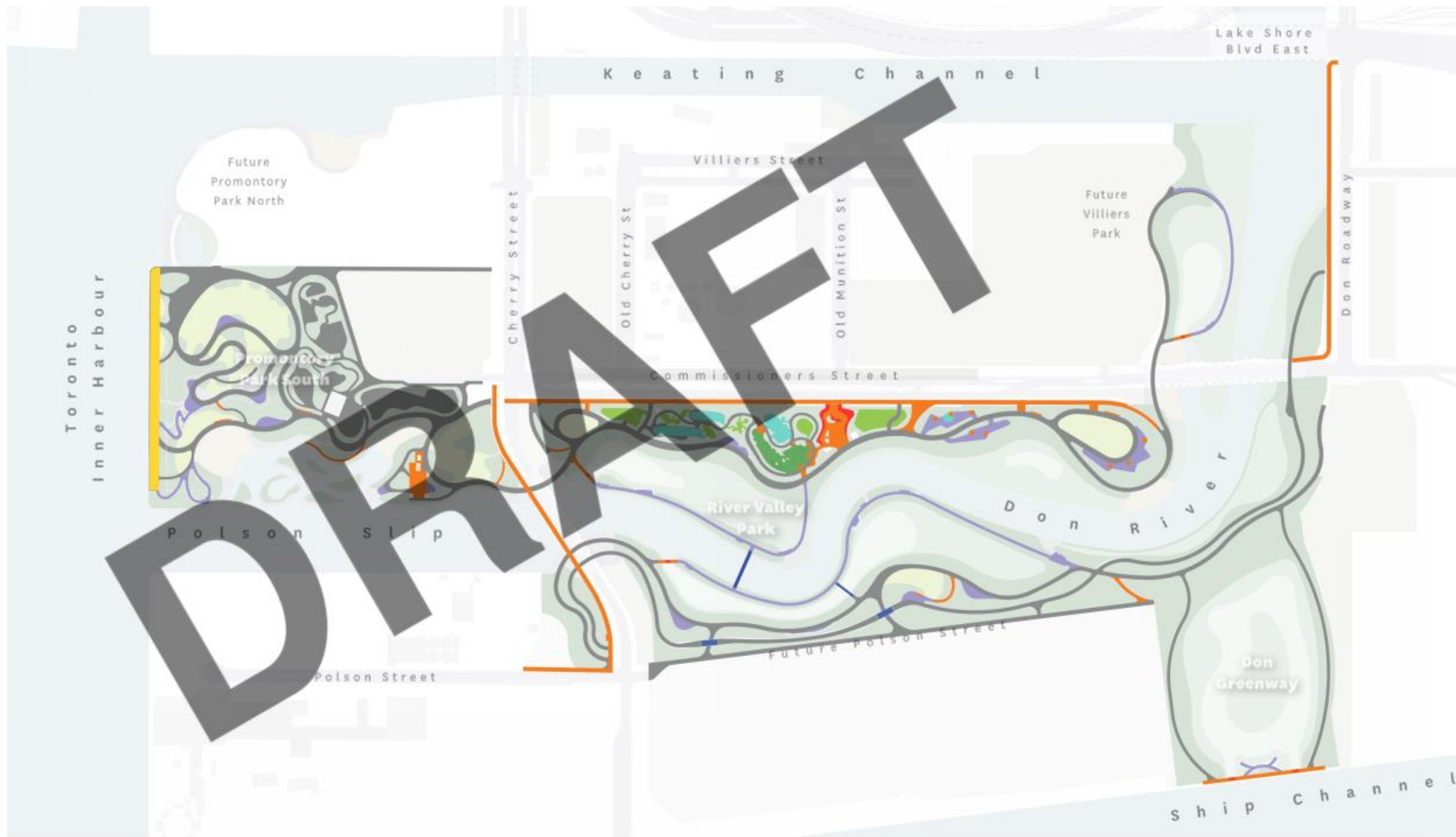
Tactile Map



Pavement Compass

Pavement Materials - Diagram

- Asphalt Pavement
- CIP Concrete Pavement
- Stabilized Screened Limestone Pavement
- Concrete Unit Pavers
- Poured in Place Play Surface
- Engineered Wood Fiber
- Sand Play Surface
- Timber Decking (Bridges)
- Aluminum Grating (Carp gates)
- Brick Pavement



Pavement Types



Asphalt



CIP Concrete Pavement



Screened Limestone



Concrete Unit Pavers



PIP Play Surface



Engineered Wood Fiber



Play Sand



Timber Decking



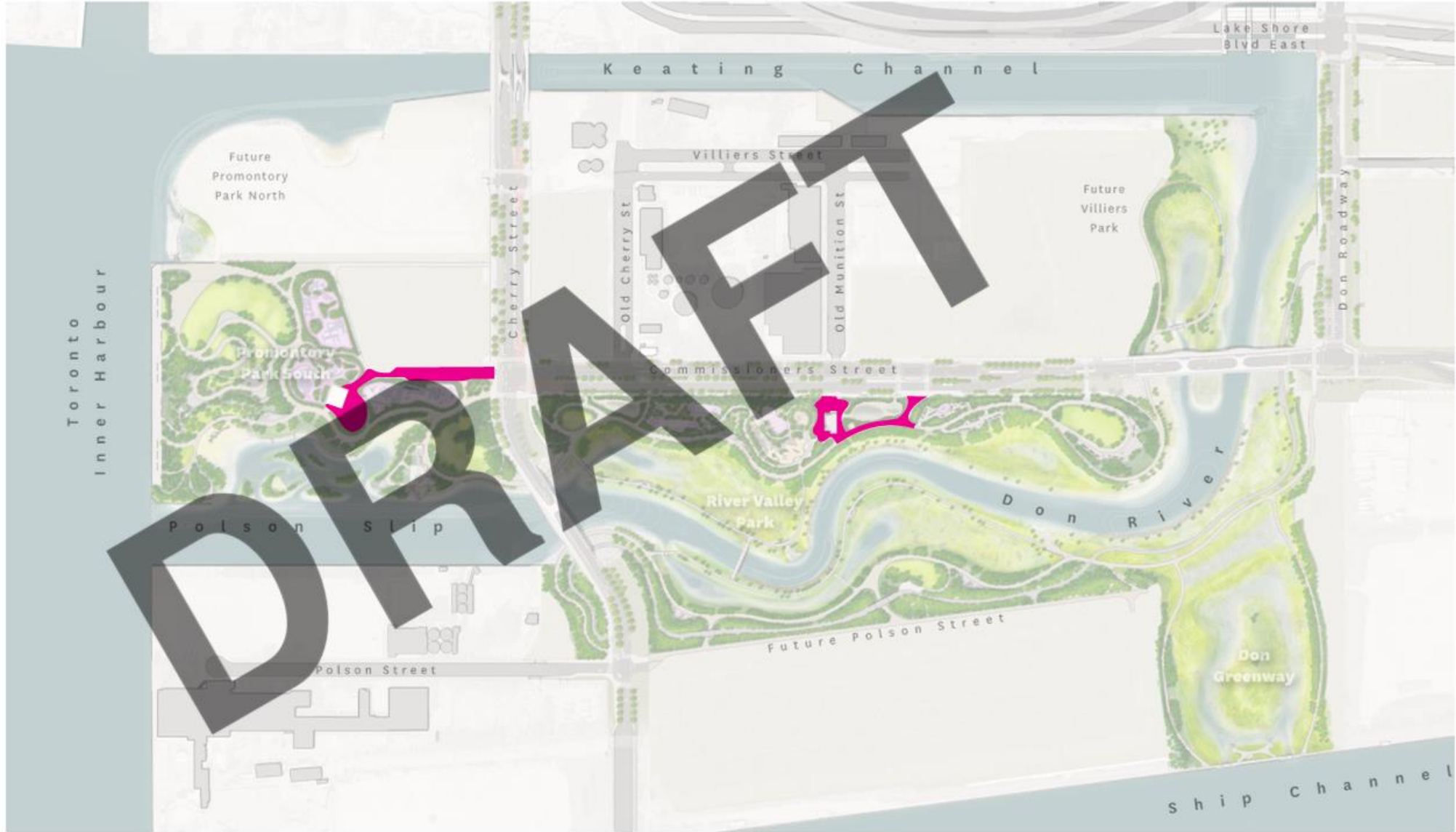
Aluminum Grating



Brick Paving

Snow Removal Locations - Diagram

Anticipated area of snow removal



Stormwater Management Infrastructure - Diagram

- Park Outfall
- Permeable Pavement
- ▨ Interim SWM
- Green Infrastructure
- Stormwater Planting
- ⊕ BFF Facility
- ⋯ Seeps
- Storm Inlet
- OGS Unit



Servicing Access Routes - Diagram

-  Waste Receptacles
-  Access Routes
-  Park Access Points (Gated)



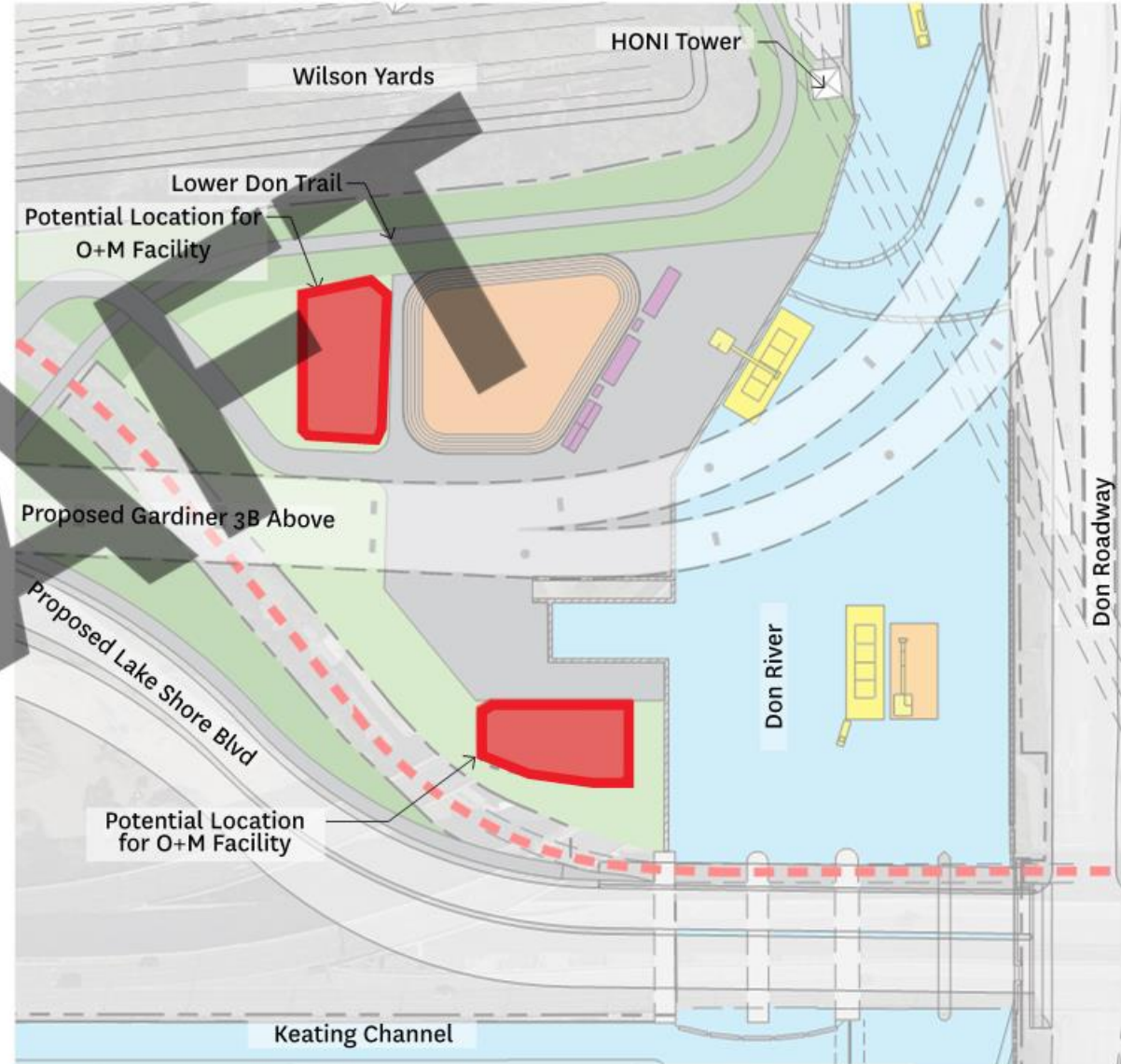
Planning for Operations and Maintenance (O+M) Needs

DRAFT

Current and Future O+M Facility Location Opportunities



2024



Full Vision



Developing A Forward Thinking Operations and Maintenance Strategy

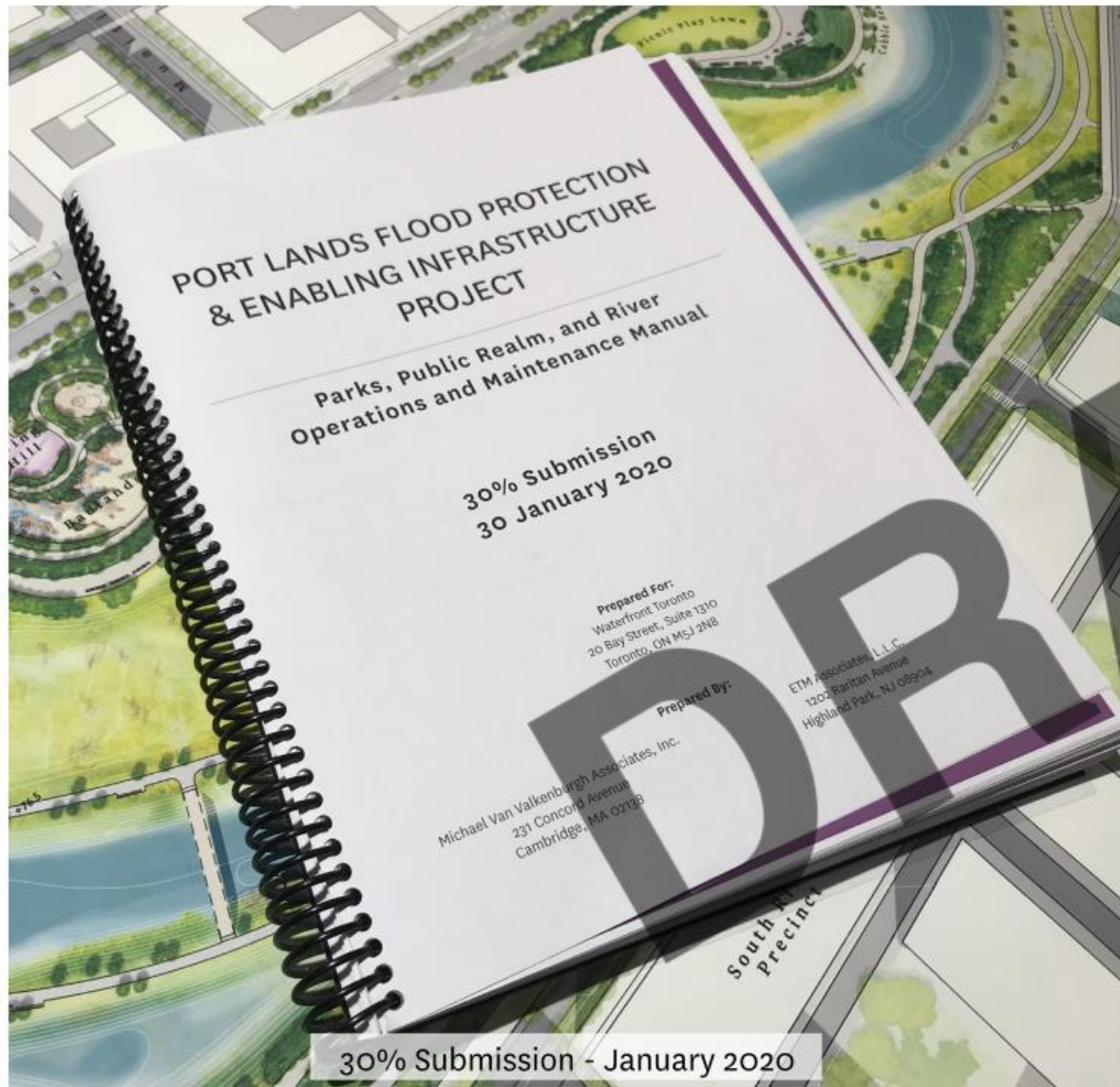


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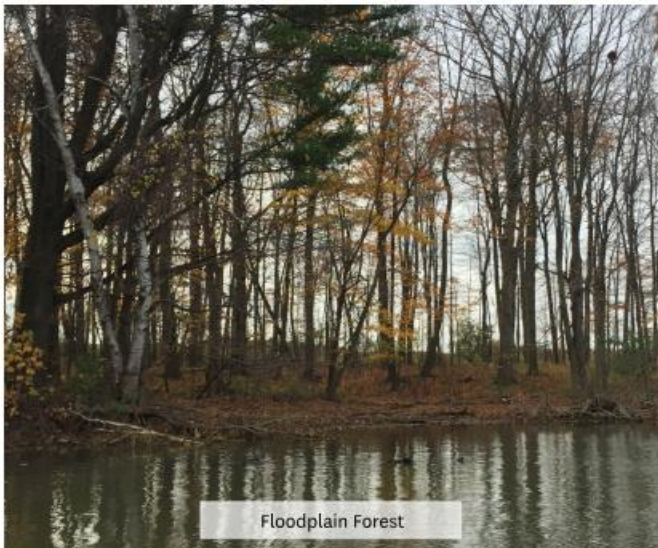
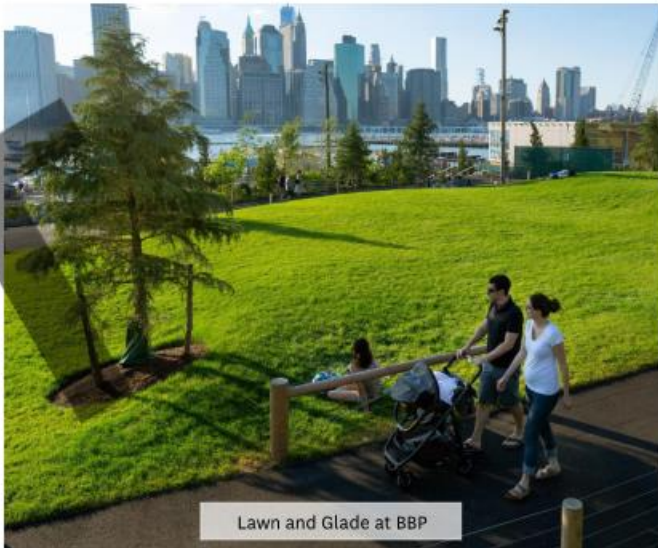
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Designing a Management Framework



Fixed Assets

Episodic Events

Adaptively Managed Assets

Operations and Maintenance Manual - Fixed Assets

4.1

Fixed Assets

Pavement: Play Area Pavements

Pavements submitted at 30% for discussion. Other Assets to be submitted at 60% Design

Play area pavements meet the unique requirements for the various program elements within the play areas. The maintenance of pavements in these locations will be more intensive than in other areas of the park to ensure playground safety standards are met.

Fast Facts

Solid Pavements

- Maintenance Intensity: Medium-High
- Dry-Mix Shotcrete: xxx m²
- Poured in Place (PIP) Play Surfacing: xxx m²

Loose Pavements

- Maintenance Intensity: Medium-High
- Engineered Wood Fiber: xxx m²
- Play Sand: xxx m²

Sustainability

- Expected lifespan of pavement types is:
 - Dry-Mix Shotcrete: xx years
 - PIP Play Surfacing: xx years
 - Engineered Wood Fiber: xx years
 - Play Sand: xx years
- Permeable surface
- Natural and locally sourced when possible
- Loose materials may require replacement every 1-3 years depending on use, as they can decompose over time

Long Term Design Vision

- Used in key program areas that require a permeable or granular surface
- Provide a natural or playful aesthetic
- Provide flexibility
- Safety and compliance with jurisdictional play code

Maintenance Drivers

Public Impacts

- Litter- Unsightly, can migrate into the floodplain and deteriorate habitat
- Vandalism/Graffiti- Unsightly, potential hazard
- Excessive wear/deterioration- create hazardous conditions or barriers, harm paving integrity
- Heavily soiled areas or contamination- unsightly, harmful to environment

Natural Impacts

- Vegetative Debris- can cause obstructions/hazards
- Sedimentation- can cause hazards and obstruct drainage flow

- Freeze/Thaw damage (cracking and heaving)- create hazardous conditions or inaccessible routes, harm paving integrity
- Weeds/unwanted vegetation- deteriorate aesthetic value and the integrity of the paved surface
- De-composure of material - loss of material quality

Monitoring Checklist

Frequency

- Inspect daily while performing other tasks
- Inspect seasonally for freeze/thaw damage
- Inspect for debris and damage after storm events
- Inspect before and after special events

Monitoring:

- Litter and debris
- Sedimentation
- Quality of paved surface
- Safe and accessible routes must be maintained at all times and meet AODA requirements

Maintenance checklist

- Removal of litter and debris
- Removal of sediment
- Repair and remove graffiti or vandalism within 24-48 hours of detection
- Raking and level of loose pavements using accepted methods (refer to...)
- Clean up material that has migrated Add or replace material where there is loss or deterioration to maintain appropriate depths and grades
- Reset edging
- Remove weeds and encroaching vegetation during the growing season before weeds go to seed
- Installation of temporary signage and safety equipment as needed during repair

Additional Information

- Appendix XX: Specification Sections xx xx xx
- Appendix XX: Pavement Profiles
- Appendix XX: AODA Requirements
- Appendix XX: CSA and ASTM Requirements for Play Surfaces



Figure 2.1 Play Area Pavement Type Locations



Figure 2.2 Play Area Pavement Types

Operations and Maintenance Manual - Episodic Events

3.1

Episodic Events

Permitted Events: General

Special Events are an important component for parks and public spaces, as they attract visitors, create community and potentially generate revenue. These types of events can draw large numbers of visitors, so it is essential that they are carefully planned, scheduled and operated. Special events can cause damage to landscapes, and this damage must be addressed quickly in order to maintain the desired aesthetics and function.

Fast Facts

Guidelines

An event is considered a special event by the City of Toronto if the event is:

- Selling or serving food to public.
- Using sound amplification (speakers, megaphone)
- Constructing/installing tents or stages
- Serving or selling alcohol
- Including amusement type rides and games (i.e. bouncing castle)
- Accepting donations, fundraising, running a lottery, drawing or raffle
- Displaying Fireworks
- Using generator(s)

This manual also considers the following to be special events if the event is:

- Is a one-time or annual event for entertainment
- Primarily uses the park/public space as a venue
- Can impact the park/public space landscape

Permits

- Permit process/requirements:
- Special permit required for serving alcohol
- Building permit requirements for temp. structures

Supplies and Set-Up

- Additional supplies are responsibility of vendor
- Refer to the vehicular access diagram for access restrictions and limitations
- Additional washrooms are required for large events. Refer to (Figure xx) for appropriate locations

Temporary Waste Management

- To be discussed

Sustainability

- Contribute to deterioration of the landscape and increased maintenance cost if mismanaged

Long Term Design Vision

- Increase visitation and strengthen the community
- Increase stewardship
- Generate park revenue with fee-based events
- Provide a platform for a variety of special events

- Provide infrastructural support (access to power, water, electricity, etc.), staffing support, setup, cleanup, vehicular access (for setup), etc.
- Ensure sustainability of events in the park uplands.

Maintenance Drivers

- Debris
- Damage to informal and formal planting areas
- Damage to site furnishings and amenities
- Signage/barrier install and removal
- Vehicular use for event servicing

Monitoring Checklist

- Compacted soil in lawns and plant beds
- Eroded or trampled areas in lawns and plant beds
- Presence of litter and food residue
- Condition of pathways and paved areas
- Condition of restrooms
- Condition of site furnishings
- Presence of graffiti or vandalism

Maintenance Checklist

- Signage/barrier install and removal
- Repair compaction and erosion in lawns
- Repair compaction and erosion in plant beds
- Replace trampled or damaged vegetation
- Remove litter and food residue
- Waste removal
- Power wash pathways and paved areas as needed
- Clean restrooms
- Clean site furnishings as needed
- Remove any vandalism and graffiti within 24-48 hours of detection

Additional Information

- TBD



Figure 2.3 Permitted Event Areas

Plan Diagram of areas in the uplands suitable for special events

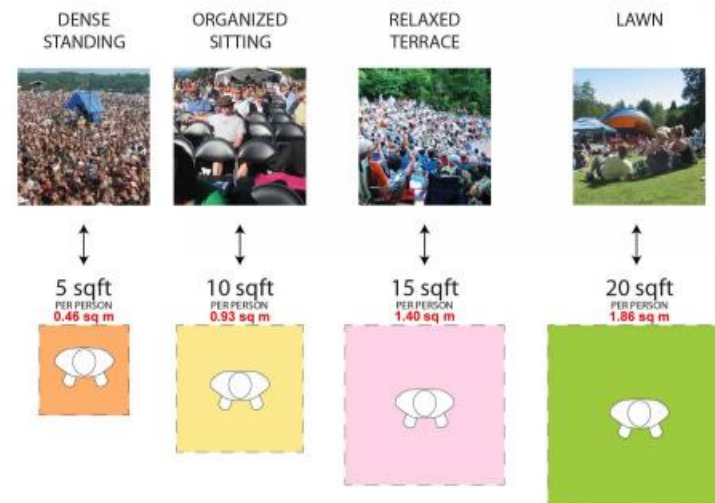


Figure 2.4 Typical Permitted Event Capacity Metrics

Operations and Maintenance Manual - Adaptively Managed Assets

2.1

Adaptively Managed Assets

Vegetation Communities: *Submergent Marsh (Deep and Shallow)*

Submergent Marsh is an herbaceous plant community found between elevation 72.5 and 74.75. It consists of two ecological sub-types, Deep Submergent and Shallow Submergent. Submergent Marsh species are installed in the wetlands behind the carp gates, where the clear (non-turbid) water supports photosynthesis. The submergent marsh is difficult to access and will see limited maintenance and management.

Fast Facts

- Deep Submergent:
 - Elevation: 72.5 to 74.25
 - Total Area: 9,250 m²
 - Species Mix: 60% Forbs, 40% Rushes and Grasses
 - Substrate: Sand or rounded cobble (SP-W1).
- Shallow Submergent:
 - Elevation: 74.25 to 74.75
 - Total Area: 3,500 m²
 - Species Mix: 25% Forbs, 75% Rushes and Grasses.
 - Substrate: Sand (SP-W1, SP-W2).
- The submergent marsh areas in Wetland 1, 2 and 3 include deep pockets (El. 72.5).

Ecological Benefits

- Cover, oxygenation, filtration, and food-web support.

Long Term Design Vision

- Boundary with emergent marsh species will be dynamic, and will fluctuate in response to Lake levels and management practices.
- Limited plant succession.
- Plant density will increase over time.
- Encourage rootless / floating species such as pondwater and waterweed.
- 60% open surface water.
- Although the elevation of the river channel are within range for submergent plants and the currents are minimal, submergent plants are not expected to colonize the river channel due to turbidity. Colonization would be acceptable.

Maintenance Drivers

- Herbivory - waterfowl eat roots.
- Carp intrusion - plant damage and excess turbidity limits photosynthesis.
- Excessive algae growth - obscures open water, de-oxygenates water.
- Excessive lily pad growth - obscures open water
- Persistent high lake level - plant mortality.
- Difficult to access.

Monitoring Checklist

- Frequency: 4 times per year.
- Monitoring:
 - Vegetation establishment.
 - Invasive species.
 - Algae.
 - Water quality.
 - Bank erosion.

Maintenance Tasks

- Adaptive Management.
- Record Keeping Log
- Algae removal at greater than 30% of surface area
- Invasive species removal
- Debris/floating removal.
- Wetland Drawdown (V3-3.3)

Supplemental Information

- Work Package #8, IFC, 23 January 2020: Plant schedules.



Figure 3.2 Submergent Marsh - Extents of Installed Plants at Handover



Figure 3.1 Analogue Submergent Marsh, Rouge River

Operations and Maintenance Manual - Adaptively Managed Assets

2.4

Adaptively Managed Assets

Stage 3 - Maturing Canopy: Ten Years After Handoff and Beyond

The mature plant community is a more stable condition than the Early Closed Canopy. This stage is defined by full canopy closure and multiple layers of vegetation (canopy tree, understory, shrub, and groundplane). Properly managed the mature canopy phase will persist for decades. Maintenance will likely center around responding to natural or human disturbance and supplementing the planting with species adapted to part to full shade conditions.

Fast Facts

- For the dynamic landscape types this period will be characterized by large trees and shrubs with a woodland groundplane. Initial sun-tolerant grasses and forbs will persist in sunny gaps and edges.
- Some long term canopy trees will still be small, but other species will have grown considerably.
- A core challenge of this period is managing the transition from the initial grass-dominated groundplane to a long-term shade tolerant groundplane.

Maintenance Drivers

- Presence of invasive species. By this point the planting is established and incursions by invasive species will be more rare. It is important to monitor because opportunistic invasives can grow amongst established plants.
- Human use.
- Response of plants to shade. Certain species will respond well to the increase in shade and others will start to decline. Monitor species that become less vigorous and supplement them with successful species or add new shade tolerant species.

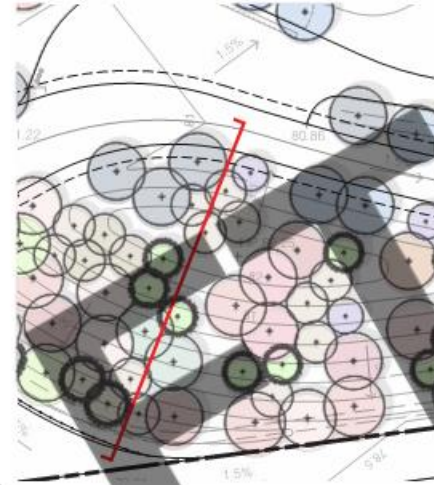


Figure 2.6 Plan + 20 Years



Figure 2.7 Example of Maturing Canopy Stage



Figure 2.5 Maturing Canopy Section

Operations and Maintenance Manual - Adaptively Managed Assets

2.4

Adaptively Managed Assets

Stage 3- Full Shade Colonies

When areas of deep shade occur in the park it is recommended to supplement the initial planting with colonies of shade tolerant species. These plants will spread into areas of open ground as shade intolerant species decline and will add diversity to the species composition. Shade allows for the addition of plants that would not have survived establishment site conditions.

Fast Facts

- Many woodland species spread vegetatively, meaning they will expand from where they are initially planted. Additionally, many woodland species have seed that is only viable for a short amount of time.
- As a result, it is preferable to use live plants (plugs or larger) to establish a shade tolerant groundplane.
- Many of these species will spread to colonize larger areas with time.
- Sheltered conditions create opportunities for the addition of specialized species such as the spring ephemerals in Fig X.X.
- Many of the recommended species are highly competitive and are able to spread vegetatively or by reseeding

Ecological Benefit

- Adapting to the shaded conditions creates woodland habitats that support species that would not be found in more open conditions.

Colony Planting Methods

- The colonies are a cost effective method of establishing a shade-tolerant groundplane. The colonies allow plants to spread outwards as shade expands.
- Clear the defined area of existing vegetation.
- Plant with live plants in single species groups.
- Leaf litter mulch and initial supplemental watering will help plants establish.

Additional Information

- Appendix XX: XXXXX



Figure 2.8 Spring Ephemerals Planted into Closed Canopy Woodland

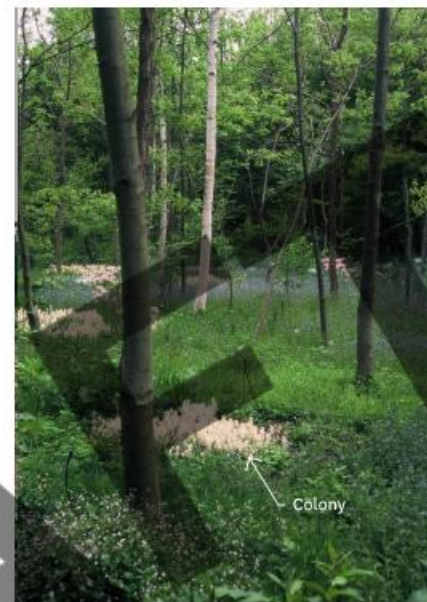


Figure 2.9 Colonies of Foamflower



Figure 2.10 Mulched Colonies After Planting

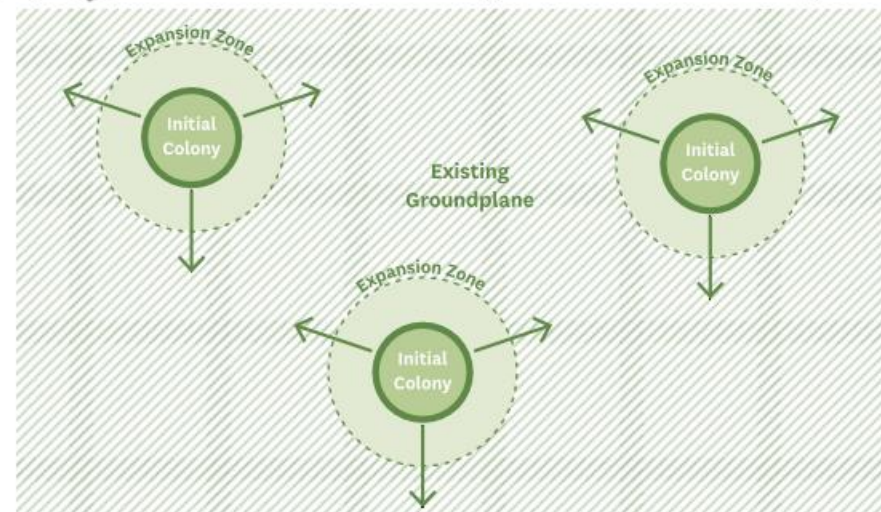


Figure 2.11 Colony Diagram Showing Expansion into Existing Groundplane

Operations and Maintenance Manual - Adaptively Managed Assets

2.5

Adaptively Managed Assets

Viewsheds

The viewsheds are a key aspect of the design because they visually link the park to floodplain and the surrounding landscape. The viewsheds require maintenance to remain clear of obstructing vegetation. There are two types of views in the design: framed views which are clear views between objects, and filtered views which are through or beneath obstructions.

Fast Facts

Overall

- A viewshed is a minimum of 3m wide.
- Viewsheds should not have straight hard edges. The view cones on the plan are only guidelines and views should appear naturalistic.
- Certain viewsheds should be low enough to be accessible for people in wheelchairs and children.

Framed Views

- Framed views are long unobstructed site lines between obstructions.
- These views are maintained by pruning the side branches of trees and shrubs to keep them out of the site line.

Filtered Views

- An example of a filtered view is between the trunks of trees whose lowest branch is above eye level.
- Filtered views are maintained by limbing trees up above eye level and clearing other obstructions.

Long Term Design Vision

- Views will evolve as plant grow, but the long term design vision is for the viewsheds to persist.

Maintenance Checklist

- Monitoring frequency: Seasonally
- Prune trees and shrubs
- Remove trees and shrubs that have recruited into viewsheds and keep groundplane low.



Figure 2.12 Viewsheds Diagram

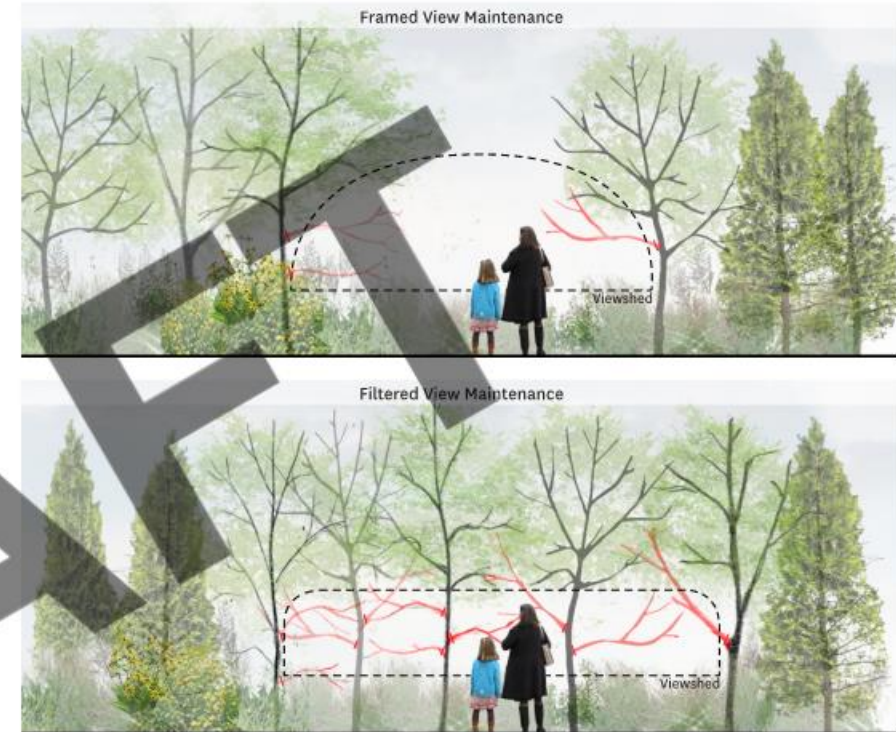


Figure 2.13 Framed and Filtered View Designs



Figure 2.14 Framed and Filtered View Examples

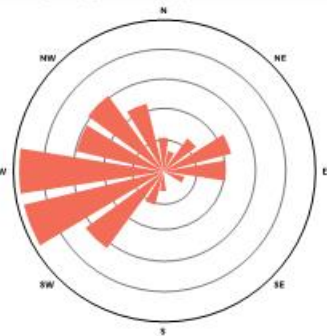
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Planting a Forest Frame

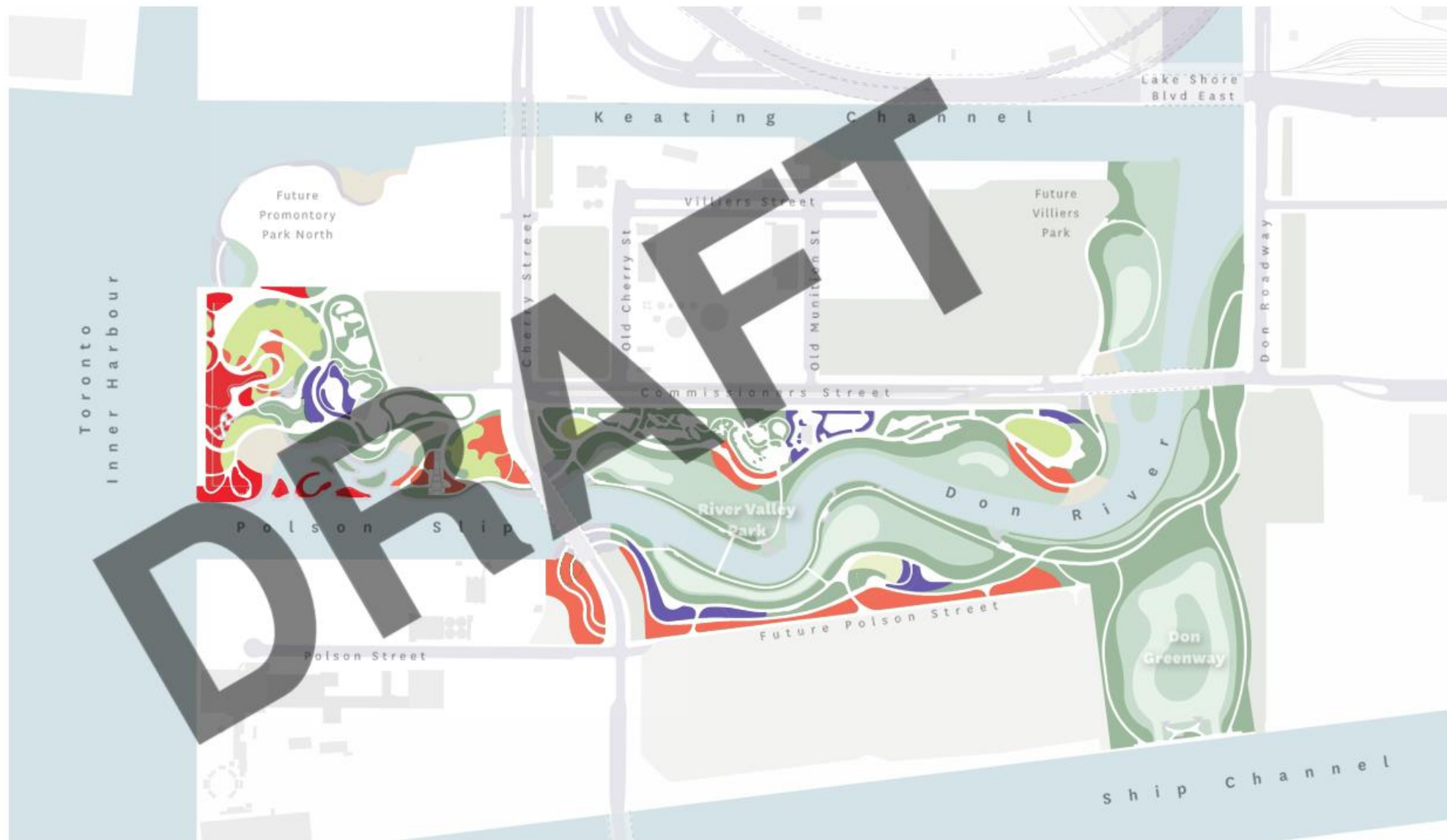
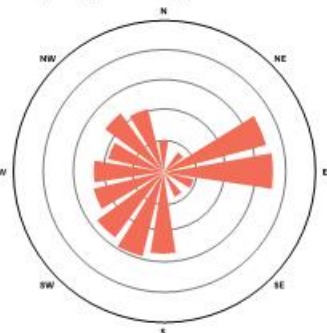
Park Planting Microclimate - Diagram

- High Exposure
- Medium Exposure
- Sheltered

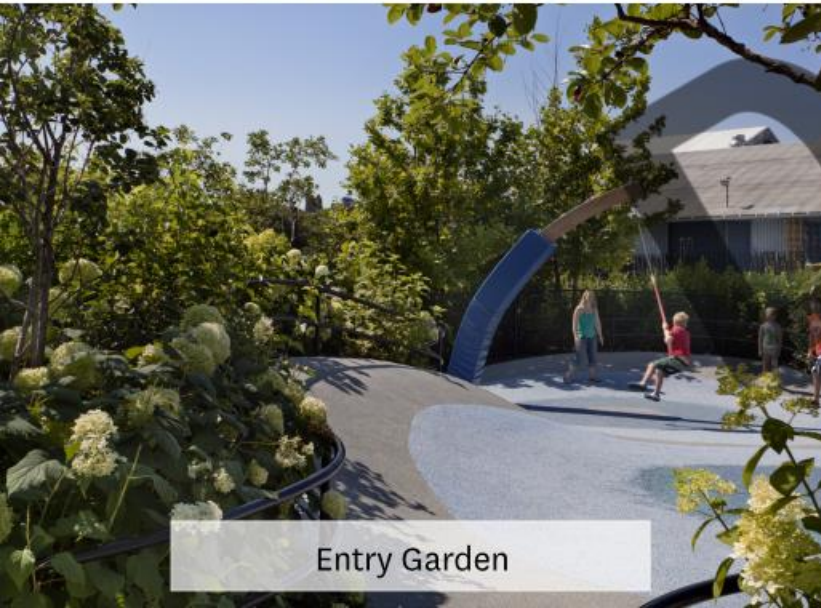
Winter Wind Direction
(Billy Bishop)



Summer Wind Direction
(Billy Bishop)

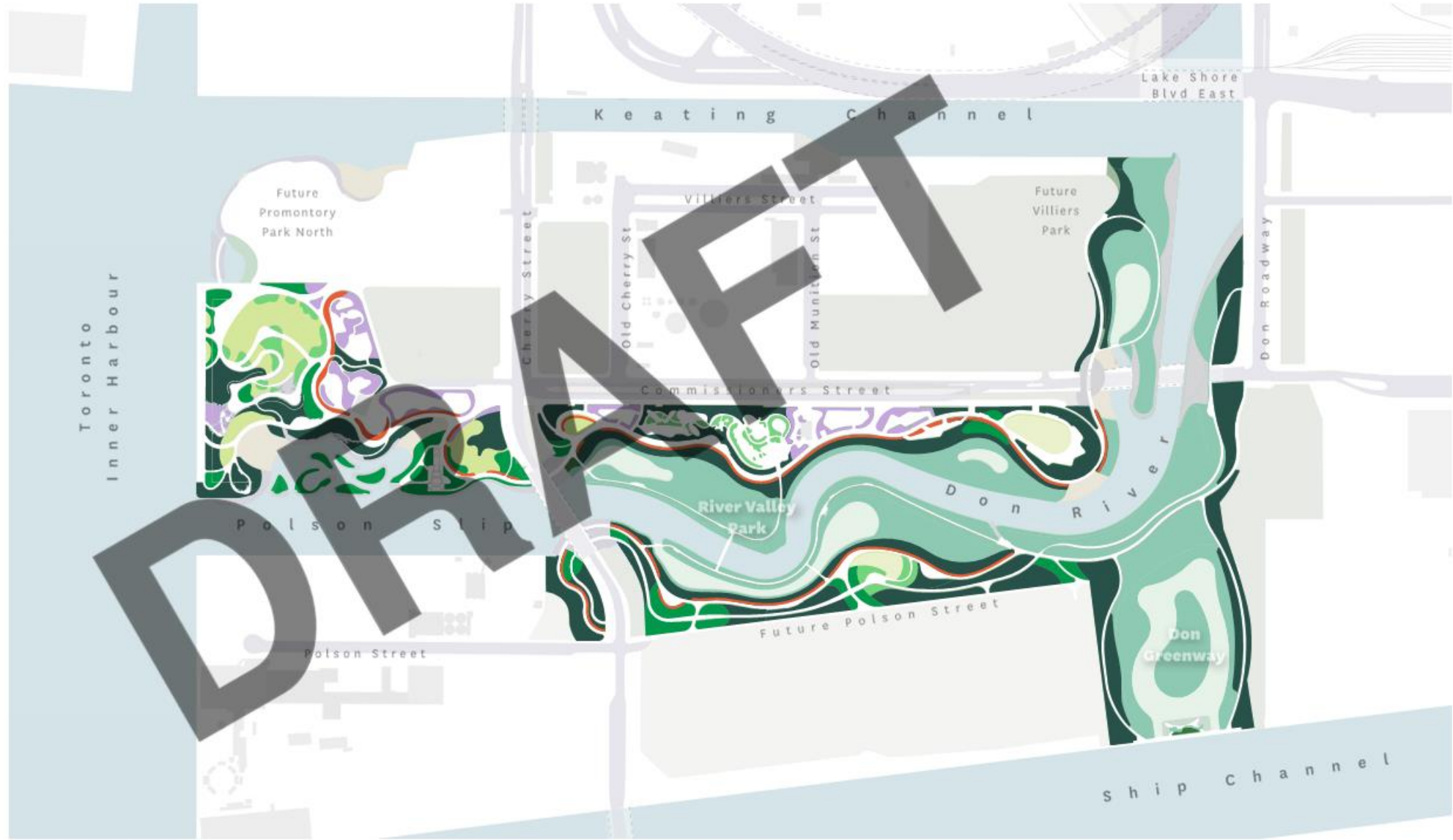


Park Planting Types



Park Planting Zones- Diagram

- Garden
- Grove
- Glade
- Hedgerow
- Mixed Forest
- Lawn



Ontario Analogue Vegetation Communities - Uplands



Woodland Interior



Woodland Edge



Bluff



Floodplain Forest



Barren



Island Thicket

Park Analogue Vegetation Communities

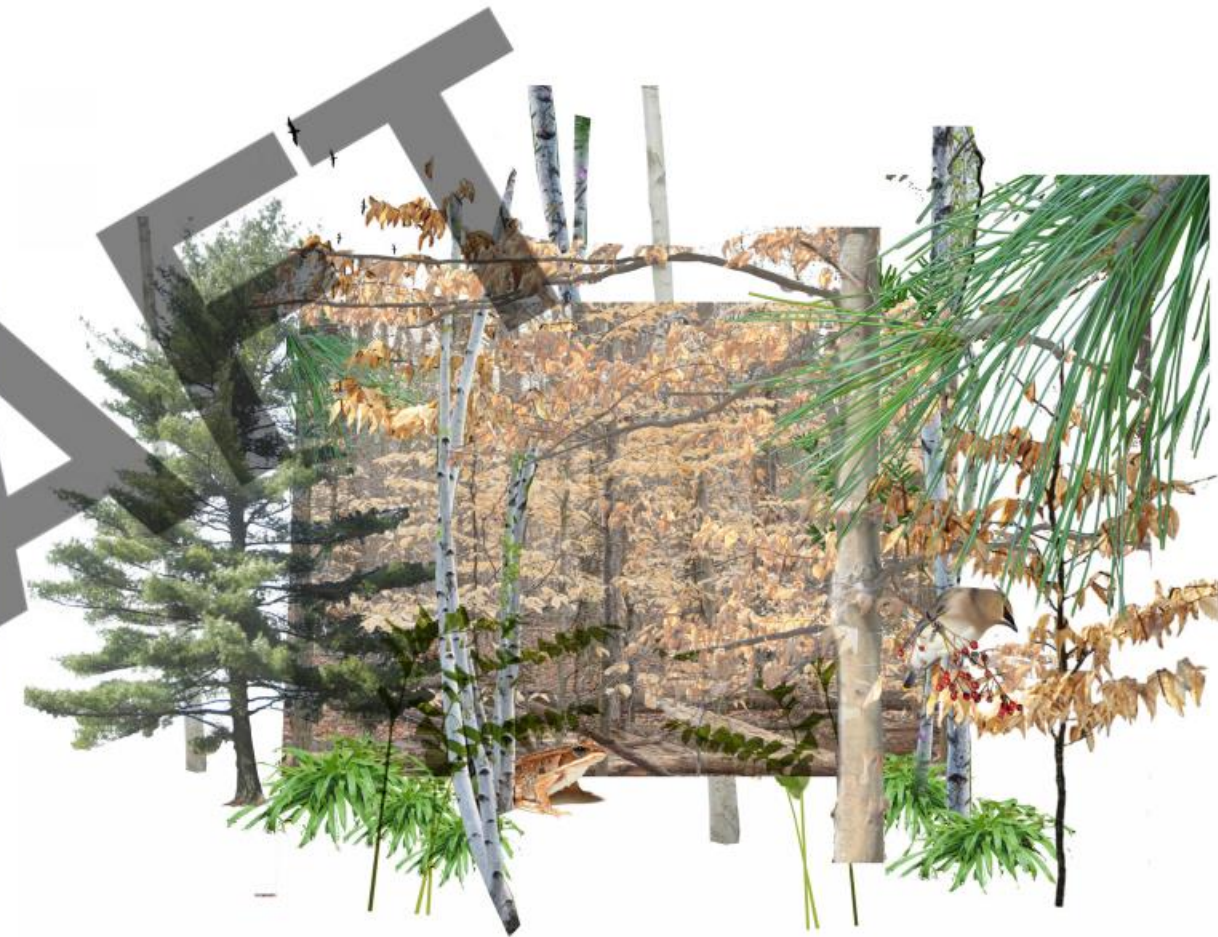
- Woodland Interior
- + Rondeau Carolinian Forest
- Woodland Edge
- + Old Field Hedgerow
- Floodplain Forest
- + Rouge River Park
- Barren
- + Torrance Barren
- Island Thicket
- + Humber Bay Islands
- Bluff
- + Oak Ridge Moraine



Program + Ecology



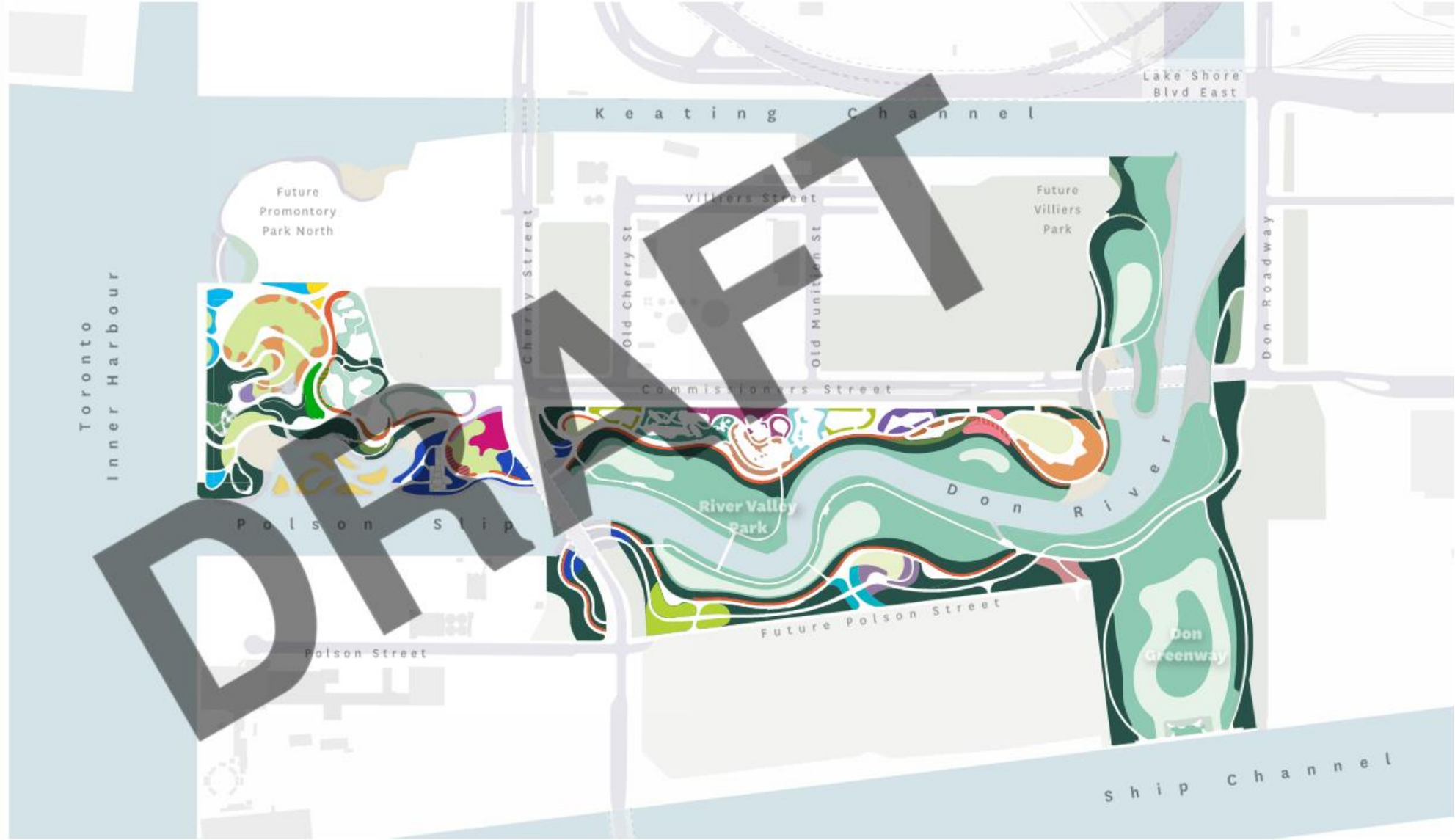
Green Giant Forest



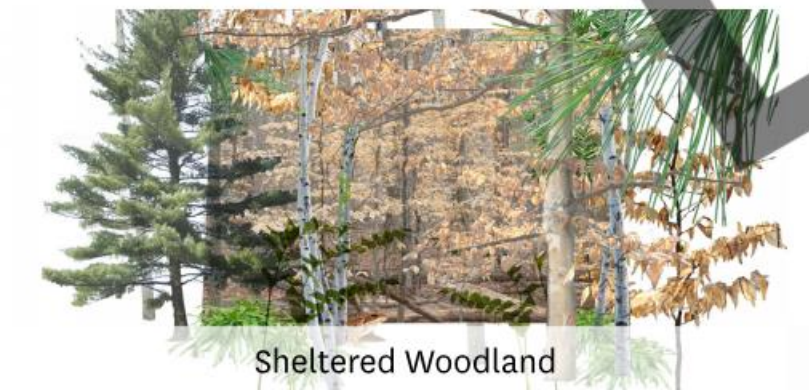
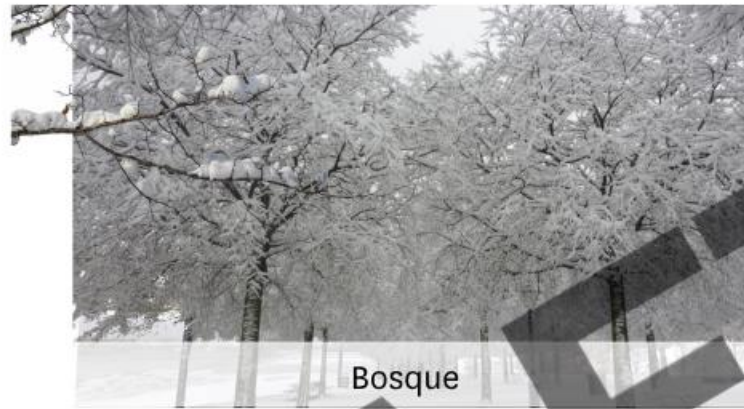
Sheltered Woodland

Park Planting Moments - Diagram

- Hedgerow Spine
- Poplar Grove
- Oak Lawn
- Silver Maple Stand
- Larch Grove
- Mixed Forest
- Catalpa Promontory
- The Scramble
- Locust Gateway
- Sheltered Beech/Birch Forest
- Sugar Hill
- Willow Grove
- Bosque
- Entry Tunnel
- Island Thickets
- Play Garden
- DOLA Garden
- Green Giant Forest
- Cableway Canyon
- Badlands Scramble
- Buckeye Terrace
- Firehall 30 Plaza
- Carolinian Grove
- Buckeye Lawn
- Forest Entrance
- Oak Descent
- Floodplain



A Range of Landscape Experiences in Promontory Park



A Range of Landscape Experiences in River Valley Parks



Mixed Forest



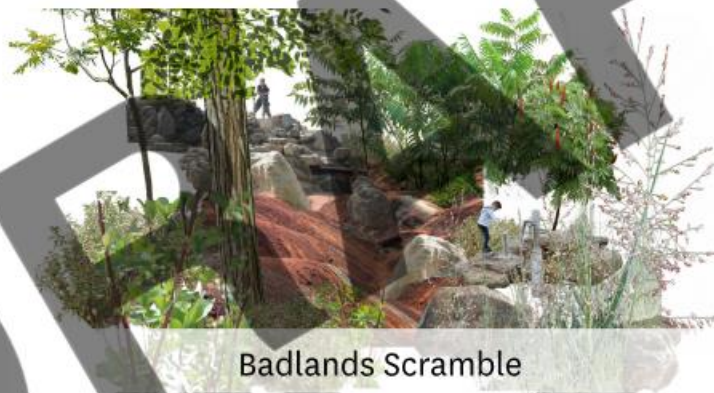
Hedgerow



Buckeye Picnic Terrace



Cableway Canyon



Badlands Scramble



Green Giant Forest



Carolinian Grove



Oak Descent



Forest Entrance

View from Centre Street looking Southwest towards Central Lawn



View from Polson Slip Overlook looking Northwest to Harbour Promontory



View from Cherry Street Park Entrance looking Southwest towards Canoe Cove



View from River Valley Park South Lawn looking West Towards Promontory Park South





DRAAFT

Appendix

Plant Schedules River Valley Parks

PLANTING SCHEDULE: WP9

Trees				
KEY	QTY	Botanical Name	Common Name	Size
AC	19	<i>Acer campestre</i>	Hedge Maple	50mm cal.
AF1	45	<i>Acer x freemanii</i>	Freeman's Maple	60mm cal.
AF2	12	<i>Acer x freemanii</i>	Freeman's Maple	10 gal.
AS1	71	<i>Acer saccharinum</i>	Silver Maple	60mm cal.
AS2	19	<i>Acer saccharinum</i>	Silver Maple	10 gal.
AA	42	<i>Acer saccharum</i>	Sugar Maple	60mm cal.
AT	15	<i>Acer saccharum</i> 'Temple's Upright'	'Temple's Upright' Sugar Maple	60mm cal.
AG	46	<i>Aesculus glabra</i>	Ohio Buckeye	90mm cal.
AO	26	<i>Aesculus octandra</i>	Yellow Buckeye	60mm cal.
AP	17	<i>Aesculus pavia</i>	Red Buckeye	50mm cal.
BP	141	<i>Betula papyrifera</i>	White Birch	60mm cal.
BG	40	<i>Betula populifolia</i>	Grey Birch	10 gal.
CC	36	<i>Carpinus caroliniana</i>	American Hornbeam	50mm cal.
CO	20	<i>Carya ovata</i>	Shagbark Hickory	10 gal.
CS1	46	<i>Catalpa speciosa</i>	Northern Catalpa	60mm cal.
CS2	9	<i>Catalpa speciosa</i>	Northern Catalpa	10 gal.
CH	47	<i>Celtis occidentalis</i>	Common Hackberry	60mm cal.
CR	45	<i>Cercis canadensis</i> 'Northern Strain'	'Northern Strain' Canada Redbud	50mm cal.
CK	30	<i>Cladrastis kentukea</i>	Yellowwood	90mm cal.
FG	97	<i>Fagus grandifolia</i>	American Beech	10 gal.
GD	39	<i>Gymnocladus dioica</i> 'Espresso'	'Espresso' Kentucky Coffeetree	60mm cal.
JN	18	<i>Juglans nigra</i>	Black Walnut	60mm cal.
JV	106	<i>Juniperus virginiana</i>	Eastern Red-cedar	175cm ht.
LL	37	<i>Larix laricina</i>	Tamarack	60mm cal.
LT1	38	<i>Liriodendron tulipifera</i>	Tulip Poplar	60mm cal.
LT2	25	<i>Liriodendron tulipifera</i>	Tulip Poplar	10 gal.
MA	11	<i>Magnolia acuminata</i>	Cucumber Magnolia	60mm cal.
OV	58	<i>Ostrya virginiana</i>	American Hophornbeam	50mm cal.
PW	61	<i>Pinus strobus</i>	White Pine	175cm ht.
PO	13	<i>Platanus occidentalis</i>	American Sycamore	60mm cal.
PB	69	<i>Populus balsamifera</i>	Balsam Poplar	10 gal.
PD1	32	<i>Populus deltoides</i>	Cottonwood	50mm cal.
PD2	19	<i>Populus deltoides</i>	Cottonwood	10 gal.

PLANTING SCHEDULE: WP9

Trees				
KEY	QTY	Botanical Name	Common Name	Size
PG	67	<i>Populus grandidentata</i>	Big-tooth Aspen	10 gal.
PT	50	<i>Populus tremuloides</i>	Quaking Aspen	10 gal.
PS1	40	<i>Prunus serotina</i>	Black Cherry	50mm cal.
PS2	8	<i>Prunus serotina</i>	Black Cherry	10 gal.
QB	21	<i>Quercus bicolor</i>	Swamp White Oak	60mm cal.
QE	22	<i>Quercus ellipsoidalis</i>	Hills Oak	60mm cal.
QT1	61	<i>Quercus macrocarpa</i>	Bur Oak	60mm cal.
QT2	3	<i>Quercus macrocarpa</i>	Bur Oak	10 gal.
QC	10	<i>Quercus montana</i>	Chestnut Oak	60mm cal.
QM1	26	<i>Quercus muehlenbergii</i>	Chinkapin Oak	60mm cal.
QM2	11	<i>Quercus muehlenbergii</i>	Chinkapin Oak	10 gal.
QF	31	<i>Quercus robur</i> f. <i>fastigiata</i>	Fastigiata English Oak	60mm cal.
QR1	55	<i>Quercus rubra</i>	Red Oak	60mm cal.
QR2	2	<i>Quercus rubra</i>	Red Oak	10 gal.
QH	8	<i>Quercus x macdanielii</i> 'Clemons'	Heritage Oak	60mm cal.
SA	17	<i>Sassafras albidum</i>	Sassafras	10 gal.
TO	121	<i>Thuja occidentalis</i>	Northern White Cedar	175cm ht.
TP	25	<i>Thuja plicata</i> 'Green Giant'	'Green Giant' Arborvitae	250cm ht.
TA1	67	<i>Tilia americana</i>	American Linden	60mm cal.
TA2	12	<i>Tilia americana</i>	American Linden	10 gal.
TR	20	<i>Tilia americana</i> 'Redmond'	'Redmond' American Linden	60mm cal.
TC	72	<i>Tsuga canadensis</i>	Hemlock	175cm ht.

Plant Schedules River Valley Parks

Shrubs				
KEY	QTY	Botanical Name	Common Name	Size
SAP	48	<i>Aesculus parviflora</i>	Bottlebrush Buckeye	200cm ht.
SAA	63	<i>Aronia arbutifolia</i>	Red Chokeberry	5 gal.
SAM	94	<i>Aronia melanocarpa</i>	Black Chokecherry	5 gal.
SAT	17	<i>Asimina triloba</i>	Paw Paw	200cm ht.
SCA	77	<i>Ceanothus americanus</i>	New Jersey Tea	2 gal.
SCD	24	<i>Cornus amomum</i>	Silky Dogwood	5 gal.
SCR1	154	<i>Cornus racemosa</i>	Grey Dogwood	5 gal.
SCS	24	<i>Cornus sericea</i>	Red-osier Dogwood	2 gal.
SCH	71	<i>Corylus americana</i>	American Hazelnut	200cm ht.
SFM	44	<i>Fothergilla major</i>	Large Fothergilla	5 gal.
SHV	44	<i>Hamamelis x intermedia</i>	Hybrid Witch Hazel	200cm ht.
SHW	93	<i>Hamamelis virginiana</i>	American Witch Hazel	200cm ht.
SHQ	39	<i>Hydrangea quercifolia</i>	Oakleaf Hydrangea	5 gal.
SIV	23	<i>Ilex verticillata</i>	Winterberry Holly	5 gal.
SIT	145	<i>Itea virginica</i>	Sweetspire	5 gal.
SMP	55	<i>Myrica pensylvanica</i>	Bayberry	5 gal.
SPO	137	<i>Physocarpus opulifolius</i>	Common Ninebark	5 gal.
SPA	6	<i>Prunus americana</i>	Wild Plum	200cm ht.
SPV	18	<i>Prunus pensylvanica</i>	Pin Cherry	200cm ht.
SPV	10	<i>Prunus virginiana</i>	Chokecherry	200cm ht.
SRA	131	<i>Rhus aromatica</i>	Fragrant Sumac	5 gal.
SRG	50	<i>Rhus aromatica 'Gro-Low'</i>	'Gro-Low' Fragrant Sumac	5 gal.
SRS	115	<i>Rhus copallinum</i>	Shining Sumac	5 gal.
SRT	221	<i>Rhus typhina</i>	Staghorn Sumac	5 gal.
SRC	173	<i>Rosa carolina</i>	Pasture Rose	5 gal.
SRO	202	<i>Rubus odoratus</i>	Purple Flowering Raspberry	5 gal.
SSC	138	<i>Sambucus canadensis</i>	Common Elderberry	5 gal.
SSA	21	<i>Spiraea alba</i>	Meadowsweet	2 gal.
SST	54	<i>Spiraea tomentosa</i>	Steeplebush	2 gal.
SSB	31	<i>Staphylea trifolia</i>	Bladdernut	200cm ht.
SSA	185	<i>Symphoricarpos albus</i>	Common Snowberry	5 gal.
SSO	78	<i>Symphoricarpos orbiculatus</i>	Coralberry	2 gal.
SVA	21	<i>Viburnum acerifolium</i>	Maple-leaved Viburnum	5 gal.

Shrubs				
KEY	QTY	Botanical Name	Common Name	Size
SVB	44	<i>Viburnum x burkwoodii</i>	Burkwood Viburnum	200cm ht.
SVC	46	<i>Viburnum carlesii</i>	Koreanspice Viburnum	200cm ht.
SVW	15	<i>Viburnum cassinoides</i>	Witherod Viburnum	200cm ht.
SVD	47	<i>Viburnum dentatum</i>	Arrowwood Viburnum	5 gal.
SVL	44	<i>Viburnum lentago</i>	Nannyberry	200cm ht.
SVX	23	<i>Viburnum x rhytidophyloides</i>	Lantanaphyllum Viburnum	200cm ht.
SXS	19	<i>Xanthorhiza simplicissima</i>	Yellowroot	2 gal.

Plant Schedules River Valley Parks

MATRIX TYPE 1 (MA1): TALL			
Forbs			
QTY	Botanical Name	Common Name	Size
1,060	<i>Agastache scrophularifolia</i>	Purple Giant Hyssop	plug
1,060	<i>Artemisia ludoviciana</i>	Silver Sagebrush	plug
530	<i>Careopsis tripteris 'Gold Standard'</i>	'Gold Standard' Tall Tickseed	plug
1,590	<i>Doellingeria umbellata</i>	Flat-Topped Aster	plug
530	<i>Echinacea pallida</i>	Pale Purple Coneflower	plug
530	<i>Echinacea purpurea</i>	Purple Coneflower	plug
1,060	<i>Eupatorium maculatum</i>	Joe Pye Weed	plug
1,060	<i>Eupatorium perfoliatum</i>	Common Boneset	plug
1,060	<i>Helianthus divaricatus</i>	Woodland Sunflower	plug
1,060	<i>Helianthus strumosus</i>	Pale-Leaved Sunflower	plug
1,060	<i>Heliopsis helianthoides</i>	False Sunflower	plug
1,590	<i>Liatris spicata</i>	Dense Blazing Star	plug
1,060	<i>Monarda fistulosa</i>	Wild Bergamot	plug
1,590	<i>Penstemon digitalis</i>	Foxglove Beardtongue	plug
1,060	<i>Ratibida pinnata</i>	Grey-headed Coneflower	plug
530	<i>Silene regia</i>	Royal Catchfly	plug
1,590	<i>Silphium perfoliatum</i>	Cup Plant	plug
530	<i>Solidago caesia</i>	Bluestem Goldenrod	plug
1,060	<i>Solidago flexicaulis</i>	Zigzag Goldenrod	plug
1,590	<i>Symphytotrichum cordifolium</i>	Blue Wood Aster	plug
1,590	<i>Symphytotrichum laeve</i>	Smooth Aster	plug
530	<i>Symphytotrichum novae-angliae</i>	New England Aster	plug
1,060	<i>Thalictrum pubescens</i>	Tall Meadow Rue	plug
1,590	<i>Verbena hastata</i>	Blue Vervain	plug
530	<i>Vernonia noveboracensis</i>	New York Ironweed	plug
26,500	Subtotal Forbs		
Grasses, Sedges, Rushes			
2,650	<i>Carex bicknellii</i>	Copper-Shouldered Oval Sedge	plug
2,650	<i>Carex brevior</i>	Plains Oval Sedge	plug
2,650	<i>Carex crinita</i>	Fringed Sedge	plug
2,650	<i>Carex eburnea</i>	Bristle-leaf Sedge	plug
7,940	<i>Carex pensylvanica</i>	Oak Sedge	plug
5,290	<i>Carex rosea</i>	Rosy Sedge	plug
2,650	<i>Sporobolus heterolepis</i>	Prairie Dropseed	plug
26,480	Subtotal Grasses, Sedges, Rushes		
52,980	SUBTOTAL MATRIX TYPE 1 PERENNIALS		
Seed Mix			
QTY	Seed Mix		Size
25.2494KG	Seed Mix A - Refer to Sheet L532		Seed

MATRIX TYPE 2 (MA2): Short			
Forbs			
QTY	Botanical Name	Common Name	Size
270	<i>Achillea millefolium</i>	Common Yarrow	plug
270	<i>Anaphalis margaritacea</i>	Pearly Everlasting	plug
400	<i>Aquilegia canadensis</i>	Wild Columbine	plug
400	<i>Fragaria virginiana</i>	Virginia Strawberry	plug
400	<i>Geum triflorum</i>	Prairie Smoke	plug
270	<i>Helium autumnale</i>	Common Sneezeweed	plug
270	<i>Hieris aspera</i>	Rough Blazing Star	plug
270	<i>Liatris cylindracea</i>	Ontario Blazing Star	plug
140	<i>Lupinus perennis</i>	Sundial Lupine	plug
270	<i>Monarda punctata</i>	Spotted Beebalm	plug
400	<i>Oclemna acuminata</i>	Whorled Wood Aster	plug
140	<i>Oenothera fruticosa</i>	Sundrops	plug
270	<i>Penstemon hirsutus</i>	Hairy Beardtongue	plug
140	<i>Phlox divaricata</i>	Woodland Phlox	plug
270	<i>Polemonium reptans</i>	Jacob's Ladder	plug
270	<i>Pycnanthemum muticum</i>	Short-Toothed Mountain Mint	plug
140	<i>Silene caroliniana var. wherryi</i>	Wherry's Catchfly	plug
140	<i>Solidago caesia</i>	Bluestem Goldenrod	plug
270	<i>Solidago flexicaulis</i>	Zigzag Goldenrod	plug
140	<i>Solidago ptarmicoides</i>	Upland White Goldenrod	plug
140	<i>Solidago puberula</i>	Downy Goldenrod	plug
400	<i>Symphytotrichum ericoides</i>	Heath Aster	plug
400	<i>Symphytotrichum lateriflorum</i>	Calico Aster	plug
270	<i>Symphytotrichum oolentangiense</i>	Sky Blue Aster	plug
270	<i>Tradescantia ohioensis</i>	Ohio Spiderwort	plug
140	<i>Verbena stricta</i>	Hoary Vervain	plug
6,760	Subtotal Forbs		
Grasses, Sedges, Rushes			
530	<i>Carex bicknellii</i>	Copper-Shouldered Oval Sedge	plug
270	<i>Carex brevior</i>	Plains Oval Sedge	plug
270	<i>Carex crinita</i>	Fringed Sedge	plug
270	<i>Carex eburnea</i>	Bristle-leaf Sedge	plug
1,960	<i>Carex pensylvanica</i>	Oak Sedge	plug
660	<i>Carex rosea</i>	Rosy Sedge	plug
660	<i>Diarrhena obovata</i>	Beak Grass	plug
1,960	<i>Sporobolus heterolepis</i>	Prairie Dropseed	plug
6,580	Subtotal Grasses, Sedges, Rushes		
13,340	SUBTOTAL MATRIX TYPE 2 PERENNIALS		
Seed Mix			
QTY	Seed Mix		Size
6.2106KG	Seed Mix B - Refer to Sheet L532		Seed

Plant Schedules River Valley Parks

Entry Garden (EG)			
Forbs			
QTY	Botanical Name	Common Name	Size
0	<i>Agostache foeniculum</i> 'Blue Fortune'	'Blue Fortune' Anise Hyssop	1 Quart
0	<i>Alchemilla mollis</i>	Lady's Mantle	1 Quart
0	<i>Amsonia</i> 'Blue Ice'	Blue Ice Bluestar	1 gal.
0	<i>Amsonia hubrichtii</i>	Arkansas Bluestar	1 gal.
0	<i>Anemone canadensis</i>	Canada Anemone	1 Quart
0	<i>Anemone x hybrida</i> 'Honorine Jobert'	'Honorine Jobert' Japanese Anemone	1 gal.
0	<i>Angelica atropurpurea</i>	Great Angelica	1 gal.
0	<i>Aquilegia canadensis</i>	Wild Columbine	1 gal.
0	<i>Armeria maritima</i>	Sea Thrift	1 Quart
0	<i>Brunnera macrophylla</i>	Siberian Bugloss	1 gal.
0	<i>Callirhoe involucrata</i>	Purple Poppy Mallow	1 Quart
0	<i>Digitalis grandiflora</i>	Yellow Foxglove	1 Quart
0	<i>Eryngium yuccifolium</i>	Rattlesnake Master	1 Quart
0	<i>Eurybia macrophylla</i>	Large-leaved Aster	1 Quart
0	<i>Geranium macrorrhizum</i>	Bigroot Geranium	1 Quart
0	<i>Geranium maculatum</i>	Wild Geranium	1 Quart
0	<i>Geranium sanguineum</i> 'Max Frei'	'Max Frei' Bloody Cranesbill	1 Quart
0	<i>Gillenia trifoliata</i>	Bowman's Root	1 gal.
0	<i>Hemerocallis flava</i>	Yellow Daylily	1 gal.
0	<i>Hemerocallis fulva</i>	Common Daylily	1 Quart
0	<i>Heuchera villosa</i> 'Autumn Bride'	'Autumn Bride' Alum Root	1 Quart
0	<i>Iris cristata</i>	Dwarf Crested Iris	1 gal.
0	<i>Liriope spicata</i>	Creeping Liriope	1 Quart
0	<i>Packera obovata</i>	Round-Leaved Ragwort	1 Quart
0	<i>Penstemon digitalis</i>	Foxglove Beardtongue	1 gal.
0	<i>Phlox paniculata</i> 'Robert Poore'	'Robert Poore' Meadow Phlox	1 Quart
0	<i>Polemonium reptans</i>	Jacob's Ladder	1 gal.
0	<i>Sanguisorba menziesii</i>	Alaskan Burnet	1 gal.
0	<i>Scabiosa columbaria</i> 'Butterfly Blue'	'Butterfly Blue' Pincushion	1 Quart
0	<i>Scutellaria incana</i>	Hoary Skullcap	1 Quart
0	<i>Solidago sphacelata</i> 'Golden Fleece'	'Golden Fleece' Goldenrod	1 Quart
0	<i>Stachys monieri</i> 'Hummels'	'Hummels' Alpine Betony	1 Quart
0	<i>Symphotrichum ericoides</i> 'Snow Flurry'	'Snow Flurry' Heathy Aster	1 gal.
0	<i>Symphotrichum oblongifolium</i> 'October Skies'	'October Skies' Aromatic Aster	1 gal.
0	<i>Thalictrum aquilegifolium</i>	Columbine Meadow Rue	1 gal.
0	<i>Thalictrum x</i> 'Black Stockings'	'Black Stockings' Meadow Rue	1 gal.
0	<i>Tiarella cordifolia</i>	Foamflower	1 gal.
0	<i>Vernonia lettermannii</i> 'Iron Butterfly'	'Iron Butterfly' Ironweed	1 gal.
0	<i>Waldsteinia fragarioides</i>	Barren Strawberry	1 Quart
0	Subtotal Forbs		

Entry Garden (EG)			
Grasses, Sedges, Rushes			
0	<i>Carex laxiculmis</i> 'Bunny Blue'	'Bunny Blue' Sedge	plug
0	<i>Carex muskingumensis</i>	Palm Sedge	plug
0	<i>Carex plantaginea</i>	Plantain-Leaved Sedge	plug
0	<i>Carex platyphylla</i>	Silver Sedge	plug
0	<i>Eragrostis spectabilis</i>	Purple Love Grass	plug
0	<i>Molinia caerulea</i>	Purple Moor Grass	plug
0	<i>Sesleria autumnalis</i>	Autumn Moor Grass	plug
0	Subtotal Grasses, Sedges, Rushes		
0	SUBTOTAL ENTRY GARDEN PERENNIALS		

Plant Schedules River Valley Parks

HEDGEROW TYPE 1 (HR1): Dense Hedgerow			
Forbs			
QTY	Botanical Name	Common Name	Size
110	<i>Aquilegia canadensis</i>	Wild Columbine	plug
150	<i>Eurybia divaricata</i>	White Wood Aster	plug
150	<i>Geranium maculatum</i>	Wild Geranium	plug
130	<i>Gillenia trifoliata</i>	Bowman's Root	plug
130	<i>Phlox divaricata</i>	Blue Phlox	plug
150	<i>Polemonium reptans</i>	Jacob's Ladder	plug
80	<i>Solidago flexicaulis</i>	Zigzag Goldenrod	plug
80	<i>Symphotrichum novae-angliae</i>	New England Aster	plug
150	<i>Tiarella cordifolia</i>	Foamflower	plug
1,130	Subtotal Forbs		
Grasses, Sedges, Rushes			
180	<i>Carex bicknellii</i>	Bicknell's Sedge	plug
180	<i>Carex pennsylvanica</i>	Pennsylvania Sedge	plug
180	<i>Sporobolus cryptandrus</i>	Sand Cordgrass	plug
180	<i>Sporobolus heterolepis</i>	Prairie Dropseed	plug
720	Subtotal Grasses, Sedges, Rushes		
1,850	SUBTOTAL HEDGEROW TYPE 1 PERENNIALS		
Seed Mix			
QTY	Seed Mix	Size	
0.55KG	Seed Mix B - Refer to Sheet L532	Seed	

HEDGEROW TYPE 2 (HR2)			
Forbs			
QTY	Botanical Name	Common Name	Size
70	<i>Allium cernuum</i>	Nodding Onion	Bulb
70	<i>Anaphalis margaritacea</i>	Pearly Everlasting	plug
70	<i>Apocynum cannabinum</i>	Hemp Dogbane	plug
70	<i>Aquilegia brevistylis</i>	Blue Columbine	plug
70	<i>Aquilegia canadensis</i>	Red Columbine	plug
70	<i>Artemisia ludoviciana</i>	Silver Wormwood	plug
70	<i>Asclepias exaltata</i>	Poke Milkweed	plug
70	<i>Asclepias hirtella</i>	Tall Green Milkweed	plug
70	<i>Asclepias ovalifolia</i>	Oval-leaved Milkweed	plug
70	<i>Asclepias tuberosa</i>	Butterfly Milkweed	plug
90	<i>Baptisia tictaria</i>	Yellow Wild Indigo	plug
70	<i>Castilleja coccinea</i>	Scarlet Paintbrush	plug
90	<i>Careopsis lanceolata</i>	Lance-leaved Tickseed	plug
70	<i>Doellingeria umbellata</i>	Flat-top White Aster	plug
70	<i>Gillenia trifoliata</i>	Bowman's-root	plug
70	<i>Helopsis helianthoides</i>	False Sunflower	plug
70	<i>Liatris aspera</i>	Rough Blazing-star	plug
70	<i>Lilium michiganense</i>	Michigan Lily	Bulb
70	<i>Oenothera biennis</i>	Common Evening-primrose	plug
70	<i>Phlox pilosa</i>	Downy Phlox	plug
70	<i>Solidago caesia</i>	Blue-stemmed Goldenrod	plug
90	<i>Symphotrichum laeve</i>	Smooth Aster	plug
70	<i>Verbena simplex</i>	Narrow-leaved Vervain	plug
70	<i>Zizia aptera</i>	Heart-leaved Alexanders	plug
1,740	Subtotal Forbs		
Grasses, Sedges, Rushes			
110	<i>Carex bicknellii</i>	Bicknell's Sedge	plug
220	<i>Carex pennsylvanica</i>	Pennsylvania Sedge	plug
110	<i>Deschampsia flexuosa</i>	Crinkled Hair Grass	plug
110	<i>Sporobolus heterolepis</i>	Prairie Dropseed	plug
550	Subtotal Grasses, Sedges, Rushes		
2,290	SUBTOTAL HEDGEROW TYPE 2 PERENNIALS		
Seed Mix			
QTY	Seed Mix	Size	
0.66KG	Seed Mix B - Refer to Sheet L532	Seed	

Plant Schedules River Valley Parks

HEDGEROW TYPE 3 (HR3)			
Forbs			
QTY	Botanical Name	Common Name	Size
140	<i>Agastache foeniculum</i>	Blue Giant Hyssop	plug
140	<i>Agastache scrophulariifolia</i>	Purple Giant Hyssop	plug
140	<i>Asclepias syriaca</i>	Common Milkweed	plug
110	<i>Blephilia ciliata</i>	Downy Wood Mint	plug
110	<i>Dalea candida</i>	White Prairie-clover	plug
110	<i>Echinacea pallida</i>	Pale Purple Coneflower	plug
160	<i>Eupatorium perfoliatum</i>	Common Boneset	plug
160	<i>Eutrochium purpureum</i>	Purple Joe Pye Weed	plug
140	<i>Linum lewisii</i>	Wild Blue Flax	plug
110	<i>Sisyrinchium angustifolium</i>	Narrow-leaved Blue-eyed-grass	plug
110	<i>Solidago puberula</i>	Downy Goldenrod	plug
110	<i>Tradescantia ohimensis</i>	Ohio Spiderwort	plug
160	<i>Verbena hastata</i>	Blue Vervain	plug
1,700	Subtotal Forbs		
Grasses, Sedges, Rushes			
110	<i>Carex bicknellii</i>	Bicknell's Sedge	plug
220	<i>Carex pensylvanica</i>	Pennsylvania Sedge	plug
110	<i>Deschampsia flexuosa</i>	Crinkled Hair Grass	plug
110	<i>Sporobolus heterolepis</i>	Prairie Dropseed	plug
550	Subtotal Grasses, Sedges, Rushes		
2,250	SUBTOTAL HEDGEROW TYPE 3 PERENNIALS		
Seed Mix			
QTY	Seed Mix	Size	
0.671KG	Seed Mix B - Refer to Sheet L532	Seed	

HEDGEROW TYPE 4 (HR4)			
Forbs			
QTY	Botanical Name	Common Name	Size
40	<i>Anemone canadensis</i>	Canada Anemone	plug
40	<i>Anemone cylindrica</i>	Long-headed Anemone	plug
40	<i>Asclepias purpurascens</i>	Purple Milkweed	plug
40	<i>Astrogalus canadensis</i>	Canada Milk-vetch	plug
40	<i>Helenium autumnale</i>	Common Sneezeweed	plug
40	<i>Helianthus divaricatus</i>	Woodland Sunflower	plug
40	<i>Lespedeza capitata</i>	Round-headed Bush-clover	plug
40	<i>Lespedeza frutescens</i>	Violet Bush-clover	plug
40	<i>Liatrix cylindracea</i>	Slender Blazing-star	plug
40	<i>Monarda punctata</i>	Spotted Beebalm	plug
40	<i>Packera opovata</i>	Round-leaved Groundsel	plug
40	<i>Rudbeckia hirta</i>	Black-eyed Susan	plug
40	<i>Rudbeckia laciniata</i>	Cut-leaved Coneflower	plug
40	<i>Solidago nemoralis</i>	Grey Goldenrod	plug
40	<i>Symphotrichum ericoides</i>	White Heath Aster	plug
40	<i>Symphotrichum lateriflorum</i>	Calico Aster	plug
40	<i>Symphotrichum shortii</i>	Short's Aster	plug
40	<i>Thalictrum pubescens</i>	Tall Meadow Rue	plug
40	<i>Vernonia gigantea</i>	Giant Ironweed	plug
10	<i>Viola canadensis</i>	Canada Violet	plug
750	Subtotal Forbs		
Grasses, Sedges, Rushes			
50	<i>Carex bicknellii</i>	Bicknell's Sedge	plug
90	<i>Carex pensylvanica</i>	Pennsylvania Sedge	plug
50	<i>Deschampsia flexuosa</i>	Crinkled Hair Grass	plug
50	<i>Sporobolus heterolepis</i>	Prairie Dropseed	plug
240	Subtotal Grasses, Sedges, Rushes		
990	SUBTOTAL HEDGEROW TYPE 4 PERENNIALS		
Seed Mix			
QTY	Seed Mix	Size	
3.058KG	Seed Mix B - Refer to Sheet L532	Seed	

Plant Schedules River Valley Parks

FLOODPLAIN FOREST (FF)			
Forbs			
QTY	Botanical Name	Common Name	Size
30	<i>Amphicarpaea bracteata</i>	American Hog Peanut	plug
50	<i>Apocynum cannabinum</i>	Dogbane	plug
30	<i>Apios americana</i>	American Groundnut	plug
90	<i>Asclepias incarnata</i>	Swamp Milkweed	plug
50	<i>Asclepias purpurascens</i>	Purple Milkweed	plug
50	<i>Asclepias syriaca</i>	Common milkweed	plug
50	<i>Asclepias verticillata</i>	Whorled Milkweed	plug
50	<i>Aster novae-angliae</i>	New England Aster	plug
50	<i>Aquilegia canadensis</i>	Wild Columbine	plug
50	<i>Coreopsis lanceolata</i>	Lanceleaf Coreopsis	plug
50	<i>Coreopsis tripteris</i>	Tickseed	plug
50	<i>Fragaria virginiana</i>	Virginia Strawberry	plug
50	<i>Lilium michiganense</i>	Michigan Lily	Bulb
50	<i>Oenothera biennis</i>	Common Evening Primrose	plug
50	<i>Potentilla anserina</i>	Silverweed	plug
50	<i>Solidago gigantea</i>	Giant Goldenrod	plug
50	<i>Solidago flexicaulis</i>	Zigzag Goldenrod	plug
50	<i>Solidago rugosa</i>	Rough goldenrod	plug
90	<i>Symphyotrichum ericoides</i>	White Heath Aster	plug
90	<i>Symphyotrichum laeve</i>	Smooth Blue Aster	plug
50	<i>Thalictrum pubescens</i>	Tall Meadow Rue	plug
90	<i>Viola sororia</i>	Common Blue Violet	plug
1,220	Subtotal Forbs		

FLOODPLAIN FOREST (FF)			
Grasses, Sedges, Rushes			
50	<i>Andropogon gerardii</i>	Big Bluestem	plug
500	<i>Calamagrostis canadensis</i>	Blue-joint	plug
290	<i>Carex bicknellii</i>	Bicknell's Sedge	plug
90	<i>Carex intumescens</i>	Great Bladder Sedge	plug
90	<i>Carex lasiocarpa</i>	Lake sedge	plug
250	<i>Carex lupulina</i>	Hop sedge	plug
340	<i>Carex pennsylvanica</i>	Pennsylvania Sedge	plug
130	<i>Carex stipata</i>	Awlfruit Sedge	plug
130	<i>Carex vulpinoidea</i>	Fox Sedge	plug
90	<i>Elymus riparius</i>	Riverbank Wild Rye	plug
130	<i>Glyceria striata</i>	Fowl Mannagrass	plug
130	<i>Leersia oryzoides</i>	Rice Cutgrass	plug
420	<i>Panicum virgatum</i>	Switchgrass	plug
250	<i>Schizachyrium scoparium</i>	Little Bluestem	plug
210	<i>Spartina pectinata</i>	Prairie Cordgrass	plug
50	<i>Sporobolus cryptandrus</i>	Sand Dropseed	plug
50	<i>Sporobolus heterolepis</i>	Prairie Dropseed	plug
3,200	Subtotal Grasses, Sedges, Rushes		
4,420	SUBTOTAL FLOODPLAIN FOREST PERENNIALS		
Seed Mix			
QTY	Seed Mix	Size	
1.265KG	Custom Seed Mix C - Refer to Sheet 532	Seed	

Plant Schedules Promontory Park & Canoe Cove

Trees			
QTY	BOTANICAL NAME	COMMON NAME	SIZE
20	<i>Acer griseum</i>	Paperbark Maple	60 mm Cal.
73	<i>Acer saccharinum</i>	Silver Maple	60 mm Cal.
8	<i>Acer saccharum</i>	Sugar Maple	60 mm Cal.
32	<i>Acer x freemanii</i>	Freeman Maple	60 mm Cal.
143	<i>Alnus incana ssp. rugosa</i>	Speckled Alder	250cm ht.
78	<i>Betula papyrifera</i>	White Birch	20 mm Cal.
5	<i>Carpinus caroliniana</i>	American Hornbeam	50 mm Cal.
13	<i>Carya ovata</i>	Shagbark Hickory	20 mm Cal.
33	<i>Catalpa speciosa</i>	Northern Catalpa	60 mm Cal.
8	<i>Celtis occidentalis</i>	Hackberry	60 mm Cal.
8	<i>Cercis canadensis</i>	Redbud	50 mm Cal.
12	<i>Cladrastis kentukea</i>	Yellowwood	90 mm Cal.
10	<i>Cornus alternifolia</i>	Pagoda Dogwood	20 mm Cal.
34	<i>Cornus mas</i>	Cornelian Cherry	20 mm Cal.
13	<i>Cotinus obovatus</i>	Smoketree	200 cm Ht.
29	<i>Fagus grandifolia</i>	American Beech	20 mm Cal.
50	<i>Gleditsia triacanthos f. inermis</i> 'Skycole'	Skyline Honey Locust	60 mm Cal.
13	<i>Juniperus chinensis</i> 'Robusta Green'	Robusta Green Chinese Juniper	175 cm Ht.
90	<i>Juniperus virginiana</i>	Eastern Redcedar	175 cm Ht.
92	<i>Larix laricina</i>	American Larch	60 mm Cal.
12	<i>Ostrya virginiana</i>	Hophornbeam	50 mm Cal.
12	<i>Picea abies</i>	Norway Spruce	200 cm Ht.
21	<i>Pinus strobus</i>	White Pine	175 cm Ht.
7	<i>Platanus occidentalis</i>	Sycamore	60 mm Cal.
110	<i>Populus deltoides</i>	Eastern Cottonwood	60 mm Cal.
18	<i>Populus tremuloides</i>	Aspen	20 mm Cal.
21	<i>Prunus serotina</i>	Black Cherry	20 mm Cal.
28	<i>Prunus serotina</i>	Black Cherry	60 mm Cal.
25	<i>Quercus bicolor</i>	Swamp White Oak	60 mm Cal.
34	<i>Quercus macrocarpa</i>	Bur Oak	60 mm Cal.
20	<i>Quercus montana</i>	Chestnut Oak	60 mm Cal.
12	<i>Quercus robur</i> 'Fastigiata'	English Oak	60 mm Cal.
61	<i>Quercus rubra</i>	Red Oak	60 mm Cal.
51	<i>Salix babylonica</i>	Weeping Willow	60 mm Cal.

Trees			
101	<i>Thuja occidentalis</i>	Northern White Cedar	175 cm Ht.
15	<i>Thuja plicata</i> 'Green Giant'	Green Giant Arborvitae	175 cm Ht.
18	<i>Tilia americana</i>	American Linden	60mm Cal.
54	<i>Tilia americana</i> 'Redmond'	Redmond American Linden	60 mm Cal.
10	<i>Tsuga canadensis</i>	Eastern Hemlock	175 cm Ht.

Plant Schedules Promontory Park & Canoe Cove

Shrubs			
QTY	BOTANICAL NAME	COMMON NAME	HEIGHT
32	<i>Aronia arbutifolia</i> 'Brilliantissima'	Brilliantissima Red Chokeberry	125 cm Ht.
33	<i>Aronia melanocarpa</i>	Black Chokeberry	125 cm Ht.
74	<i>Cornus amomum</i>	Silky Dogwood	125 cm Ht.
285	<i>Cephalanthus occidentalis</i>	Buttonbush	80cm Ht.
50	<i>Cornus racemosa</i>	Gray Dogwood	125 cm Ht.
173	<i>Cornus sericea</i>	Red Twig Dogwood	125 cm Ht.
783	<i>Cornus sericea</i>	Red-osier Dogwood	80cm Ht.
77	<i>Fothergilla major</i>	Fothergilla	90 cm Ht.
37	<i>Hamamelis virginiana</i>	Common Witch Hazel	200 cm Ht.
14	<i>Hamamelis X intermedia</i> 'Diane'	Diane Hybrid Witch Hazel	200 cm Ht.
14	<i>Hamamelis X intermedia</i> 'Jelena'	Jelena Hybrid Witch Hazel	200 cm Ht.
43	<i>Lindera benzoin</i>	Spicebush	125 cm Ht.
249	<i>Myrica pensylvanica</i>	Bayberry	125 cm Ht.
106	<i>Myrica pensylvanica</i>	Bayberry	80cm Ht.
42	<i>Physocarpus opulifolius</i>	Common Ninebark	125 cm Ht.
52	<i>Prunus pumila</i>	Dward Sand Plum	125 cm Ht.
235	<i>Rhus aromatica</i>	Fragrant Sumac	125 cm Ht.
14	<i>Rhus copallinum</i>	Shining Sumac	125 cm Ht.
19	<i>Rhus typhina</i>	Staghorn Sumac	125 cm Ht.
37	<i>Ribes aureum</i>	Golden Currant	90 cm Ht.
215	<i>Rosa carolina</i>	Carolina Rose	90 cm Ht.
301	<i>Rubus odoratus</i>	Purple Flowering Raspberry	125 cm Ht.
187	<i>Salix discolor</i>	Pussy Willow	80cm Ht.
177	<i>Sambucus canadensis</i>	Common Elderberry	125 cm Ht.
137	<i>Symphoricarpos albus</i>	Snowberry	125 cm Ht.
13	<i>Viburnum carlesii</i>	Koreanspice Viburnum	200 cm Ht.
4	<i>Viburnum cassinoides</i>	Witherod Viburnum	125 cm Ht.
421	<i>Viburnum opulus ssp. trilobum</i>	Highbush Cranberry	80cm Ht.
17	<i>Viburnum plicatum</i> 'Shasta'	Shasta Doublefile Viburnum	200 cm Ht.
119	<i>Viburnum X rhytidophylloides</i> 'Alleghany'	Alleghany Lanatanaphyllum Viburnum	200 cm Ht.
21	<i>Viburnum X burkwoodii</i>	Burkwood Viburnum	200 cm Ht.
22	<i>Viburnum X burkwoodii</i> 'Mohawk'	Mohawk Burkwood Viburnum	200 cm Ht.

Plant Schedules Promontory Park & Canoe Cove

MATRIX TYPE 1 (MA1): TALL			
Forbs			
QTY	BOTANICAL NAME	COMMON NAME	SIZE
520	<i>Agastache scrophulariifolia</i>	Purple Giant Hyssop	Plug
520	<i>Artemisia ludoviciana</i>	Silver Sagebrush	Plug
260	<i>Coreopsis tripteris 'Gold Standard'</i>	'Gold Standard' Tall Tickseed	Plug
780	<i>Doellingeria umbellata</i>	Flat-Topped Aster	Plug
260	<i>Echinacea pallida</i>	Pale Purple Coneflower	Plug
260	<i>Echinacea purpurea</i>	Purple Coneflower	Plug
520	<i>Eupatorium maculatum</i>	Joe Pye Weed	Plug
520	<i>Eupatorium perfoliatum</i>	Common Boneset	Plug
520	<i>Helianthus divaricatus</i>	Woodland Sunflower	Plug
520	<i>Helianthus strumosus</i>	Pale-Leaved Sunflower	Plug
520	<i>Helopsis helianthoides</i>	False Sunflower	Plug
780	<i>Liatris spicata</i>	Dense Blazing Star	Plug
520	<i>Monarda fistulosa</i>	Wild Bergamot	Plug
780	<i>Penstemon digitalis</i>	Foxglove Beardtongue	Plug
520	<i>Ratibida pinnata</i>	Grey-headed Coneflower	Plug
260	<i>Silene regia</i>	Royal Catchfly	Plug
780	<i>Silphium perfoliatum</i>	Cup Plant	Plug
260	<i>Solidago caesia</i>	Bluestem Goldenrod	Plug
520	<i>Solidago flexicaulis</i>	Zigzag Goldenrod	Plug
780	<i>Symphyotrichum cordifolium</i>	Blue Wood Aster	Plug
780	<i>Symphyotrichum laeve</i>	Smooth Aster	Plug
260	<i>Symphyotrichum novae-angliae</i>	New England Aster	Plug
520	<i>Thalictrum pubescens</i>	Tall Meadow Rue	Plug
780	<i>Verbena hastata</i>	Blue Vervain	Plug
260	<i>Vernonia noveboracensis</i>	New York Ironweed	Plug
13,000	Subtotal Forbs		
Grasses, Sedges, Rushes			
1,300	<i>Carex bicknellii</i>	Copper-Shouldered Oval Sedge	Plug
1,300	<i>Carex brevior</i>	Plains Oval Sedge	Plug
1,300	<i>Carex crinita</i>	Fringed Sedge	Plug
1,300	<i>Carex eburnea</i>	Bristle-leaf Sedge	Plug
3,880	<i>Carex pensylvanica</i>	Oak Sedge	Plug
2,590	<i>Carex rosea</i>	Rosy Sedge	Plug
1,300	<i>Sporobolus heterolepis</i>	Prairie Dropseed	Plug
12,970	Subtotal Grasses, Sedges, Rushes		
25,970	SUBTOTAL MATRIX TYPE 1 PERENNIALS		
Seed Mix			
QTY	SEED MIX	SIZE	
12.342KG	Seed Mix A - Refer to Sheet L532	Seed	

MATRIX TYPE 2 (MA2): Short			
Forbs			
QTY	BOTANICAL NAME	COMMON NAME	SIZE
#REF!	<i>Achillea millefolium</i>	Common Yarrow	Plug
#REF!	<i>Anaphalis margaritacea</i>	Pearly Everlasting	Plug
#REF!	<i>Aquilegia canadensis</i>	Wild Columbine	Plug
1,180	<i>Fragaria virginiana</i>	Virginia Strawberry	Plug
1,180	<i>Geum triflorum</i>	Prairie Smoke	Plug
790	<i>Helenium autumnale</i>	Common Sneezeweed	Plug
790	<i>Liatris aspera</i>	Rough Blazing Star	Plug
790	<i>Liatris cylindracea</i>	Ontario Blazing Star	Plug
#REF!	<i>Lupinus perennis</i>	Sundial Lupine	Plug
790	<i>Monarda punctata</i>	Spotted Beebalm	Plug
1,180	<i>Diemena acuminatas</i>	Whorled Wood Aster	Plug
400	<i>Oenothera fruticosa</i>	Sundrops	Plug
790	<i>Penstemon hirsutus</i>	Hairy Beardtongue	Plug
400	<i>Phlox divaricata</i>	Woodland Phlox	Plug
790	<i>Polemonium reptans</i>	Jacob's Ladder	Plug
790	<i>Pycnanthemum muticum</i>	Short-Toothed Mountain Mint	Plug
400	<i>Silene caroliniana var. wherryi</i>	Wherry's Catchfly	Plug
400	<i>Solidago caesia</i>	Bluestem Goldenrod	Plug
790	<i>Solidago flexicaulis</i>	Zigzag Goldenrod	Plug
400	<i>Solidago ptarmicoides</i>	Upland White Goldenrod	Plug
400	<i>Solidago puberula</i>	Downy Goldenrod	Plug
1,180	<i>Symphyotrichum ericoides</i>	Heath Aster	Plug
1,180	<i>Symphyotrichum lateriflorum</i>	Calico Aster	Plug
790	<i>Symphyotrichum oolentangiense</i>	Sky Blue Aster	Plug
790	<i>Tradescantia ohlensis</i>	Ohio Spiderwort	Plug
400	<i>Verbena stricta</i>	Hoary Vervain	Plug
#REF!	Subtotal Forbs		
Grasses, Sedges, Rushes			
#REF!	<i>Carex bicknellii</i>	Copper-Shouldered Oval Sedge	Plug
#REF!	<i>Carex brevior</i>	Plains Oval Sedge	Plug
#REF!	<i>Carex crinita</i>	Fringed Sedge	Plug
#REF!	<i>Carex eburnea</i>	Bristle-leaf Sedge	Plug
#REF!	<i>Carex pensylvanica</i>	Oak Sedge	Plug
#REF!	<i>Carex rosea</i>	Rosy Sedge	Plug
#REF!	<i>Diarrhena obovata</i>	Beak Grass	Plug
#REF!	<i>Sporobolus heterolepis</i>	Prairie Dropseed	Plug
#REF!	Subtotal Grasses, Sedges, Rushes		
#REF!	SUBTOTAL MATRIX TYPE 2 PERENNIALS		
Seed Mix			
QTY	SEED MIX	SIZE	
14.8104KG	Seed Mix B - Refer to Sheet L532	Seed	

Plant Schedules Promontory Park & Canoe Cove

Entry Garden (EG)			
Forbs			
QTY	BOTANICAL NAME	COMMON NAME	SIZE
150	<i>Agastache foeniculum</i> 'Blue Fortune'	'Blue Fortune' Anise Hyssop	1 Qt. Cont.
290	<i>Alchemilla mollis</i>	Lady's Mantle	1 Qt. Cont.
290	<i>Amsania</i> 'Blue Ice'	Blue Ice Bluestar	#1 Cont.
430	<i>Amsania hubrichtii</i>	Arkansas Bluestar	#1 Cont.
150	<i>Anemone canadensis</i>	Canada Anemone	1 Qt. Cont.
290	<i>Anemone x hybrida</i> 'Honorine Jobert'	'Honorine Jobert' Japanese Anemone	#1 Cont.
150	<i>Angelica atropurpurea</i>	Great Angelica	#1 Cont.
580	<i>Aquilegia canadensis</i>	Wild Columbine	#1 Cont.
150	<i>Brunnera macrophylla</i>	Siberian Bugloss	#1 Cont.
150	<i>Callirhoe involucrata</i>	Purple Poppy Mallow	1 Qt. Cont.
150	<i>Digitalis grandiflora</i>	Yellow Foxglove	1 Qt. Cont.
150	<i>Eryngium yuccifolium</i>	Rattlesnake Master	1 Qt. Cont.
150	<i>Eurybia macrophylla</i>	Large-leaved Aster	1 Qt. Cont.
290	<i>Geranium macrorrhizum</i>	Bigroot Geranium	1 Qt. Cont.
150	<i>Geranium maculatum</i>	Wild Geranium	1 Qt. Cont.
150	<i>Geranium sanguineum</i> 'Max Frei'	'Max Frei' Bloody Cranesbill	1 Qt. Cont.
580	<i>Gillenia trifoliata</i>	Bowman's Root	#1 Cont.
290	<i>Hemerocallis filioasphodelus</i>	Yellow Daylily	#1 Cont.
290	<i>Hemerocallis fulva</i>	Common Daylily	1 Qt. Cont.
430	<i>Heuchera villosa</i> 'Autumn Bride'	'Autumn Bride' Alum Root	1 Qt. Cont.
290	<i>Iris cristata</i>	Dwarf Crested Iris	#1 Cont.
580	<i>Itea virginica</i>	Virginia Sweetspire	#2 Cont., 45 cm Ht.
290	<i>Liriope spicata</i>	Creeping Liriope	1 Qt. Cont.
290	<i>Packera obovata</i>	Round-Leaved Ragwort	1 Qt. Cont.
290	<i>Penstemon digitalis</i>	Foxglove Beardtongue	#1 Cont.
290	<i>Phlox paniculata</i> 'Robert Poore'	'Robert Poore' Meadow Phlox	1 Qt. Cont.
150	<i>Polemonium reptans</i>	Jacob's Ladder	#1 Cont.
150	<i>Rhus aromatica</i> 'Gro-Low'	Gro-Low Sumac	#2 Cont., 45 cm Ht.
150	<i>Sanguisorba menziesii</i>	Alaskan Burpet	#1 Cont.
150	<i>Scabiosa columbaria</i> 'Butterfly Blue'	'Butterfly Blue' Pincushion	1 Qt. Cont.
150	<i>Scutellaria incana</i>	Hoary Skullcap	1 Qt. Cont.
150	<i>Solidago sphacelata</i> 'Golden Fleece'	'Golden Fleece' Goldenrod	1 Qt. Cont.
150	<i>Stachys monieri</i> 'Hummelo'	'Hummelo' Alpine Betony	1 Qt. Cont.
580	<i>Symphoricarpos orbiculatus</i>	Coralberry	#2 Cont., 45 cm Ht.
290	<i>Symphotrichum ericoides</i> 'Snow Flurry'	'Snow Flurry' Heath Aster	#1 Cont.
290	<i>Symphotrichum oblongifolium</i> 'October Skies'	'October Skies' Aromatic Aster	#1 Cont.
290	<i>Thalictrum aquilegifolium</i>	Columbine Meadow Rue	#1 Cont.
150	<i>Thalictrum x</i> 'Black Stockings'	'Black Stockings' Meadow Rue	#1 Cont.
580	<i>Tiarella cordifolia</i>	Foamflower	#1 Cont.

Entry Garden (EG)			
150	<i>Vernonia lettermannii</i> 'Iron Butterfly'	'Iron Butterfly' Ironweed	#1 Cont.
430	<i>Waldsteinia fragarioides</i>	Barren Strawberry	1 Qt. Cont.
580	<i>Xanthorhiza simplicissima</i>	Yellowroot	1 Qt. Cont.
11,680	Subtotal Forbs		
Grasses, Sedges, Rushes			
430	<i>Carex laxiculmis</i> 'Bunny Blue'	'Bunny Blue' Sedge	Plug
290	<i>Carex muskingumensis</i>	Palm Sedge	Plug
580	<i>Carex plantaginea</i>	Plantain-Leaved Sedge	Plug
290	<i>Carex platyphylla</i>	Silver Sedge	Plug
290	<i>Eragrostis spectabilis</i>	Purple Love Grass	Plug
290	<i>Molinia caerulea</i>	Purple Moor Grass	Plug
720	<i>Sesleria autumnalis</i>	Autumn Moor Grass	Plug
2,890	Subtotal Grasses, Sedges, Rushes		
14,570	SUBTOTAL ENTRY GARDEN PERENNIALS		

Plant Schedules Promontory Park & Canoe Cove

HEDGEROW TYPE 1 (HR1): Dense Hedgerow			
Forbs			
QTY	BOTANICAL NAME	COMMON NAME	SIZE
190	<i>Aquilegia canadensis</i>	Wild Columbine	Plug
260	<i>Eurybia divaricata</i>	White Wood Aster	Plug
260	<i>Geranium maculatum</i>	Wild Geranium	Plug
220	<i>Gillenia trifoliata</i>	Bowman's Root	Plug
220	<i>Phlox divaricata</i>	Blue Phlox	Plug
260	<i>Polemonium reptans</i>	Jacob's Ladder	Plug
130	<i>Solidago flexicaulis</i>	Zigzag Goldenrod	Plug
130	<i>Symphotrichum novae-angliae</i>	New England Aster	Plug
260	<i>Tiarelia cordifolia</i>	Foamflower	Plug
1,930	Subtotal Forbs		
Grasses, Sedges, Rushes			
320	<i>Carex bicknellii</i>	Bicknell's Sedge	Plug
320	<i>Carex pensylvanica</i>	Pennsylvania Sedge	Plug
320	<i>Sporobolus cryptandrus</i>	Sand Cordgrass	Plug
320	<i>Sporobolus heterolepis</i>	Prairie Dropseed	Plug
1,280	Subtotal Grasses, Sedges, Rushes		
3,210	SUBTOTAL HEDGEROW TYPE 1 PERENNIALS		
Seed Mix			
QTY	SEED MIX	SIZE	
0.9592KG	Seed Mix B - Refer to Sheet L532	Seed	

HEDGEROW TYPE 2 (HR2)			
Forbs			
QTY	BOTANICAL NAME	COMMON NAME	SIZE
70	<i>Allium cernuum</i>	Nodding Onion	Bulb
70	<i>Anaphalis margaritacea</i>	Pearly Everlasting	Plug
70	<i>Apocynum cannabinum</i>	Hemp Dogbane	Plug
70	<i>Aquilegia brevistyla</i>	Blue Columbine	Plug
70	<i>Aquilegia canadensis</i>	Red Columbine	Plug
70	<i>Artemisia ludoviciana</i>	Silver Wormwood	Plug
70	<i>Asclepias exaltata</i>	Poke Milkweed	Plug
70	<i>Asclepias hirtella</i>	Tall Green Milkweed	Plug
70	<i>Asclepias ovalifolia</i>	Oval-leaved Milkweed	Plug
70	<i>Asclepias tuberosa</i>	Butterfly Milkweed	Plug
90	<i>Baptisia tricolor</i>	Yellow Wild Indigo	Plug
70	<i>Castilleja coccinea</i>	Scarlet Paintbrush	Plug
90	<i>Careopsis lanceolata</i>	Lance-leaved Tickseed	Plug
70	<i>Doellingeria umbellata</i>	Flat-top White Aster	Plug
70	<i>Gillenia trifoliata</i>	Bowman's-root	Plug
70	<i>Helianthus helianthoides</i>	False Sunflower	Plug
70	<i>Liatris aspera</i>	Rough Blazing-star	Plug
70	<i>Lilium michiganense</i>	Michigan Lily	Bulb
70	<i>Oenothera biennis</i>	Common Evening-primrose	Plug
70	<i>Phlox pilosa</i>	Downy Phlox	Plug
70	<i>Solidago coesia</i>	Blue-stemmed Goldenrod	Plug
90	<i>Symphotrichum laeve</i>	Smooth Aster	Plug
70	<i>Verbena simplex</i>	Narrow-leaved Vervain	Plug
70	<i>Zizia alptera</i>	Heart-leaved Alexanders	Plug
1,740	Subtotal Forbs		
Grasses, Sedges, Rushes			
110	<i>Carex bicknellii</i>	Bicknell's Sedge	Plug
220	<i>Carex pensylvanica</i>	Pennsylvania Sedge	Plug
110	<i>Deschampsia flexuosa</i>	Crinkled Hair Grass	Plug
110	<i>Sporobolus heterolepis</i>	Prairie Dropseed	Plug
550	Subtotal Grasses, Sedges, Rushes		
2,290	SUBTOTAL HEDGEROW TYPE 2 PERENNIALS		
Seed Mix			
QTY	SEED MIX	SIZE	
0.6512KG	Seed Mix B - Refer to Sheet L532	Seed	

Plant Schedules Promontory Park & Canoe Cove

HEDGEROW TYPE 3 (HR3)			
Forbs			
QTY	BOTANICAL NAME	COMMON NAME	SIZE
170	<i>Agastache foeniculum</i>	Blue Giant Hyssop	Plug
170	<i>Agastache scrophularifolia</i>	Purple Giant Hyssop	Plug
170	<i>Asclepias syriaca</i>	Common Milkweed	Plug
140	<i>Blephilia ciliata</i>	Dawny Wood Mint	Plug
140	<i>Dalea candida</i>	White Prairie-clover	Plug
140	<i>Echinacea pallida</i>	Pale Purple Coneflower	Plug
200	<i>Eupatorium perfoliatum</i>	Common Boneset	Plug
200	<i>Eutrachium purpureum</i>	Purple Joe Pye Weed	Plug
170	<i>Linum lewisii</i>	Wild Blue Flax	Plug
140	<i>Sisyrinchium angustifolium</i>	Narrow-leaved Blue-eyed-grass	Plug
140	<i>Solidago puberula</i>	Dawny Goldenrod	Plug
140	<i>Tradescantia ohioensis</i>	Ohio Spiderwort	Plug
200	<i>Verbena hastata</i>	Blue Vervain	Plug
2,120	Subtotal Forbs		
Grasses, Sedges, Rushes			
140	<i>Carex bicknellii</i>	Bicknell's Sedge	Plug
280	<i>Carex pensylvanica</i>	Pennsylvania Sedge	Plug
140	<i>Deschampsia flexuosa</i>	Crinkled Hair Grass	Plug
140	<i>Sporobolus heterolepis</i>	Prairie Dropseed	Plug
700	Subtotal Grasses, Sedges, Rushes		
2,820	SUBTOTAL HEDGEROW TYPE 3 PERENNIALS		
Seed Mix			
QTY	SEED MIX	SIZE	
0.8558KG	Seed Mix B - Refer to Sheet L532	Seed	

HEDGEROW TYPE 4 (HR4)			
Forbs			
QTY	BOTANICAL NAME	COMMON NAME	SIZE
40	<i>Anemone canadensis</i>	Canada Anemone	Plug
40	<i>Anemone cylindrica</i>	Long-headed Anemone	Plug
40	<i>Asclepias purpurascens</i>	Purple Milkweed	Plug
40	<i>Astragalus canadensis</i>	Canada Milk-wetch	Plug
40	<i>Helenium autumnale</i>	Common Sneezeweed	Plug
40	<i>Helianthus divaricatus</i>	Woodland Sunflower	Plug
40	<i>Lespedeza capitata</i>	Round-headed Bush-clover	Plug
40	<i>Lespedeza frutescens</i>	Violet Bush-clover	Plug
40	<i>Liatris cylindracea</i>	Slender Blazing star	Plug
40	<i>Monarda punctata</i>	Spotted Beebalm	Plug
40	<i>Packera bobavata</i>	Round-leaved Groundsel	Plug
20	<i>Rudbeckia hirta</i>	Black-eyed Susan	Plug
40	<i>Rudbeckia laciniata</i>	Cut-leaved Coneflower	Plug
40	<i>Solidago nemoralis</i>	Grey Goldenrod	Plug
40	<i>Symphotrichum ericoides</i>	White Heath Aster	Plug
40	<i>Symphotrichum lateriflorum</i>	Calico Aster	Plug
40	<i>Symphotrichum shortii</i>	Short's Aster	Plug
40	<i>Thalictrum pubescens</i>	Tall Meadow Rue	Plug
40	<i>Vernonia gigantea</i>	Giant Ironweed	Plug
10	<i>Viola canadensis</i>	Canada Violet	Plug
750	Subtotal Forbs		
Grasses, Sedges, Rushes			
50	<i>Carex bicknellii</i>	Bicknell's Sedge	Plug
90	<i>Carex pensylvanica</i>	Pennsylvania Sedge	Plug
50	<i>Deschampsia flexuosa</i>	Crinkled Hair Grass	Plug
50	<i>Sporobolus heterolepis</i>	Prairie Dropseed	Plug
240	Subtotal Grasses, Sedges, Rushes		
990	SUBTOTAL HEDGEROW TYPE 4 PERENNIALS		
Seed Mix			
QTY	SEED MIX	SIZE	
3.058KG	Seed Mix B - Refer to Sheet L532	Seed	

Plant Schedules Promontory Park & Canoe Cove

Meadow Marsh (MM)			
Forbs			
QTY	Botanical Name	Common Name	Size
380	<i>Asclepias incarnata</i>	Swamp Milkweed	plug
80	<i>Asclepias purpurascens</i>	Purple Milkweed	plug
300	<i>Asclepias syriaca</i>	Common milkweed	plug
300	<i>Aster novae-angliae</i>	New England Aster	plug
150	<i>Chelone glabra</i>	White Turtlehead	plug
80	<i>Doellingeria umbellata</i>	Flat-Topped White Aster	plug
300	<i>Eupatorium perfoliatum</i>	Boneset	plug
230	<i>Eupatorium maculatum</i>	Joe pye-weed	plug
150	<i>Helianthus giganteus</i>	Giant Sunflower	plug
80	<i>Liatris aspera</i>	Blazing Star	plug
40	<i>Lycopus americanus</i>	Bugleweed	plug
80	<i>Mentha canadensis</i>	Wild Mint	plug
150	<i>Mimulus ringens</i>	Monkeyflower	plug
150	<i>Monarda didyma</i>	Beebalm	plug
150	<i>Monarda fistulosa</i>	Wild Bergamot	plug
150	<i>Onoclea sensibilis</i>	Sensitive Fern	plug
80	<i>Scrophularia marilandica</i>	Figwort	plug
150	<i>Symphoricarum lanceolatum</i>	White Panicle Aster	plug
300	<i>Symphoricarum puniceum</i>	Swamp Aster	plug
80	<i>Thelypteris palustris pubescens</i>	Marsh Fern	plug
380	<i>Verbena hastata</i>	Blue Vervain	plug
3,760	Subtotal Forbs		
Grasses, Sedges, Rushes			
150	<i>Alopecurus aequalis</i>	Foxtail	plug
900	<i>Calamagrostis canadensis</i>	Blue-joint	plug
380	<i>Carex bebbii</i>	Bebb's Sedge	plug
600	<i>Carex comosa</i>	Bottlebrush sedge	plug
600	<i>Carex hystericina</i>	Porcupine sedge	plug
680	<i>Carex lacustris</i>	Lake sedge	plug
600	<i>Carex rostrata</i>	Beaked sedge	plug
680	<i>Carex stricta</i>	Tussock sedge	plug
230	<i>Cyperus dianthus</i>	Umbrella flatsedge	plug
680	<i>Eleocharis obtusa</i>	Blunt spike rush	plug
300	<i>Elymus canadensis</i>	Canada Wild Rye	plug
300	<i>Elymus riparius</i>	Riverbank Wild rye	plug
150	<i>Glyceria canadensis</i>	Mana grass	plug
450	<i>Glyceria grandis</i>	American mannagrass	plug
450	<i>Glyceria striata</i>	Fowl mannagrass	plug
150	<i>Juncus balticus</i>	Baltic Rush	plug
150	<i>Juncus torreyi</i>	Torrey's Rush	plug

Meadow Marsh (MM)			
450	<i>Leersia oryzoides</i>	Rice Cutgrass	plug
80	<i>Muhlenbergia mexicana</i>	Mexican Muhly Grass	plug
680	<i>Panicum virgatum</i>	Switchgrass	plug
450	<i>Poa palustris</i>	Fowl bluegrass	plug
1,340	<i>Scirpus atrovirens</i>	Green bulrush	plug
1,340	<i>Scirpus cyperinus</i>	Woolgrass	plug
1,340	<i>Spartina pectinata</i>	Prairie cordgrass	plug
13,130	Subtotal Grasses, Sedges, Rushes		
16,890	SUBTOTAL MEADOW MARSH PERENNIALS		
Seed Mix			
QTY	Seed Mix	Size	
4.587KG	Custom Seed Mix C - Refer to Sheet 532	Seed	

Seed Mixes

CUSTOM SEED MIX A (MA1)			
Forbs			
Mix %	Botanical Name	Common Name	Size
1.5%	<i>Ageratina altissima</i>	White Snakeroot	Seed
2.0%	<i>Lespedeza capitata</i>	Round-Headed Bush-Clover	Seed
2.0%	<i>Helenium autumnale</i>	Common Sneezeweed	Seed
1.5%	<i>Symphotrichum lateriflorum</i>	Calico Aster	Seed
1.5%	<i>Symphotrichum araphyllum</i>	Arrow-Leaved Aster	Seed
1.5%	<i>Verbena stricta</i>	Hoary Vervain	Seed
10.0%	Percentage of Forbs in Mix		
Grasses			
15.0%	<i>Andropogon gerardii</i>	Big Bluestem	Seed
15.0%	<i>Bromus pubescens</i>	Canada Brome	Seed
25.0%	<i>Elymus virginicus</i>	Virginia Wild Rye	Seed
20.0%	<i>Panicum virgatum</i>	Switchgrass	Seed
15.0%	<i>Sorghastrum nutans</i>	Indian Grass	Seed
90.0%	Percentage of Grasses, Sedges, Rushes in Mix		
100.0%	TOTAL PERCENTAGE		

CUSTOM SEED MIX B (MA2, HR1, HR2, HR3, HR4)			
Forbs			
Mix %	Botanical Name	Common Name	Size
5.0%	<i>Erigeron pulchellus</i>	Robin's Fleabane	Seed
1.5%	<i>Penstemon digitalis</i>	Foxglove Beardtongue	Seed
1.5%	<i>Penstemon hirsutus</i>	Hairy Beardtongue	Seed
2.0%	<i>Solidago flexicaulis</i>	Zizag Goldenrod	Seed
10.0%	Percentage of Herbaceous Perennials in Mix		
Grasses			
10.0%	<i>Bouteloua curtipendula</i>	Sideoats Grama	Seed
15.0%	<i>Bromus pubescens</i>	Canada Brome	Seed
15.0%	<i>Elymus virginicus</i>	Virginia Wild Rye	Seed
20.0%	<i>Elymus hystrix</i>	Bottlebrush Grass	Seed
20.0%	<i>Schizachyrium scoparium</i>	Little Bluestem	Seed
10.0%	<i>Sporobolus heterolepis</i>	Prairie Dropseed	Seed
90.0%	Percentage of Grasses, Sedges, Rushes in Mix		
100.0%	TOTAL PERCENTAGE		

CUSTOM SEED MIX C (FF)			
Forbs			
Mix %	Botanical Name	Common Name	Size
1.0%	<i>Aquilegia canadensis</i>	Wild Columbine	Seed
0.8%	<i>Asclepias incarnata</i>	Swamp Milkweed	Seed
1.5%	<i>Eupatorium maculatum</i>	Joe Pye Weed	Seed
1.0%	<i>Monarda fistulosa</i>	Wild Bergamot	Seed
1.3%	<i>Denathera biennis</i>	Common Evening Primrose	Seed
0.8%	<i>Penstemon hirsutus</i>	Hairy Beardtongue	Seed
0.8%	<i>Persicaria pensylvanica</i>	Pennsylvania Smartweed	Seed
1.8%	<i>Rudbeckia hirta</i>	Black-eyed Susan	Seed
1.0%	<i>Solidago flexicaulis</i>	Zizag Goldenrod	Seed
1.0%	<i>Solidago ptarmicoides</i>	Upland White Goldenrod	Seed
0.8%	<i>Solidago rugosa</i>	Rough Goldenrod	Seed
0.5%	<i>Symphotrichum ericoides</i>	White Heath Aster	Seed
1.5%	<i>Symphotrichum laeve</i>	Smooth Blue Aster	Seed
1.3%	<i>Symphotrichum puniceum</i>	Swamp Aster	Seed
0.8%	<i>Verbena hastata</i>	Blue Vervain	Seed
15.5%	Percentage of Herbaceous Perennials in Mix		
Grasses, Sedges			
33.5%	<i>Avena sativa</i>	Common Oats	Seed
0.8%	<i>Carex bebbii</i>	Bebb's sedge	Seed
0.8%	<i>Carex crinita</i>	Fringed sedge	Seed
1.0%	<i>Carex vulpinoidea</i>	Fox sedge	Seed
3.0%	<i>Elymus canadensis</i>	Canada Wild Rye	Seed
1.5%	<i>Elymus trachycaulus</i>	Slender Wheat Grass	Seed
5.0%	<i>Elymus virginicus</i>	Virginia Wildrye	Seed
33.5%	<i>Panicum millaceum</i>	Proso Millet	Seed
1.5%	<i>Poa palustris</i>	Fowl Bluegrass	Seed
1.5%	<i>Schizachyrium scoparium</i>	Little Bluestem	Seed
1.0%	<i>Sorghastrum nutans</i>	Indian Grass	Seed
1.5%	<i>Sporobolus heterolepis</i>	Prairie Dropseed	Seed
84.5%	Percentage of Grasses, Sedges, Rushes in Mix		
100.0%	TOTAL PERCENTAGE		