MCPRA
MANOTICK CENTENNIAL PARK

PATHWAY ENHANCEMENT PROJECT

JUNE 2023

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INTRODUCTION

Ruhland & Associates Ltd. have been retained to review the pathway systems within Centennial Park and connections to the wider neighbourhood. Site visits were undertaken in April and May of 2023 to assess the conditions of the existing pathways.

Pathways and entrances were reviewed in terms of:

- Accessibility requirements
- Condition,
- Drainage
- Ease of movement

Possible additional pathway connections were reviewed in terms of:

- Priority for connections and community linkages
- Ease of construction / impact on existing amenities and vegetation
- Accessibility requirements

JUNE 2023

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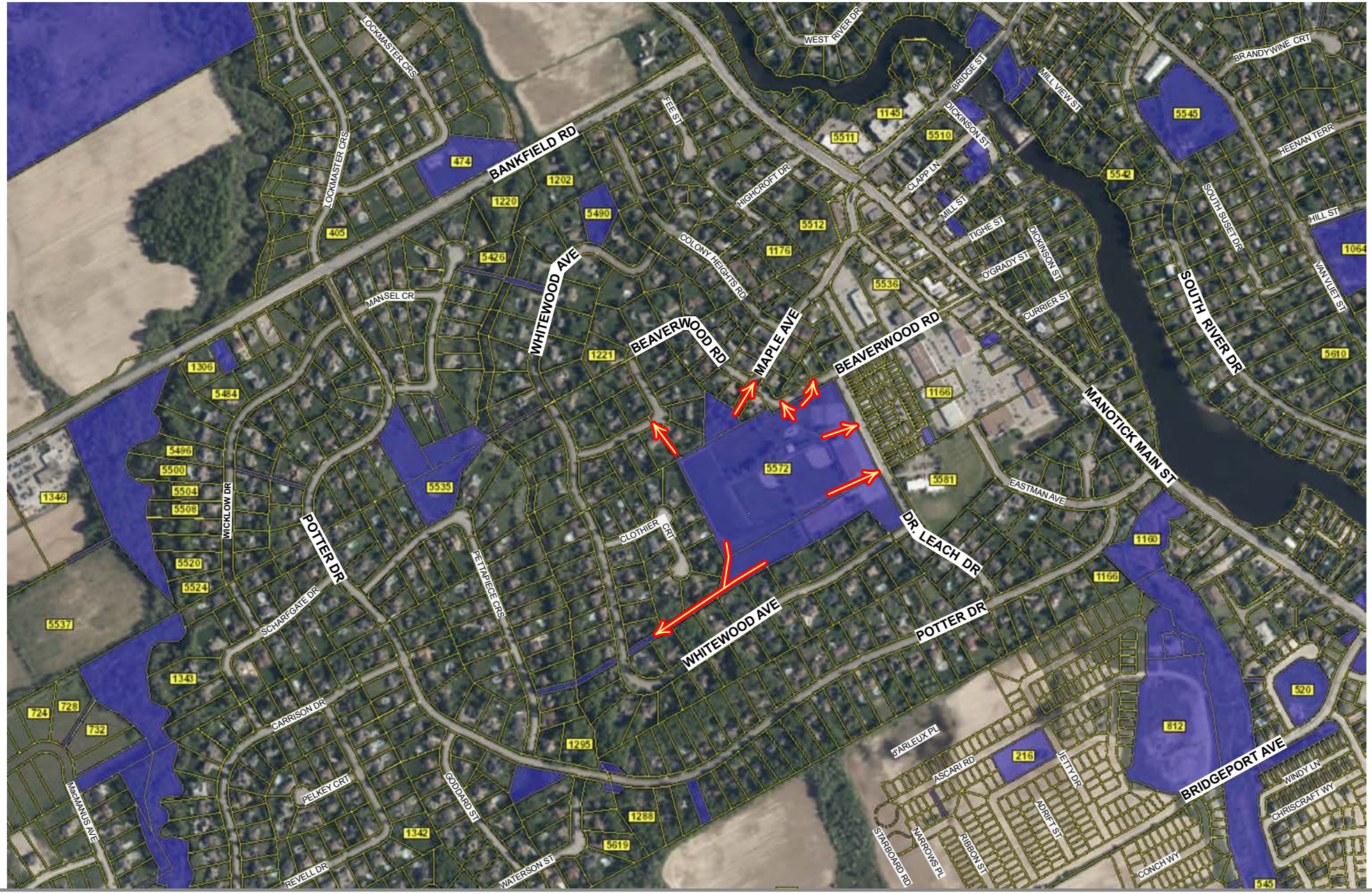
INTRODUCTION

Definitions:

- Accessible: Meets the Ontario legislation for accessibility (AODA – Accessibility for Ontarions with Disabilities Act). Note that not all pathways need to meet all requirements, but upgrades should meet the minimum.
- Pathways: Existing routes for pedestrian travel, surfaced with wither stonedust (small limestone chips compacted for a hard travelling surface) or asphalt.
- Swales: Linear strip to collect and carry water for drainage similar to a ditch but with more gentle side slopes.
- Culverts: Underground pipe to carry water underneath a pathway or roadway, can be steel or PVC. Connects swales on either side of the pathway.
- Slope: Gradient along a surface along a path of travel, in this case pathways or swales. Cross slope refers to the gradient across a pathway.
- Erosion: Rivulets along or across pathways caused by water flow, heavy rains, flooding.



MANOTICK CENTENNIAL PARK - PATHWAY UPGRADES

Dr Leach Drive, Manotick

CONTEXTUAL PLAN

0 100 200 300 400 500 m

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landscape architecture + urban design + site planning

JUNE 2023

INVENTORY OF PARK

An inventory was undertaken in April and May reviewing pathways, overall surface drainage including culverts and swales. Pathway conditions are categorized as good, fair, poor and very poor.

Pathways - Good Condition:

- Pathways surfacing with no unevenness (asphalt or stonedust)
- No low spots or wet areas
- No erosion,
- Good width and definition (greater than 1.5 metres in width)

Pathways - Fair Condition:

- Pathways surfacing has some unevenness, pits or low points
- Drainage evident with good adjacent swales
- No erosion,
- Good width and definition (greater than 1.5 metres in width)

INVENTORY OF PARK

An inventory was undertaken in April and May reviewing pathways, overall surface drainage including culverts and swales. Pathway conditions are categorized as good, fair, poor and very poor.

Pathways - Poor Condition:

- Pathways with uneven and eroded surfacing, loss of surface material
- Poor drainage and low points
- Edges are not well defined
- Asphalt surfacing where the asphalt has some cracks

Pathways – Very Poor Condition:

- Pathways with uneven and eroded surfacing, loss of surfacing and/or silted up.
- No drainage and large low areas, no visible means of surface drainage at or around the pathways.
- Edges are not defined
- Erosion along length or across the pathway.
- Asphalt surfacing where the asphalt has cracked and broken with uneven edges, potholes.

INVENTORY OF PARK

An inventory was undertaken in April and May reviewing pathways, overall surface drainage including culverts and swales. Pathway conditions are categorized as good, fair, poor and very poor.

Drainage on and around pathways reviewed indicating low spots, culverts, and swales.

Low spots(reviewed with these aspects):

- Is the area draining.
- Are there adjacent well defined swales
- Are there culverts to help drain across pathway

Culverts (reviewed with these aspects):

- Culvert exposed at pathway crossing.
- Water is draining at culvert.

Swales (reviewed with these aspects):

- Well defined with sides and draining (slopes).
- Water is draining at culvert.

Manotick Pathways Inventory Notes
April 14, 2023

1 Entrance at Beaverwood Road: Small section of asphalt at road - in poor shape, not accessible. Bollards in poor shape.

2 Stonedust path 1.2-1.5 m wide upgraded here, in fairly good shape.

3 Erosion down path and at path intersection (low spot / not draining at intersection).

4 Very low and wet area (not draining).

5 Narrow path, shallow swale at property line (not draining).

6 Culvert at bend in path. Sump pump from adjacent house outlets here. Granular swale at culvert and extends south. Path ±900mm wide.

7 Swale overflows onto pathway.

8 Box end type drain - blocked or no slope? Culvert exposed on path, ends into Catch Basin. Water is not flowing.

9 Entrance at Beaverwood Road (west): Small section of asphalt at road - in poor shape, ±1.0 metre in width.

10 Section very wet, still snow here where most other places has melt. Swale not well defined, not draining. Lowest point at south end.

11 Low point and wet at bend in path, no drainage

12 2 culverts, both exposed, path uneven.

13 Low spot at bench.

14 Path connection to parking, culvert at swale. Area is not well defined with poor surfacing at parking lot connection.

15 Large low area behind addition – across pathway. Ground very uneven.

16 Broken asphalt, uneven ground at path junction.

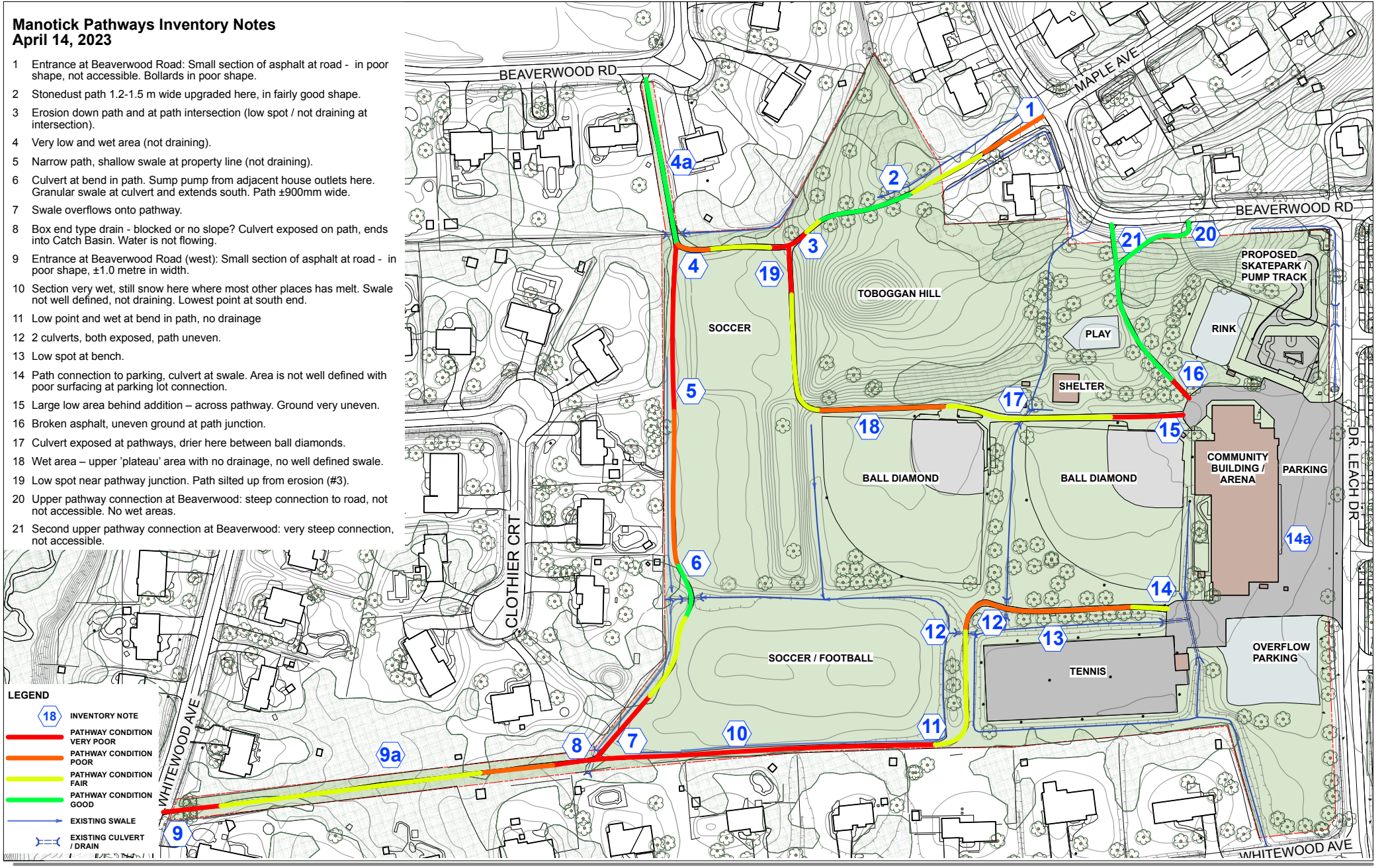
17 Culvert exposed at pathways, drier here between ball diamonds.

18 Wet area – upper 'plateau' area with no drainage, no well defined swale.

19 Low spot near pathway junction. Path silted up from erosion (#3).

20 Upper pathway connection at Beaverwood: steep connection to road, not not accessible. No wet areas.

21 Second upper pathway connection at Beaverwood: very steep connection, not accessible.



MANOTICK CENTENNIAL PARK - PATHWAY UPGRADES

Dr Leach Drive, Manotick

INVENTORY PLAN - NOTES

0 50 100 150 200 m

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MANOTICK CENTENNIAL PARK - PATHWAY UPGRADES

Dr Leach Drive, Manotick

INVENTORY PLAN - LOW AREAS

0 50 100 150 200 m

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JUNE 2023

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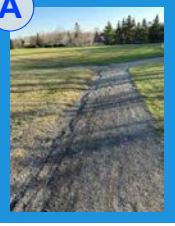
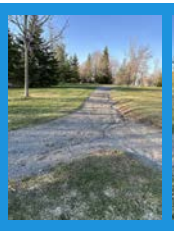
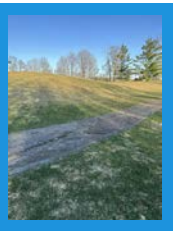

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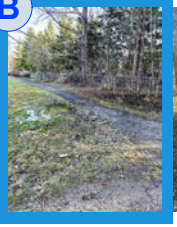
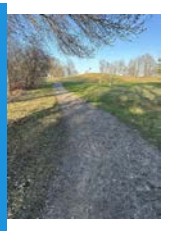

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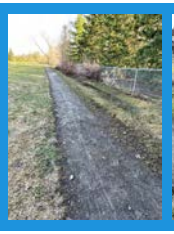
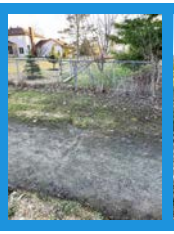
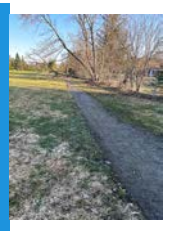


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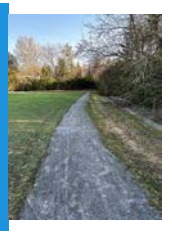

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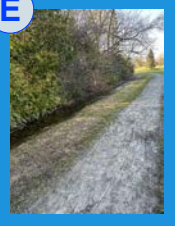
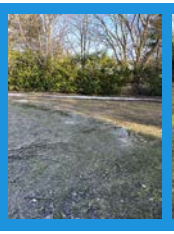
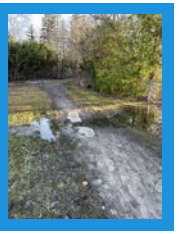

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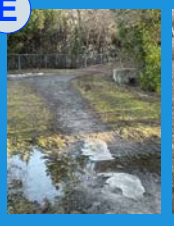

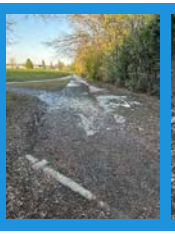
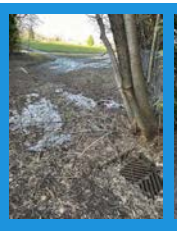
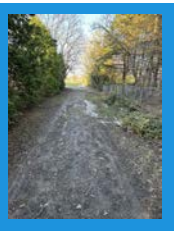

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LOW AREAS

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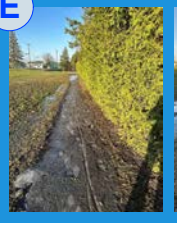
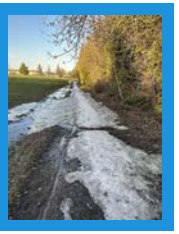

MANOTICK CENTENNIAL PARK - PATHWAY UPGRADES

Dr Leach Drive, Manotick

INVENTORY PHOTOS

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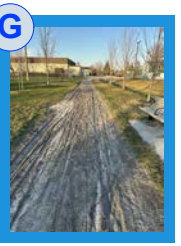

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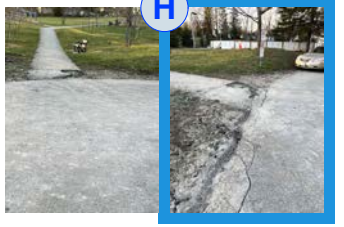

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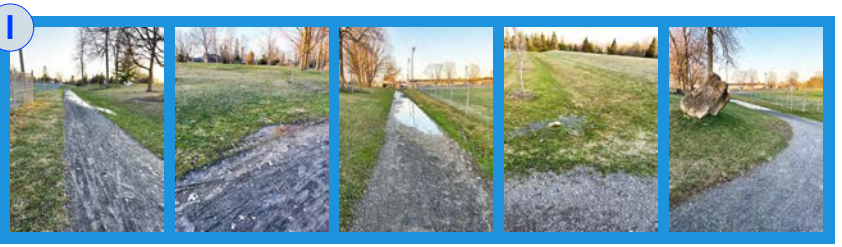

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LOW AREAS

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MANOTICK CENTENNIAL PARK - PATHWAY UPGRADES

Dr Leach Drive, Manotick

INVENTORY PHOTOS

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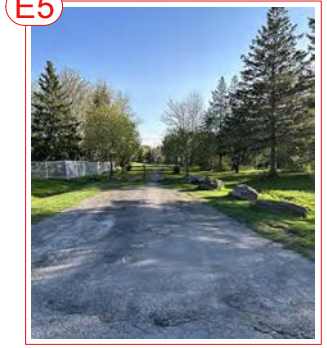

MANOTICK CENTENNIAL PARK - PATHWAY UPGRADES

Dr Leach Drive, Manotick

INVENTORY PLAN - ENTRANCES

0 50 100 150 200 m

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ANALYSIS PLAN

Existing park pathways are broken down into segments or sections according to location and condition.

Each section is analyzed according to:

- Length
- Pathways surfacing (asphalt or stonedust)
- Condition
- Width
- Slope
- Accessibility compliance
- Drainage
- Adjacent swales
- Culvert (plus if culvert is exposed)
- Any catch basins etc. in area

ANALYSIS PLAN

Existing Park Entrances (Pedestrian).

Existing park entrances are analyzed to see if they meet the following:

- Major community connection
- Possible vehicle conflict when accessing the park?
- Do they meet accessibility standards?
- Do they allow for all modes of pedestrian / cycling access?
- Ease of upgrades to conformance
- Surface condition
- Welcoming to park

ANALYSIS PLAN

Proposed park pathways are shown providing connections across park and allowing ease of access from one end of park to another, plus access to amenities.

Each proposed section is analyzed according to:

- Scope
- Community Connectiveness
- Feasibility to install
- Ability install to accessibility standards
- Will it disrupt adjacent activities
- Possible impact to existing trees
- Requires adjustment to swales and culverts

LEGEND

- H — PATHWAY SECTION ID
- EXISTING PATHWAY SECTION
- 1 — PROPOSED PATHWAY CONNECTION ID
- PROPOSED PATHWAY CONNECTION
- EXISTING SWALE
- EXISTING CULVERT / DRAIN
- E3 — ENTRANCE

ANALYSIS CHARTS: SEE PAGE 17

MANOTICK CENTENNIAL PARK - PATHWAY UPGRADES

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ANALYSIS PLAN

0 50 100 150 200 m

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EXISTING PATHWAY SYSTEM - SITE ANALYSIS

ITEM	PATHWAY SECTION A	PATHWAY SECTION B	PATHWAY SECTION C	PATHWAY SECTION D	PATHWAY SECTION E	PATHWAY SECTION F	PATHWAY SECTION G	PATHWAY SECTION H
PATHWAY EXISTING CONDITON								
LENGTH	260 metres	175 metres	157 metres	192 metres	94 + 44 metres	163 metres	213 metres	86 metres
SURFACE 1	STONEDUST	STONEDUST	STONEDUST	ASPHALT	ASPHALT	STONEDUST	ASPHALT	STONEDUST
SURFACE 2	N/A	N/A	N/A	STONEDUST	N/A	N/A	STONEDUST	N/A
CONDITION	POOR	POOR	POOR	POOR TO GOOD	GOOD	POOR	POOR TO GOOD	GOOD
WIDTH	>1.5 metre	<1 metre	<1 metre	1-1.5 metre	1-1.5 metre	1-1.5 metre	1-1.5 metre	1-1.5 metre
SLOPE	<5%	<5%	NO SLOPE	<5%	>5%	NO SLOPE	<5%	<5%
MEETS ACCESSIBILITY	NO	NO	NO	NO	NO	NO	NO	NO
DRAINAGE	POOR	FAIR	POOR	FAIR	GOOD	NONE	FAIR	GOOD
SWALES	SHALLOW	WELL DEFINED	SHALLOW	NONE	NONE	SHALLOW	NONE	NONE
CULVERT	YES	YES	NO	NO	NO	YES	NO	NO
EXPOSED	YES	YES	N/A	N/A	N/A	YES	N/A	N/A
DRAIN LINLETS / CATCH BASINS	NO	NO	NO	NO	NO	YES	YES	N/A
NOTES	floods @ ball diamond infield closest to bldg	swale defined near bldg, no swale at field	swale defined near bldg, no swale at field	erosion at pathway junction to A	steep at road, safety concern @ bend in road?	adjacent sump pumps flow into swale	drain @ Pathway B, E & F intersection	

EXISTING PATHWAY SYSTEM - PARK ENTRANCES

ITEM	ENTRANCE E1	ENTRANCE E2	ENTRANCE E3	ENTRANCE E4	ENTRANCE E5	ENTRANCE E6	ENTRANCE E7
PATHWAY EXISTING CONDITON							
MAJOR COMMUNITY CONNECTION	YES	YES	YES	YES	YES	NO	NO
POSSIBLE VEHICLE CONFLICT WHEN ACESSING PARK	YES	YES	NO	NO	NO	YES	YES
MEETS ACCESSIBILITY	YES	NO	NO	NO	NO	NO	NO
FEASIBILITY TO INSTALL TO ACCESSIBILITY REQUIREMENTS	N/A	EASY	EASY	EASY	EASY	DIFFICULT	DIFFICULT
ALLOW FOR ALL MODES OF PEDESTRIAN / CYCLING ACCESS	YES	YES	YES	YES	SOMEWHAT	NO	NO
SURFACE CONDITION	GOOD	FAIR	POOR	POOR	POOR	GOOD	GOOD
WELCOMING TO PARK	SOMEWHAT	SOMEWHAT	SOMEWHAT	SOMEWHAT	SOMEWHAT	NO	SOMEWHAT
NOTES	Access though parking lot and drive entrance	Access though parking lot and drive entrance / loading	Nice treed view to park in distance	No signage, nice treed view	Allows for vehicle parking at road, boulders, bollards could interfere with accessibility devices	Very steep at road, connects at road bend, cannot adjuist to meet accessibility in this	Fairly steep at road, away form road bend, neds adjustment to alignemnt to meet accessibility

PROPOSED PATHWAY SYSTEM

ITEM - NEW ACCESS ROUTES / PATHWAYS	PATHWAY SECTION 1	PATHWAY SECTION 2A	PATHWAY SECTION 2B	PATHWAY SECTION 3	PATHWAY SECTION 4
SCOPE	WITHIN PROJECT SCOPE	WITHIN PROJECT SCOPE	WITHIN PROJECT SCOPE	WITHIN PROJECT SCOPE	FUTURE
ADDS TO COMMUNITY CONNECTIVENESS	YES	YES	SOMEWHAT	NO	YES
FEASIBILTY TO INSTALL	MEDIUM	DIFFICULT	DIFFICULT	EASY	N/A
INSTALL TO AODA COMPLIANCE	YES	YES	YES	YES	N/A
DISRUPT ADJACENT ACTIVITIES	NO	SOMEWHAT	SOMEWHAT	NO	N/A
POSSIBLE IMPACT ON TREES	MEDIUM	LOW	LOW	N/A	N/A
ADJUST CULVERTS / SWALES	YES	YES	YES	YES	N/A
NOTES	Alignment of path to be verified to ensure minimal impact on existing trees. Culvert to be adjusted to allow connection to Path A	Alignment of path to be verified to ascertain if attainable near playing fields, path in area where spectators sit. Culvert to be added.	Alignment of path to be verified to ascertain if attainable near playing fields, path in area where spectators sit. Culvert to be added.	Connection to gate at tennis courts from side with minimal grade difference and impact. May require culvert or swale adjustment	Future possibility when upgrades to parking is considered (not part of this scope)

DESIGN OPTIONS

Upgrading pathways for widths, surfacing and drainage provides several options.

Pathways – Width Options:

1. Maintain existing width, may not be meet accessibility where less than 1.5 metres wide and therefore cannot be considered a path of travel or major connection through park and to community.
2. 1.5 metres wide to minimum Accessibility standards
3. 1.8 metres wide meets Ottawa accessibility standards
4. 2.4 metres wide allows for use of maintenance vehicles to access park (Ottawa Heavy Duty standard)
5. 3.0 metres wide meets the Ottawa criteria for multi-use pathway allowing for different modes of travel in both directions.

Pathways – Surface Options, refer to chart:

- Stonedust
- Asphalt

DESIGN OPTIONS

Drainage – Options for alleviating existing drainage issues – a combination will likely be used:

- Raising pathways, adjusting slope
- Bioswales, infiltration areas
- Upgrading swales and culverts
- Addition of backyard drains and catch basins (requires further study for feasibility)

Pathway upgrades

PATHWAY STANDARD / WIDTH OPTIONS

The following options depict different widths allowing for accessibility and usage.

OPTION 1: maintain existing width, which in some cases is less than 1 metre (3') and in many cases less than 1.5 metres (5'). Where pathways are less than 1.5 metres, they are not compliant to latest accessibility standards.

OPTION 2 - 1.50 metres (5'): this is the minimum accessible width to be compliant with AODA (Accessibility for Ontarians with Disabilities Act). Option 2 allows for users to pass each other if both are using accessible devices. It does not allow for any maintenance vehicles and is not conducive to multi use (walking, cycling, scooter, other).

OPTION 3 - 1.80 metres (6'): minimum City of Ottawa standard accessible pathway width allowing for ease of use in both directions if both are using accessible devices, multiple people. It does not allow for any maintenance vehicles and is not conducive to multi use (walking, cycling, scooter, other).

OPTION 4 - 2.40 metres: standard City of Ottawa Heavy Duty pathway width allowing for maintenance vehicles, ease of use in both directions if both are using accessible devices, multiple people. It is not conducive to multi use (walking, cycling, scooter, other).

OPTION 5 - 3.0 metres: standard width for multi-use pathways (MUPs). Allows for ease of users with different modes (walking, cycling, scooters), plus maintenance vehicles.

SURFACE OPTIONS

The following options depict different pathway surfacing options depending on width and usage. The full reconstruction options also pertain to the new pathway sections.

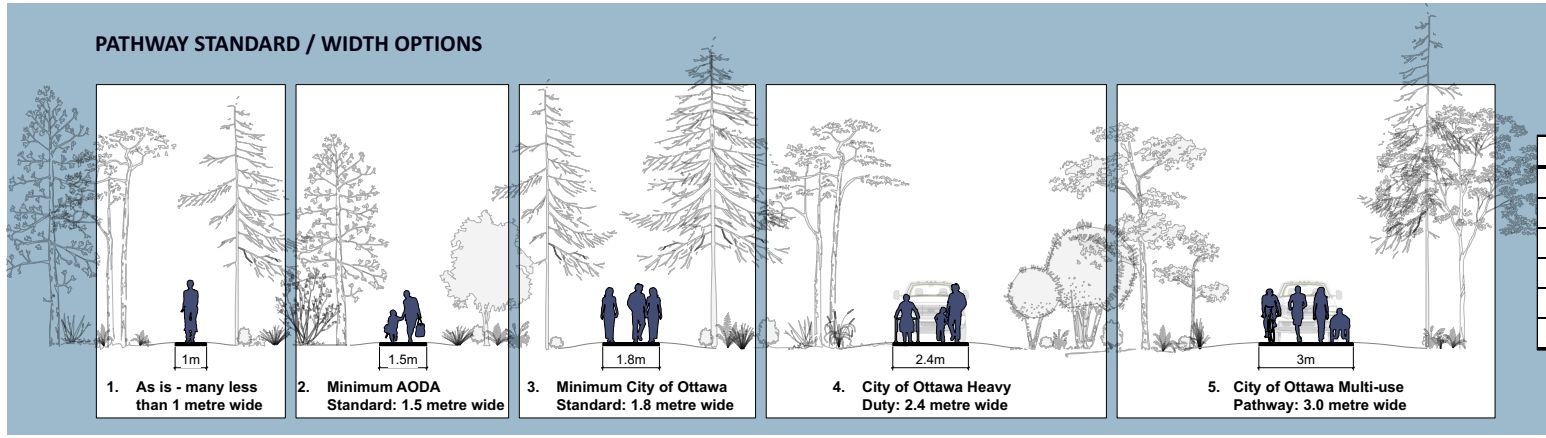
OPTION 1 - STONEDUST RESURFACING: maintain existing width of pathway, add additional stonedust and consolidate.

OPTION 2 - STONEDUST FULL RECONSTRUCTION: remove existing pathway, excavate and install new base to new elevations for reconstructed pathways with optional widths 1, 2 or 3.

OPTION 3 - ASPHALT FULL RECONSTRUCTION STANDARD: remove existing pathway, excavate and install new base and asphalt to new elevations for reconstructed pathways with optional widths 2 or 3.

OPTION 4 - ASPHALT FULL RECONSTRUCTION HEAVY DUTY / MUPs: remove existing pathway, excavate and install new granular bases and asphalt to new elevations for reconstructed pathways to optional widths 4 or 5. Allows for multi-use and/or maintenance vehicle access.

PATHWAY STANDARD / WIDTH OPTIONS

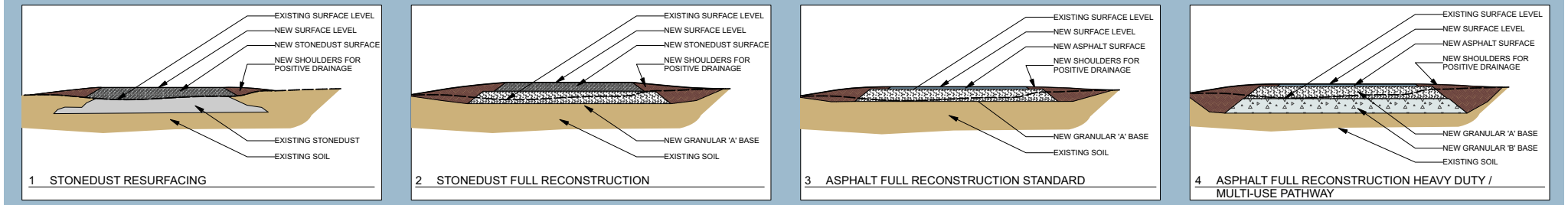


1. As is - many less than 1 metre wide
2. Minimum AODA Standard: 1.5 metre wide
3. Minimum City of Ottawa Standard: 1.8 metre wide
4. City of Ottawa Heavy Duty: 2.4 metre wide
5. City of Ottawa Multi-use Pathway: 3.0 metre wide

PATH WIDTH AND USAGE

	WIDTH	STONEDUST	ASPHALT	ACCESSIBLE	USE
1	<1.5m	√	X	X	Pedestrian
2	1.5m	√	√	√	Pedestrian
3	1.8m	√	√	√	Pedestrian
4	2.4m	X	√	√	Heavy duty
5	3.0m	X	√	√	Multi-purpose

SURFACE OPTIONS



MANOTICK CENTENNIAL PARK - PATHWAY UPGRADES

Dr Leach Drive, Manotick

DESIGN OPTIONS

Ruhland & Associates Ltd

JUNE 2023

DRAINAGE OPTIONS / UPGRADES

The following depicts the existing conditions of the drainage components in the park (catch basin, culverts, culvert covers, swales) and some proposed design options. Some options will require further input to the design feasibility such as adding catch basin or other subsurface infrastructure (outside this scope).

PATHWAY DESIGN
Pathway upgrades would include raising the grade, adjusting side slope and redefining the adjacent swales to alleviate low areas, or areas with no drainage. Design would also divert runoff in areas where erosion occurs.

BIOSWALES / INFILTRATION AREAS
Designing the low areas with little or no slope to allow for better uptake of water using bioswale and infiltration areas. These may or may not have subdrains, depending on feasibility of outletting the drains.

SWALE DESIGN
Adjust swale shape and flow to allow for better drainage. Designed in conjunction with pathways, culverts, catch basins, bioswales and retention areas.

CULVERTS
Reinstate existing culverts at proper depths with proper cover at pathway. New culverts to be added where required to alleviate drainage and low spots.

CATCH BASINS / BACKYARD DRAINS
Further study can determine whether catch basins can be added to alleviate some of the drainage issues and poor performance of existing catch basin in existing low area E. Installation and/or upgrades of existing catch basins would entail a major investment for design and installation.

EXISTING DRAINAGE

CATCH BASIN

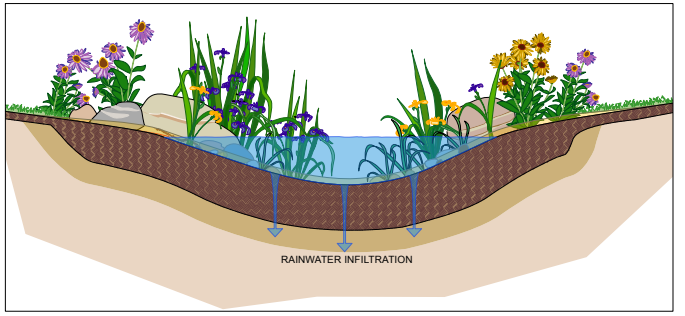
DRAIN COVER

CULVERTS

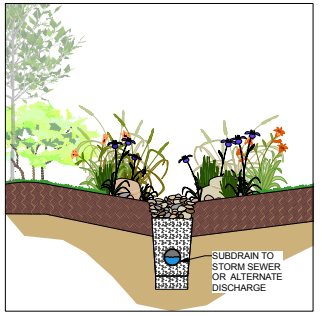
CULVERT / SWALE

DRAINAGE UPGRADE OPTIONS

BIOSWALES / INFILTRATION AREAS



BIOSWALES / INFILTRATION AREAS



RAISED PATHWAY

BACKYARD DRAINS

CATCHBASINS

CULVERTS

MCPRA
MANOTICK CENTENNIAL PARK

THANK YOU, PLEASE COMPLETE SURVEY AND PROVIDE COMMENTS
https://freeonlinesurveys.com/s/d8PMmyZP

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