Coalition of Yellow Creek Residents' Associations

(Submission by the Deer Park, Summerhill, Moore Park, North Rosedale, and South Rosedale residents' associations)

15 November 2017

Councillor Mary-Margaret McMahon, Chair, and Members,
Parks and Environment Committee
City of Toronto
via email: pec@toronto.ca

RE: PE 23.3 - Vale of Avoca/Yellow Creek update

Dear Councillor McMahon, Members,

We write to you as representatives of five Residents' Associations bordering the Vale of Avoca/Yellow Creek ravine. We are concerned about the following aspects of the report before you from the General Manager, Parks Forestry and Recreation:

1. The report seemingly postpones the development of a Master Plan for the ravine to a date following the completion of the environmental assessment to be undertaken by Toronto Water.
2. The environmental assessment is estimated to take three years. This surely can be speeded up. Erosion in the ravine is accelerating. Stream remediation should be undertaken as a priority to avoid a major collapse of ravine slopes, not postponed for another 3-4 years to 2022 or thereafter.
3. Other critical ravine investments, including the eradication of invasive species, need not wait for the conclusion of the Toronto Water EA.
4. Planning for remediation of the ravine should not be done within departmental silos. Stream remediation should be planned in the context of a Master Plan for the entire ravine, including paths, bridges, access points, and ecological integrity as well as the stream. The Master Plan should be developed starting now.
5. Establishment of the working group of community stakeholders should not be postponed. It is needed now.

We realize that staff recommendations are necessarily constrained by budget limitations. A proposal for a public/private partnership ("PPP") that would alleviate these limitations is to be presented by others to the Committee.

We support the PPP proposal, the purpose of which is to utilize resources available from the University of Toronto Faculty of Forestry along with other private-sector resources to accelerate ecological remediation work (separate from the work required for streambed remediation). We recommend that staff be requested to report back to the Committee on its organization and feasibility.

Our detailed comments follow.

Need for a multi-agency Master Plan

At its meeting of 9 September 2016, the Committee adopted a motion (**PE 13.6**) requesting staff to report on a process to develop a Master Plan for the Yellow Creek / Vale of Avoca ravine that, among other things,

- *coordinates the planning of the various departments (notably Parks, Toronto Water, Transportation, and the TRCA) for future work in the ravine*
- *ensures a clear identification of responsibilities for implementation and maintenance of planned improvements*
- *establishes a working group of community stakeholders to identify key issues of community concern*

As this motion recognized, the Master Plan needs to be be more than just an adjunct to the Yellow Creek Geomorphic Systems Master Plan Environmental Assessment ("GSMP EA") to be undertaken by Toronto Water. The focus of the GSMP EA is to develop recommendations to guide the engineering of streambed remediation investments that are required to manage the effects of stormwater erosion.

The watercourse is an integral part of the ravine. It is essential that streambed re-engineering be considered in the context of a Master Plan that covers public uses of the ravine and its ecological integrity. The role of the Working Group envisaged in the PE 13.6 motion should be integral to all of this planning, starting now.

The Master Plan will evolve in response to the work done by the GSMP EA. But it is important that the EA also respond to planning for the entire ravine. Funding for the stream remediation should include a budget for the costs of restoring areas damaged by the construction work, in accordance with the ravine Master Plan.

Need for a Master Plan now

The staff report before the Committee focuses on investments and activities to be implemented subsequent to the GSMP EA. However, there is an urgent need for an immediate investment of staff and funding to deal with ecological and safety issues that should not wait for the conclusion of the GSMP EA in 2021 or 2022. We submit that a Master Plan for the Yellow Creek ravine is needed now and should include a staged prioritization of investments that can and should be undertaken within the 2018 and subsequent budget years.

We have attached an outline of community objectives that provides a listing of potential work projects. While we recognize that there will be many potential ravine remediation projects competing for City funds, we submit that the deplorable state and escalating erosion of the Yellow Creek ravine argues for making its remediation a top priority.

Of immediate importance: (1) control of rapidly-growing invasive species, and (2) creating an inventory of old-growth trees that need to be protected in implementing the GSMP EA. Additional issues that should be addressed soon include reforestation (culling invasive trees such as Norway maples that contribute to slope erosion) and trail improvements.

Proposed public/private partnership

A separate submission outlines the potential for a public/private partnership to undertake a comprehensive ravine biological and ecological inventory and to combat invasive species.

The proposal builds on the work done by UofT Faculty of Forestry students in 1977 and 2016 studies, both funded by private donations, that provide a historic baseline on the changing ecological state of the Yellow Creek ravine.

We urge the Committee to support this proposal in principle and to request staff to report on the feasibility and organization of the proposed PPP. Given City budget constraints, we believe that a community-funded joint UofT/Parks initiative is likely to be the only way the necessary work will be undertaken quickly.

This proposed initiative is an ideal pilot project through which to develop ways of implementing the Ravine Strategy's goal of expanding the City's network of partnerships with the TRCA and academic institutions to identify research needs, develop baseline inventories of ravine health, and improve ecological monitoring and reporting in Toronto's ravines.

Conclusion

The Vale of Avoca/Yellow Creek ravine is in urgent need of remediation to control erosion, restore its ecological integrity, and improve access. We urge the Committee to

- accelerate work on ravine remediation, including both streambed re-engineering and ecological remediation;
- ensure that an initial version of the Master Plan for the ravine is developed before the Toronto Water GSMP is finalized;
- establish a Working Group of community stakeholders now, to work with City staff in developing the Master Plan and to participate in the evaluation of stream remediation alternatives;
- request staff to report on the feasibility and organization of the proposed public/private partnership.

Respectfully submitted,

Debbie Briggs, *President, Summerhill Residents' Association*

Don Hogarth, *President, South Rosedale Residents' Association*

Chris Lowry, *President, Moore Park Residents' Association*

John Plumadore, *President, Deer Park Residents' Association*

Lewis Reford, *President, North Rosedale Residents' Association*

Attachment: Objectives of neighbouring residents associations for needed improvements to Yellow Creek (Vale of Avoca) ravine

REVISED FINAL - Nov 7

OBJECTIVES OF NEIGHBOURING RESIDENTS ASSOCIATIONS FOR NEEDED IMPROVEMENTS TO YELLOW CREEK (VALE OF AVOCA) RAVINE

(Submission by the Deer Park, Summerhill, Moore Park, North Rosedale, and South Rosedale residents' associations)

The Vale of Avoca, a short ravine located east of Yonge Street and running south from Mount Pleasant Cemetery to the beginning of Park Drive Reservation at Roxborough and Mt Pleasant Rd, is a major environmentally sensitive ravine park that is an important resource for tens of thousands of residents of midtown Toronto. It is also an element of a north-south recreational bikeway connecting the Don Valley to Yonge Street.

Maintaining the quality and ecological integrity of the ravine will be of growing importance as the midtown Yonge corridor becomes intensified. The ravine has suffered significant deterioration in recent years from inadequate maintenance and increasing stormwater-based erosion. An exponential growth in invasives threatens its ecological integrity and further increases erosion of ravine slopes. The ravine and Yellow Creek are in urgent need of improvements to enhance safety, control erosion, protect its natural environment, and maintain access.

During the course of a recent walk with City staff and Councillor Wong-Tam to survey the state of the ravine, it was suggested that the residents associations adjacent to the ravine (the five associations listed above) set out a clear statement of their objectives for ravine remediation. This memo, a collaborative effort by representatives of those associations, is a response to those suggestions. It has now been endorsed by the boards of directors of all five residents' associations.

In broad terms, our objectives are repair and remediation of the stream —currently a degraded and rapidly eroding open storm sewer—, preservation of the ravine's ecological integrity, and preservation of the existing trail network on the east and west sides of the ravine. We recognize that the upcoming Toronto Water/TRCA project to rebuild the stream bed —urgently needed to control erosion and deal with the growing volume of storm surges— will be disruptive. As this project advances, there will be many issues that need to be addressed by the joint City/residents Working Group that is to be established. This memo is a first attempt to set out objectives that will need to be dealt with in the Master Plan for ravine remediation to be developed by the Working Group.

We are informed that projects are underway to rebuild the Heath Crescent stairs, address related slope stability issues, and install a traffic light on Mt Pleasant at Roxborough. This memo addresses other issues/matters that will need to be addressed by the Working Group.

<u>Our objectives</u>

We recognize that the work that needs to be done will have to be phased. The Toronto Water/TRCA stream remediation project will not start until a hydrogeomorphic study and associated environmental assessment —to begin in the spring of 2018— have been completed. Work on constructing the necessary stream improvements will, we are informed, be staged over several years. Improvements to creek-side trails and bridges will consequently have to be staged to accomodate the streambed reconstruction.

Reflecting this, we have divided our detailed list of objectives into two categories: (1) "Phase 1 work", comprising work away from the stream that can be undertaken in advance of stream-bed reconstruction, and (2) "Phase 2 work" that necessarily must be postponed to follow the staged completion of the Toronto Water/TRCA stream remediation project. What we suggest as Phase 2 work are improvements that should be considered by the Working Group in developing a Master Plan for the ravine.

Our objectives are as follows:

1. That the Working Group be formally established as soon as possible.
2. That the City consult with the Working Group through all stages of the improvement initiative in order to:
   (a) prioritize projects to keep the trail network as open and useable as possible through the duration of the Toronto Water/TRCA stream remediation project. Maintaining an east-west link across the Yellow Creek for bikes and foot traffic should be viewed as essential throughout the project.
   (b) develop a Master Plan for ravine remediation, once the hydrogeomorphic study is done.
   (c) advise on the design and staging of stream repairs and ravine remediation.
3. That the City undertake work in Phase 1 to repair/rebuild steps and trails on the upper trail network that will not be affected by the Toronto Water/TRCA project. "Priority and other phase 1 work", listed below in the *LIST OF WORK ITEMS* on the next page, identifies relevant sites requiring such work. The list is not short; the items on the list will need to be prioritized by the Working Group.
4. That, as each stage of the Toronto Water/TRCA project is completed, the City rebuild/replace trails/footpaths and bridges damaged by the Toronto Water project and/or washed out by recent storms, leading to restoration of the entire trail network when the project is finally completed. This work —necessarily postponed and subject to further consideration in the light of the design of the stream remediation— is listed below in the *LIST OF WORK ITEMS* as "Phase 2 work". The attached maps detail the existing network, categorizing the trails by desired future quality.
5. That reforestation take place in both phases, with substitution of native species for non-native trees (mostly Norway maples) where possible, along with planting shrubs and other perennials to encourage ground cover on the ravine slopes and reduce erosion. To maintain its ecological integrity, forest remediation and eliminating invasive ground cover is an urgent priority.
6. That work done in the ravine have, as much as possible, minimal impact on the ecology of the ravine. Path restoration should be designed to minimize erosion of the slopes, replacing paving with permeable surfaces wherever possible.

Our prime objectives are threefold: Remediation of the stream to prevent further erosion, retention of the natural character of the ravine, and preservation of its ecological integrity. We see the ravine as both an important parks resource and a valuable example of ravine ecology. Maintaining an appropriate balance of these objectives will be a key responsibility of the Working Group.

A note on accessibility for handicapped persons

Because of the steepness of the ravine slopes, the narrowness of the ravine, and its environmentally sensitive nature, it is neither practical nor desirable to make access routes down the east or west ravine slopes usable by persons with disabilities. The ravine slopes are simply too steep (exceeding 1:1 in many parts of the ravine). Switchbacks such as what is currently being constructed at Chorley Park would destroy too much of the forest cover and natural character of the ravine, and would cause further erosion of an already fragile slope. Besides, most footpaths in the ravine floor other than the southern portion of the existing bike/service road are not navigable by wheelchair.

That said, access to the existing paved bike/service road could be facilitated by providing on-street handicapped-only parking near the Roxborough/Mt Pleasant intersection. Whether other accessible paths are possible (e.g. south from the Mt Pleasant cemetery) is an issue that should be examined by the Working Group after the results of the hydrogeomorphic study become available.

LIST OF WORK ITEMS
[numbers are keys to locations o attached maps,
listed in geographic order from north to south]

Priority phase 1 work

(1) Repair collapsed steps and improve trail leading down into the ravine from the NW corner of the St. Clair bridge. This entrance provides access to the northern portion of the ravine for office workers and residents in the Yonge/St. Clair area as well as for others coming from the St. Clair subway station.

Consider making the trail suitable for bikes to provide the missing link in the potential bike routes extending from the Don Valley and from Yonge St into Mt. Pleasant Cemetery. The traffic light at Avoca and St Clair provides a safe connecting link along Avoca to the existing bike routes south over the Rosehill reservoir or down to Mt Pleasant and the Brickworks.

(6) Repair/rebuild/replace the west-side steps leading up from under the St Clair bridge to the paved bikeway/access road below Avoca Avenue.

Many of the steps in the upper portion of the trail are collapsing.

(11) Northern bridge: Repair the washout just below the footbridge and maintain the footbridge through the Toronto Water project.

As the picture to the right shows, each rain storm erodes more, extending the washout and undercutting the bridge.

Growing washout at northern footbridge

(16) Upgrade the unsafe narrow upper footpath under the CPR railway bridge to provide a safe connection between the Mathersfield and Shaftesbury stairs.

This path is widely used by ravine visitors entering from South Rosedale via the recently reconstructed Mathersfield stairs. In places, the path is currently 8-10 inches wide, with no protective railings.

(17) Build stairs immediately north of the CPR railway bridge to provide a safe connection down to the stream-side path from the upper-level path under the railway bridge.

This work should not conflict with Phase 2 stream remediation because of its location immediately beside the railway bridge, but this will have to be reviewed. If it does, it will have to be postponed to Phase 2. The current steep path is not safe but is widely used. Current foot traffic is seriously eroding the slope.

(19) Repair/upgrade the heavily eroded footpath leading from the Mathersfield stairs south to the grassed area out to Mt Pleasant.

This trail, currently in a primitive state, links the Mathersfield stairs to the remaining portion of the now-unused Summerhill Avenue connection that led in the 19th century down from the former railway crossing into the ravine and across the stream to the eastern portion of Summerhill Avenue in North Rosedale. It ends at the grassed area leading out to Mt Pleasant.

Washout on eastern footpath (as of early August)

<u>Other phase 1 work</u> (varying importance and urgency)

(8) The washout (pictured above) is a safety issue.

Should post signs at entrances to trail warning of risk and also provide safety fence like around other washouts to keep footpath users away from the undercut edge. People will continue to use this footpath in spite of the dangerous condition, which will get worse with every storm.

(10) Repair/upgrade the eroded "nature path" linking the SE corner of the Rosehill Reservoir park to the upper trail network.

Eroded tree roots and a steep slope make the upper part of this footpath a safety hazard.

(13) Rebuild/repair the eroded foot trail from the southern (washed out) bridge up to the Shaftesbury stairs.

Footpath has deteriorated. Users have created parallel path (see photo).

(18) Clean up trees fallen across stream and western stream-side footpath south of the CPR railway bridge (path not washed out).

Trees have fallen across stream at several other locations (see maps), damming the stream and causing further erosion.

Path up to Shaftesbury steps (formal path to left of partially missing railing)

<u>Accessibility improvement</u> (Phase 1)

Provide 2-3 wheelchair-only parking spaces close to the entrance to the Vale of Avoca from Mt Pleasant. This is the only current access point usable by persons in wheelchairs. This work should be integrated with the redesign of the Mt Pleasant/Roxborough intersection being done in conjunction with the installation of a new traffic light.

<u>Phase 2 priorities</u> (as stream remediation is completed)

As noted earlier, the objectives specified here will have to be reviewed by the Working Group once the recommendations of the hydrogeomorphic study are known. We specify them here as objectives that should be taken into account in that study.

The key priority we urge is restoration of the entire existing footpath network, with multiple stream crossing points. The following points expand on this.

(1) Upgrade footpath down from the NW corner of the St Clair bridge if not already done.

The potential for an additional bikeway extension has already been noted (see **(1)** in the list of Phase 1 priorities, above]. If this is not done, the footpath and stairs should be upgraded.

(2) Restore and upgrade trail networks on both sides of the creek north of the St Clair bridge and on the eastern side of the creek down to the northern footbridge.

We recognize that the east side stream-side trail from the north footbridge to Mt Pleasant cemetery and the Heath Crescent stairs is only suitable for agile foot traffic and will be temporarily unusable during stream remediation. However, it is widely used, should be maintained in some form in the Master Plan, and rebuilt following the Toronto Water/TRCA remediation project.

(14) Rebuild or replace washed-out southern footbridge and repair/rebuild footpath beside new "spillway" stream south of this footbridge.

The photo to right shows the remains of the former paved path to the bridge. Washouts also eliminated much of the footpath leading south, to the left of the photo. Design and location of the bridge and footpath will depend on stream remediation.

Missing path to southern bridge (stream to right of wall, washout to left)

(15) Reconstruct fallen granite-block wall and washed-out west stream-side footpath north of the CPR railway bridge.

This and the footpath in (14) are widely-used, in spite of their deplorable condition. The spillway created by washouts may remain as a component of the stream redesign. The washed-out footpath, replaced by new slope-eroding informal paths in the adjacent forest, should be rebuilt.

(17) If not already done, construct stairs to provide a safer connection to the west stream-side footpath down from the upper footpath under the CPR railway bridge.

The current steep informal footpath beside the railway bridge is used as a convenient access route into the ravine by people entering through the Mathersfield and Shaftesbury stairs, progressively eroding the slope as a consequence. Its steep slope makes the path a safety issue.

Foot-eroded steep footpath down to stream by railway bridge

<u>Other Phase 2 issues</u> (desirable, but lower priority)

(3) Upgrade current east-side footpath over slippery unsafe flagstone slope under St Clair bridge.

Where people cross to the continuation of the east-side footpath, the sloping flagstones could be replaced by a conventional safe path.

(4) Consider providing a third footbridge across the stream under or near the St Clair bridge or alternatively a safe low-water stepping-stone pedestrian crossing.

The possibilities for these two items will depend on the design of the stream remediation, which should seek to enable these improvements.

(5) Consider upgrading the steep unsafe footpath down into the ravine from the SE corner of the St Clair bridge to provide safer additional access from Moore Park.

The condition of the footpath indicates that it is used in spite of its steepness.

(9) Repair/rebuild the stone steps into the ravine from the NE corner of the Rosehill Reservoir.

The heritage steps should be preserved but have sunk and become difficult to use.

(12) Repair foot trail and stone steps leading up from the stream-side footpath to the upper trail leading to the Rosehill reservoir.

Footpath around steps has become eroded, path further up is threatened by further erosion,

(20) Consider upgrading the steep informal path up to Mt Pleasant at Whitehall to improve access from North Rosedale.

Safety issue: lack of traffic light at Whitehall.

<u>Reforestation</u>

Both in Phase 1 and Phase 2, improvement of the ravine forest cover should be given priority. Replacing non-native species with native species and ground cover will make a significant contribution to protecting the steep banks of the ravine.

Dog Strangling Vine and Japanese Knotweed are growing exponentially in the ravine, and the allelopathic Norway Maple is progressively

Dog-strangling vine near Park Drive Reservation

replacing native trees. A historical study of the Rosedale ravine (the lower part of the Yellow creek ravine) done by U of T Forestry indicates that the percentage of non-native trees (mostly Norway maples) has gone from 10 to 40 percent over the past forty years. The consequent bank erosion due to lack of ground cover will only get worse if preventive action is not undertaken soon.

Community stewardship initiatives

Several community intiatives are being organized by residents neighboring the ravine, including fund-raising to support U of T research in the ravine and community initiatives to deal with invasive species in partnership with Toronto Parks and Urban Forestry. The community is also organizing ravine walks with forestry experts to educate interested residents on the recognition of invasive species and to encourage participation in the community/Toronto Parks partnership.

Footpath improvements

The existing trail network loops are an important component of the forested area in the ravine. They provide a rich variety of forest walks that enhance the use and enjoyment of the ravine. The footpaths are not just a set of “one way” connectors across the ravine but also a major element of what makes the ravine attractive to its users. The many stairs into the ravine are necessary to provide entries from all of the neighbouring areas, serving not only neighbouring residents but also the many people who come through those neighbourhoods to get to the ravine park from other areas.

The existing footpath network should be maintained in its entirety but needs to be upgraded (better surfaces, steps, etc.) to reduce its impact on the ravine. (The list of work items has provided examples of what is required.) As experience has shown time and time again, people will make their own informal footpaths where ‘formal’ footpaths are not provided, eroding ravine slopes as they do now. Dealing with this reality requires proactive path improvements.

Other improvements (Phase 2 and beyond)

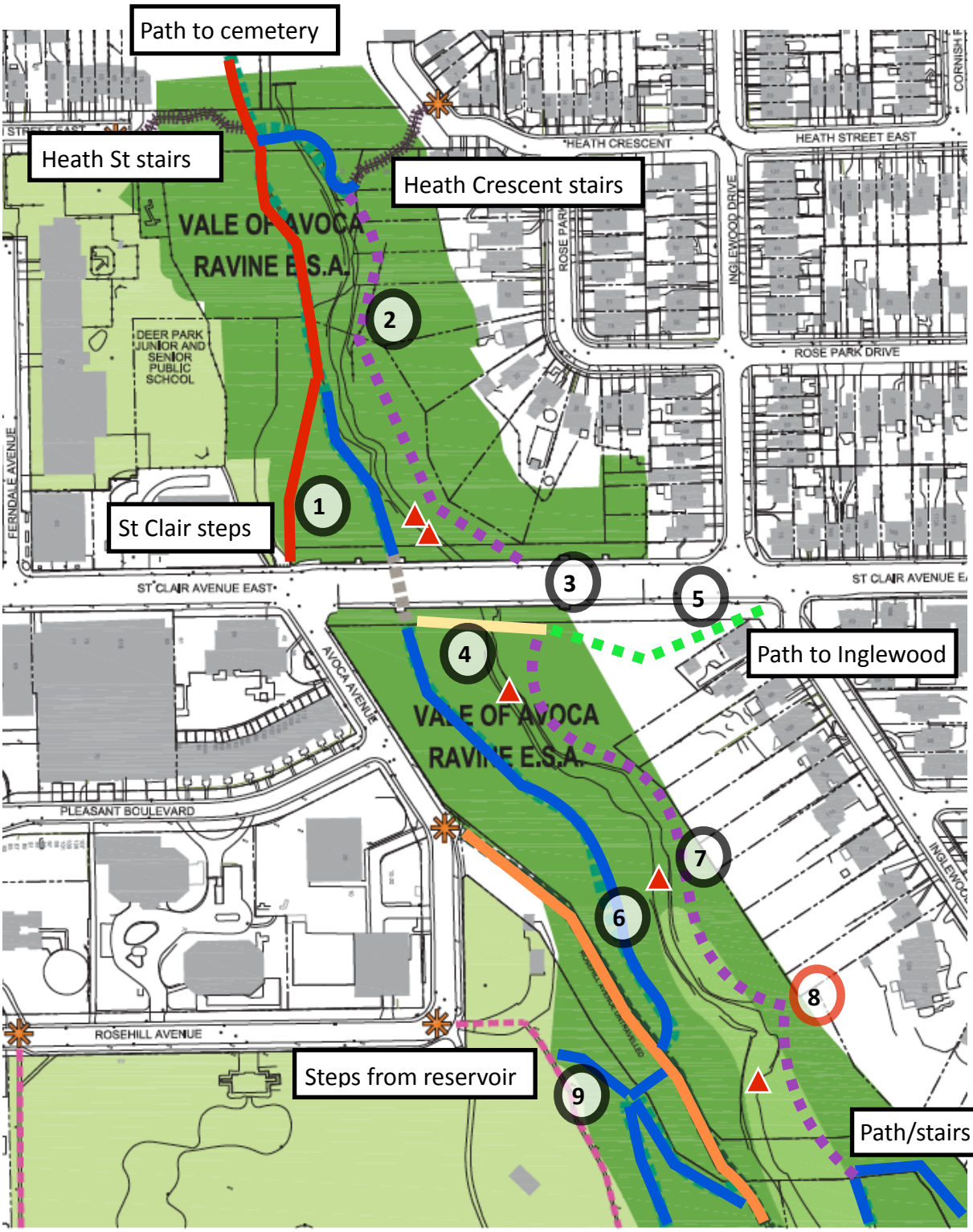
Once the Phase 2 improvements to ravine infrastructure are in place, the Master Plan should provide for further work such as wayfaring signage and educational signage and stations. The ravine's central location and natural forest make it a valuable educational resource for supplemental teaching programs in environmental issues such as urban forestry and invasive species management. Action programs such as native tree seed collection would be ideal for school participation.

Summary

The list of work items presented in this memo is long, reflecting the extent to which the Vale of Avoca has been allowed to deteriorate. They will need to be prioritized by the Working Group as work proceeds. In addition, their implementation may in some cases need to be modified to reflect the results of the hydrogeomorphic study. They are listed here as objectives to be taken into account in that study.

The key improvement that is required is of course the reconstruction of the Yellow Creek streambed to deal with the increasing number of stormwater surges that result from the growing number and intensity of storms. Without expeditious remediation of the streambed and its banks, ravine erosion and deterioration of the park will only accelerate.

While multiple objectives need to be balanced, our primary aim —returning the ravine as close as possible to its original state— must be clear. The mandate must be as expressed in the City’s Official Plan (section 3.4): “Protecting the natural environment and urban forest should not be compromised by growth, insensitivity to the needs of the environment, or neglect.” Our priority is that of the City’s Ravine Strategy: preservation of ravine ecology. There is much to do.



NORTH SECTION

From

Mt Pleasant Cemetery

to

former Rosehill Ave crossing of stream

Categories

A (Bike/service road: 2.5+ m wide, paved)

- existing
- proposed

B (Improved footpath: 0.8 m wide, stairs)

- existing
- proposed

C (Maintained lower-quality footpath)

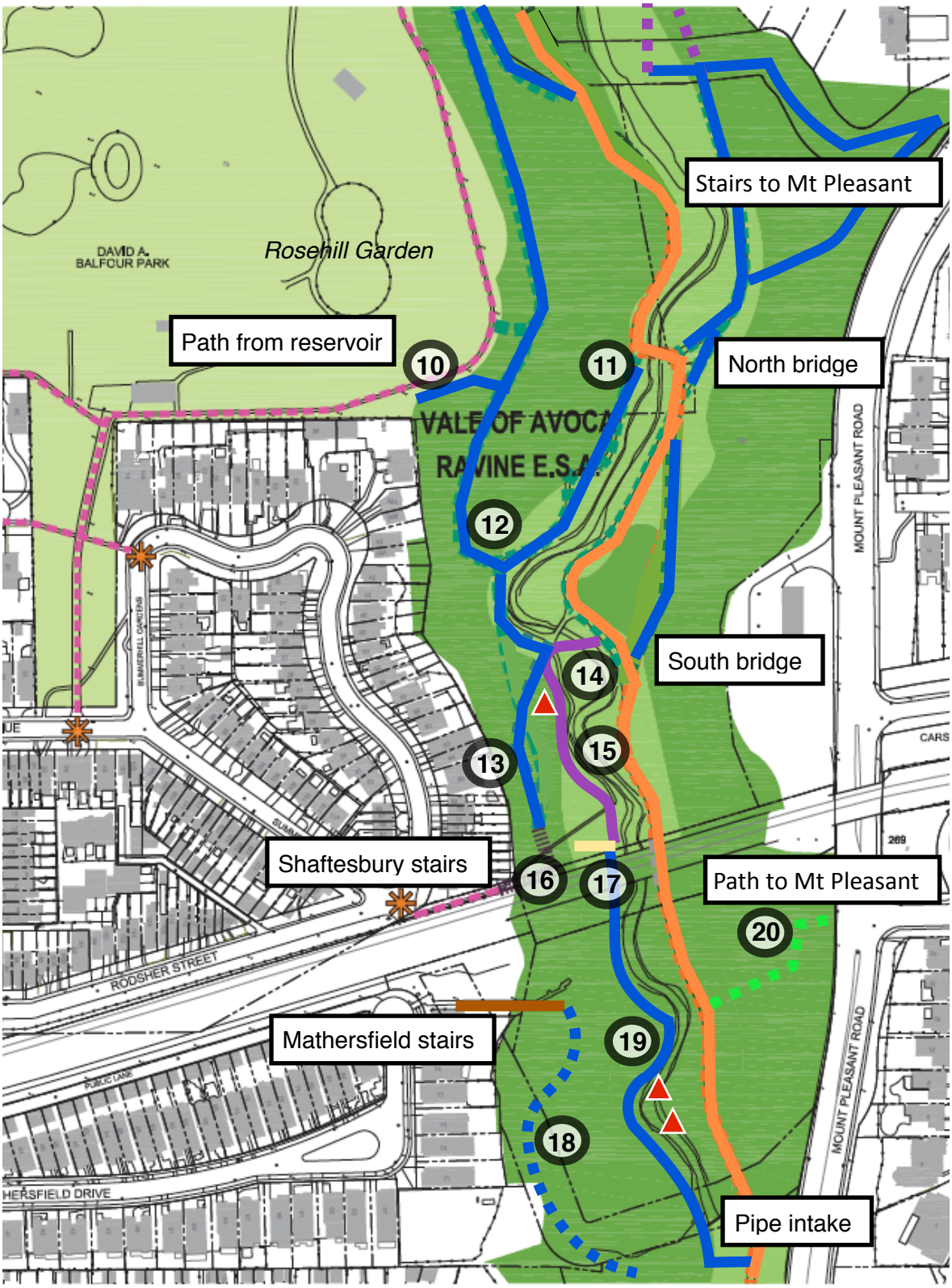
- at-risk until stream repair

D (Not maintained)

- steep, unsafe

Locations shown above (see previous list for details on required work):
(1) Path and steps down from NW end of St Clair bridge (need repair, potential upgrade to bike path)
(2) East-side path from St Clair bridge to cemetery (minimal safety maintenance prior to Phase 2)
(3) Path over unsafe flagstone slope under St Clair bridge
(4) Potential future footbridge or maintained low-water crossing (Phase 2)
(5) Steep at-risk footpath to Inglewood at St Clair (consider upgrade to safe steps)
(6) Steps in need of maintenance
(7) East-side path to St Clair bridge (minimal safety maintenance prior to Phase 2)
(8) Path washout (current safety issue)
(9) Heritage stone steps from Rosehill reservoir to bike road (need repair)

▲ Trees fallen across stream



SOUTH SECTION

From

former Rosehill Ave crossing of stream

to

Mt Pleasant Green (pipe under)

Categories

A (Bike road: 2 m, paved)

- existing
- proposed

B (Improved footpath: 0.8 m, stairs)

- existing
- at-risk until stream repair
- proposed

C (Maintained lower-quality footpath)

- existing, needs upgrade

D (Not maintained)

- steep, unsafe

Additional locations in list of required work:

(10) Steep path to reservoir ("nature trail", in need of maintenance or upgrading)
(11) Near-washout of only remaining bridge (bridge must be maintained through stream repair)
(12) Stone steps to upper path in need of maintenance
(13) Path from Shaftesbury stairs to washed-out bridge (in need of maintenance)
(14) Washed-out path beside "spillway" stream, washed-out bridge (repair both in Phase 2)
(15) Fallen granite wall, washed-out stream-side path (repair in Phase 2)
(16) Connecting footpath under RR bridge, foot-eroded creation (needs upgrade for safety)
(17) Dangerous widely-used steep foot-eroded path to stream (needs upgrade to safe steps)
(18) Footpath from Mathersfield steps to Mt Pleasant Green (needs upgrade, tree cleanup)
(19) Existing footpath beside stream (will need some maintenance but not washed out)
(20) Existing steep path down from Mt Pleasant at Whitehall (consider upgrade to safe steps)

Appendix: RAVINE PATH CATEGORIES

1. <u>Major current and potential paths</u> (see maps for locations)

A. Bike path, access road (generally 2.5+ m wide, paved)

- Existing paved road from Mt Pleasant to Avoca Ave (needs improvement of drainage plus some repair of eastern edge). Currently adequate for service access and bikes. Cannot be widened without significant tree removal.
- Possible extension to paved bike path (same standard as existing access road south from Avoca). Currently footpath with stairs.

Trails in this category should conform to the minimum guidelines set out in the City's 2015 *Toronto Multi-use Trail Design Guidelines* report and be constructed of permeable material wherever possible.

B. Improved high-traffic footpaths (unpaved, generally 0.8 m wide or more, stairs over all steep slopes, protective railings where necessary)

- Existing path, relatively high use
- Existing at-risk path to be rebuilt (along with bridge) during or after stream remediation

C. Maintained footpaths (lower quality, stairs only where necessary to retard erosion)

- Existing path from Mathersfield stairs to Mt Pleasant green (slopes need upgrade)
- Existing path, <u>at-risk through stream remediation</u>, rebuilt during or after stream remediation

D. At-risk footpath (currently not maintained). Paths in this category should be signed to warn users if not upgraded.

- Existing steep paths into ravine from parklet at SE corner of St Clair bridge and from Mt Pleasant at Whitehall
- Existing unsafe upper-level path connecting Mathersfield steps to Shaftesbury steps and down to stream by railway bridge. <u>Needs upgrading to Category B</u> (well-used connector).

2. <u>Paths to be maintained and/or upgraded subsequent to stream remediation</u>

All paths in categories A, B, and C including paths in D to be upgraded.

3. <u>Desirable path upgrades</u>

- The potential for upgrading the footpath down from NW end of St Clair bridge at Avoca to create a bike path from St Clair to the Mt Pleasant cemetery needs to be evaluated. Note that the resulting trail would necessarily have steep slopes, like the existing service road down from Avoca. There is little potential for reducing either slope without significant tree removal.
- Upgrade of existing unsafe upper-level connector footpath (new steps and safety rails, stairs down to stream). Required because well-used connector, also to reduce bank erosion.

4. <u>Other man-made trails</u>

There are a number of informal man-made trails connecting public footpaths on the west side of the stream and running parallel to the bike path on the east side of the stream. We make no proposals regarding these. They will exist with or without intervention and, for the most part, are not used enough to warrant conversion to formal paths.

Vale of Avoca erosion

June 2016* - Nov 2017

* Presentation on Ravine Strategy Draft (PE 12.1)

Path washout


March 30, 2017
Undercut trees and slopes, path safe for another month


April 23, 2017
Can still stand between small tree and edge

Path half-washed away

May 7, 2017 (2)

Trees and forsythia washed out, fallen into stream


October 27, 2017
Small tree now undercut, rest of path & 2nd tree threatened

Washed-out bridge and “new spillway”

Stream behind wall in background


May 7, 2017
This was all level with top of wall in 2008

July 30, 2017

Former path to bridge (remnant to 2013), stream to right

Current path to bridge, trees down since July walk

Just one of many trees
(going … going … gone)


May 7, 2017
Undercut but still standing

After July hour-long storm

The remaining bridge
(going … but not yet gone)

Road continuation blocked since July storm

November 16, 2017

New stream on its way (successive washouts)

Sewer outfall

(one of many draining into stream)

Gradually eating into slope (former stream wall at left)

Many more examples
(but not here, no time)

Invasives
(knotweed exploded this summer)

November 16, 2017

More than doubled this summer, now up slope to fences

Knotweed across from another sewer outfall and slope collapse

Many more examples
(spreading fast)