BOARD OF DIRECTORS MEETING

Meeting #:	548	
Date:	June 12, 2020, 9:15 a.m.	
Location:	Meeting to be Held Electronically	

MEMBERS:	K. (Karen) Ras	(Chair)
	T. (Tom) Adams	(Vice Chair)
	J. (John) Brennan	
	S. (Stephen) Dasko	
	A. (Ann) Lawlor	
	M. (Matt) Mahoney	
	T. (Tom) Nevills	
	M. (Michael) Palleschi	
	G. (Grant) Peters	
	R. (Ron) Starr	
REGRETS:	J. (Johanna) Downey	
	M. (Martin) Medeiros	
STAFF PRESENT:	D. (Deborah) Martin-Downs	CAO
	G. (Gayle) Soo Chan	Director, Watershed Knowledge
	T. (Tim) Mereu	Technical Director, Watershed Management
	J. (Jeff) Payne	Director, Corporate Services
	J. (Josh) Campbell	Director, Planning & Development Services
	J. (John) Sinnige	Associate Director, Watershed Management
	T. (Tamara) Chipperfield	Corporate Secretariat
	C. (Claudia) Kasperowicz	Administrator, CAO's Office
	M. (Maureen) Pogue	Sr. Manager, Marketing & Communications
	R. (Roger) Tharakan	Sr. Manager, Financial Services
	M. (Marlene) Ferreira	Sr. Manager, Human Resources
	J. (Jon) MacMull	Sr. Manager, Marketing & Communications
	N. (Neelam) Gupta	Manager, Hydrology & Hydraulics

OTHERS PRESENT: Learie Miller (Region of Peel)

1. APPROVAL OF AGENDA

52/20
Moved By Michael Palleschi
Seconded By Grant Peters

RESOLVED THAT *the agenda be approved as distributed.*

CARRIED

2. DECLARATION OF CONFLICT OF INTEREST

3. MINUTES OF PREVIOUS MEETING

53/20
Moved By John Brennan
Seconded By Ann Lawlor

RESOLVED THAT *the minutes of the 547th meeting of Credit Valley Conservation Authority held May 8, 2020 be approved.*

CARRIED

4. PRESENTATION / DELEGATION

4.1 PRESENTATION: PRIDE MONTH 2020

Marlene Ferreira, Sr. Manager, Human Resources gave a presentation to members on the above mentioned subject.

5. BUSINESS ARISING FROM MINUTES

6. NEW BUSINESS STAFF REPORTS

6.1 DEVELOPMENT, INTERFERENCE WITH WETLANDS, AND ALTERATIONS TO SHORELINES & WATERCOURSE APPLICATIONS

54/20
Moved By Tom Adams
Seconded By Grant Peters

RESOLVED THAT *the Development, Interference with Wetlands and Alterations to Shorelines and Watercourse applications, pursuant to Ontario Regulation 160/06, as approved by staff, be received and appended to the minutes of this meeting as Schedule 'A'; and further*

THAT *the staff approvals for each be endorsed.*

CARRIED

6.2 UPDATED FLOOD HAZARD AND FLOOD RISK MAPPING FOR THE TOWN OF CALEDON AND THE CITY OF MISSISSAUGA

Attached as Schedule 'B' is a report on the above mentioned subject as submitted by Neelam Gupta, Manager, Hydrology & Hydraulics; and Tim Mereu, Technical Director, Watershed Management.

55/20
Moved By Tom Adams
Seconded By Ann Lawlor

WHEREAS *CVC has updated the regulatory flood hazard mapping for the East Credit River and Caledon Creek in Caledon, thirteen watercourses in Mississauga draining directly to Lake Ontario (Applewood, Avonhead, Birchwood, Cawthra, Clearview, Cooksville, Cumberland, Lakeside, Lornewood, Moore, Serson, Tecumseh and Turtle) and six watercourses in Mississauga draining directly to the Credit River (Carolyn, Kenollie, Loyalist, Mary Fix, Stavebank and Wolfdale); and*

WHEREAS *updated hazard mapping is critical for effectively regulating development in floodplains.*

THEREFORE BE IT RESOLVED THAT *the Board of Directors receive the updated flood hazard mapping, and authorize CVC staff to use these updated maps for regulatory purposes; and*

THAT *a freeboard of 0.3 to 0.6 metres be used for floodproofing where the 1:100-year event is used for regulatory flood hazard mapping, and that Section 7.5 of CVC's Regulation and Regulation Policies (April 2010) be updated accordingly; and*

THAT *CVC staff meet with Municipal Councillors to review the mapping from the perspective of structures in the floodplain as well as any changes since the last update; and*

THAT *digital versions of the updated maps be posted where they will be accessible for CVC, our municipal partners, and the public; and further*

THAT *CVC staff coordinate with the City of Mississauga and the Town of Caledon Information Centres to present the updated regulatory mapping to the public.*

CARRIED

6.3 CONSERVATION AREAS RESERVES – 2019 TRANSFER

Attached a Schedule 'C' is a report on the above mentioned subject as submitted by Jeff Payne, Deputy CAO & Director, Corporate Services.

56/20
Moved By Michael Palleschi
Seconded By Grant Peters

WHEREAS *the conservation areas program exceeded the 2019 budgeted revenue target by approximately $180,000; and*

WHEREAS *the CVC Board has supported ongoing contributions to reserves to address potential revenue shortfalls and responsible capital asset planning.*

THEREFORE BE IT RESOLVED THAT *the report entitled "Conservation Area Reserves – 2019 Transfer" be received and appended to the minutes of this meeting as Schedule 'C'; and*

THAT *the Board of Directors grant approval for the transfer of $25,000 from the operating reserve to the parks revenue reserve; and further*

THAT *the Board of Directors grant approval for the transfer of $25,000 from the operating reserve to the conservation area minor structures reserve.*

CARRIED

7. CORRESPONDENCE/INFORMATION ITEMS DISTRIBUTED TO MEMBERS

7.1 PRESENTATION: FLOOD HAZARD AND FLOOD RISK MAPPING

Presentation entitled "Flood Hazard and Flood Risk Mapping" presented by Tim Mereu, Technical Director, Watershed Management.

8. NOTICE OF MOTION

9. QUESTION PERIOD

10. OTHER BUSINESS

Deborah Martin-Downs congratulated Maureen Pogue on her retirement and 15 years of service to CVC.

11. RESOLUTION TO MOVE TO 'IN-CAMERA' SESSION

57/20
Moved By Ron Starr
Seconded By Ann Lawlor

RESOLVED THAT *the Board move to 'In-Camera' session to discuss personnel matters*.

CARRIED

12. RESOLUTION TO MOVE TO OPEN SESSION

58/20
Moved By Ann Lawlor
Seconded By Ron Starr

RESOLVED THAT *the Board move to open session.*

CARRIED

13. RESOLUTION FOLLOWING 'IN-CAMERA' SESSION

59/20
Moved By Ron Starr
Seconded By Stephen Dasko

WHEREAS *the COVID-19 pandemic has resulted in office and parks closures and cessation of some of the authority activities; and*

WHEREAS *some of the revenue streams and staff associated with those ceased functions have been impacted;*

THEREFORE BE IT RESOLVED THAT *the confidential 'in-camera' report entitled "Business Continuity Analysis #3 Due To COVID-19 Pandemic" be received for information; and further*

THAT *an updated business continuity report be provided to the Board at their monthly meetings for the duration of the pandemic and recovery period.*

CARRIED

14. MEETING ADJOURNED

On motion the meeting adjourned at 10:50 a.m.

Credit Valley Conservation
inspired by nature

Pride Month 2020

1

Happy Pride

- CVC is proud to raise the new Pride Flag at Head Office,
- The new flag includes additional stripes that highlight intersectionality within LGBTQ+ communities.

2

Happy Pride

- Brown and black stripes highlight the fight against racism, while honoring black and brown members of the community.
- Blue, pink, and white stripes highlight the transgender community.
- We at CVC are committed to inclusiveness. We value the diverse perspectives, work experiences, lifestyles and cultures that together inform the work we do.
- For our staff and residents in our watershed and we're proud to stand with LGBTQ+ communities as we officially mark Pride Month 2020.

3

inspired by nature

4

DEVELOPMENT, INTERFERENCE WITH WETLANDS, AND ALTERATIONS TO SHORELINES & WATERCOURSES APPLICATIONS *(STAFF APPROVED, FOR BOARD OF DIRECTORS' ENDORSEMENT)*

A) APPLICATION # 20/094

OWNER: Enbridge Gas Inc.

AGENT:

PROPERTY LOCATION: 2305-2313 Embleton Road
Part Lot 5, Concession 5 WHS
City of Brampton

APPLICATION: Development in the Regulated Area to facilitate installation of new gas main and gas header service.

WARD: B 6

B) APPLICATION # 20/096

OWNER:

AGENT: MEM Engineering Inc.

PROPERTY LOCATION: 132 Bonistel Crescent
Part Lot 12, Concession 2 WHS
City of Brampton

APPLICATION: Development in the Regulated Area to facilitate construction of a basement second unit and associated new and enlarged windows.

WARD: B 6

DEVELOPMENT, INTERFERENCE WITH WETLANDS, AND ALTERATIONS TO SHORELINES & WATERCOURSES APPLICATIONS (STAFF APPROVED, FOR BOARD OF DIRECTORS' ENDORSEMENT)

C) APPLICATION # 20/064

OWNER: Town of Halton Hills

AGENT:

PROPERTY LOCATION: Tenth Line right of way between 27 Sideroad & 32 Sideroad
Part Lots 29 & 30, Concession 10
Town of Halton Hills

APPLICATION: Development in the Regulated Area for the purpose of reconstructing 370m of roadway and installing an engineered mesh wall system with erosion and drainage measures to stabilize the slope.

WARD: H 2

D) APPLICATION #: 20/070

OWNER:

AGENT: MacRory Plumbing Inc.

PROPERTY LOCATION: 9 Confederation Street
Part Lot 20, Concession 10
Town of Halton Hills (Glen Williams)

APPLICATION: Development in the Regulated Area for the purpose of installing a new 3/4'" copper water service from curbstop to the existing dwelling.

WARD: H 2

DEVELOPMENT, INTERFERENCE WITH WETLANDS, AND ALTERATIONS TO SHORELINES & WATERCOURSES APPLICATIONS *(STAFF APPROVED, FOR BOARD OF DIRECTORS' ENDORSEMENT)*

E) **APPLICATION #:** 20/079

OWNER:

AGENT: UBDC Inc.

LOCATION: 1042 Beachcomber Road
Part of Lot 11, Concession 2 SDS
City of Mississauga

APPLICATION: Development in the Regulated Area for the purpose of constructing a rear deck and balcony.

WARD: M 1

F) **APPLICATION #:** 20/092

OWNER:

AGENT:

LOCATION: 483 Avonwood Drive
Part of Lot 12, Concession 2 SDS
City of Mississauga

APPLICATION: Development in the Regulated Area for the purpose of converting the existing carport to a garage.

WARD: M 1

DEVELOPMENT, INTERFERENCE WITH WETLANDS, AND ALTERATIONS TO SHORELINES & WATERCOURSES APPLICATIONS (STAFF APPROVED, FOR BOARD OF DIRECTORS' ENDORSEMENT)

G) APPLICATION #: 19/221

OWNER: Town of Halton Hills

AGENT:

LOCATION: Main Street, West Corner of Arborglen Drive
Part Lots 16 & 17, Concession 8
Town of Halton Hills (Georgetown)

APPLICATION: Development in the Regulated Area for the purpose of replacing a pedestrian bridge.

WARD: H 3

H) APPLICATION #: 20/095

OWNER:

AGENT: David Small Designs

LOCATION: 1535 Glenburnie Road
Part of Lot 2, Range 2 CIR
City of Mississauga

APPLICATION: Development in the Regulated Area for the purpose of constructing a new two-storey dwelling, rear paverstone patios, and associated grading.

WARD: M 1

DEVELOPMENT, INTERFERENCE WITH WETLANDS, AND ALTERATIONS TO SHORELINES & WATERCOURSES APPLICATIONS *(STAFF APPROVED, FOR BOARD OF DIRECTORS' ENDORSEMENT)*

I) APPLICATION #: 20/104

OWNER: Region of Peel

AGENT: Jacobs

LOCATION: Derry Road at Highway 401
Part of Lot 11, Concession 5 WHS
City of Mississauga

APPLICATION: Development in a regulated area and floodplain of Mullett Creek to facilitate construction of a new watermain.

WARD: M 9

J) APPLICATION #: 20/107

OWNER:

AGENT: Calder Engineering Ltd.

LOCATION: 49 Credit Road
Part Lot 31, Concession 3 WHS
Town of Caledon

APPLICATION: Development in the Regulated Area and floodplain of the Credit River to facilitate the replacement of a septic tank.

WARD: C 2

DEVELOPMENT, INTERFERENCE WITH WETLANDS, AND ALTERATIONS TO SHORELINES & WATERCOURSES APPLICATIONS (STAFF APPROVED, FOR BOARD OF DIRECTORS' ENDORSEMENT)

K) APPLICATION #: 20/110

OWNER:

AGENT:

LOCATION: 9775 Wellington Road 124
Part Lot 17, Concession 11
Town of Erin

APPLICATION: Development in the Regulated Area for the purpose of constructing a 16' x 32' inground pool.

WARD: N/A

L) APPLICATION #: 18/378

OWNER:

AGENT: W.E. Oughtred & Associates

LOCATION: 1140 Hair Boulevard
Part Lot 7, Concession 2 SDS
City of Mississauga

APPLICATION: Development in the Regulated Area for the purpose of construction of a single family dwelling and site grading.

WARD: M 1

DEVELOPMENT, INTERFERENCE WITH WETLANDS, AND ALTERATIONS TO SHORELINES & WATERCOURSES APPLICATIONS *(STAFF APPROVED, FOR BOARD OF DIRECTORS' ENDORSEMENT)*

M) APPLICATION #: 20/105

OWNER:

AGENT: Cedar Springs Landscape Group

LOCATION: 1300 Queen Victoria Avenue
Part of Lot 25, Concession 2 SDS
City of Mississauga

APPLICATION: Development in the Regulated Area for the purpose of constructing a 19.87m^2 pavilion.

WARD: M 2

N) APPLICATION #: 20/028

OWNER: City of Brampton

AGENT: Chisholm, Fleming and Associates

LOCATION: Sparrow Park
Part Lot 13, Concession 1 WHS
City of Brampton

APPLICATION: Development in a regulated area to facilitate replacement of a pedestrian bridge.

WARD: B 4

DEVELOPMENT, INTERFERENCE WITH WETLANDS, AND ALTERATIONS TO SHORELINES & WATERCOURSES APPLICATIONS (STAFF APPROVED, FOR BOARD OF DIRECTORS' ENDORSEMENT)

O) APPLICATION #: 20/033

OWNER: City of Brampton

AGENT: Chisholm, Fleming and Associates

LOCATION: Curtis Park
Part Lot 13, Concession 1 WHS
City of Brampton

APPLICATION: Development in a regulated area to facilitate replacement of a pedestrian bridge.

WARD: B 3

P) APPLICATION #: 20/055

OWNER: Region of Peel

AGENT: HDR Inc.

LOCATION: Queen Street over Fletcher's Creek
Part Lots 5 & 6, Concession 1 WHS
City of Brampton

APPLICATION: Development in a regulated area to facilitate rehabilitation of a bridge over Fletcher's Creek.

WARD: B 1

DEVELOPMENT, INTERFERENCE WITH WETLANDS, AND ALTERATIONS TO SHORELINES & WATERCOURSES APPLICATIONS *(STAFF APPROVED, FOR BOARD OF DIRECTORS' ENDORSEMENT)*

Q) APPLICATION #: 19/077

OWNER:

AGENT: Hudson Restoration

LOCATION: 26 Main Street
Part Lot 14, Concession 9
Town of Erin

APPLICATION: Development in the floodplain associated with the West Credit River for the purpose of constructing a 74.37m^2 two storey dwelling with crawlspace, covered porch, septic system and associated grading.

WARD: N/A

R) APPLICATION #: 20/060

OWNER:

AGENT: SIMPL Design Studio

LOCATION: 903 Beechwood Avenue
Part Lot 12, Concession 3 SDS
City of Mississauga

APPLICATION: Development in the Regulated Area for the purpose of modifications to an existing foundation, front porch and two rear decks and a balcony.

WARD: M 1

DEVELOPMENT, INTERFERENCE WITH WETLANDS, AND ALTERATIONS TO SHORELINES & WATERCOURSES APPLICATIONS (STAFF APPROVED, FOR BOARD OF DIRECTORS' ENDORSEMENT)

S) APPLICATION #: 20/117

OWNER:

AGENT: DK Excavating Ltd.

LOCATION: 12932 Sixth Line
Part of Lot 25, Concession 6
Town of Halton Hills

APPLICATION: Development in the Regulated Area to replace a septic system.

WARD: H 2

T) APPLICATION #: 20/114

OWNER:

AGENT:

LOCATION: 10 Allegro Drive
Part Lot 4, Concession 3 WHS
City of Brampton

APPLICATION: Development in the Regulated Area to facilitate construction of a rear deck,

WARD: B 4

DEVELOPMENT, INTERFERENCE WITH WETLANDS, AND ALTERATIONS TO SHORELINES & WATERCOURSES APPLICATIONS *(STAFF APPROVED, FOR BOARD OF DIRECTORS' ENDORSEMENT)*

U) APPLICATION #: 20/111

OWNER:

AGENT:

LOCATION: 4995 Fourth Line
Part Lot 3, Concession 5
Town of Erin

APPLICATION: Development in the Regulated Area for the purpose of constructing a house, shop driveway and septic system.

WARD: N/A

V) APPLICATION #: 20/113

OWNER:

AGENT: David Small Designs

LOCATION: 224 Webster's Lane
Part of Lot 6, Range 1 CIR
City of Mississauga

APPLICATION: Development in the Regulated Area for the purpose of constructing a studio with deck above, paverstone terrace, stone walk, and associated grading.

WARD: M 1

DEVELOPMENT, INTERFERENCE WITH WETLANDS, AND ALTERATIONS TO SHORELINES & WATERCOURSES APPLICATIONS (STAFF APPROVED, FOR BOARD OF DIRECTORS' ENDORSEMENT)

W) APPLICATION #: 20/075

OWNER: Branthaven Queen West Inc.

AGENT:

LOCATION: 1817 and 1831 Queen Street West
Part of Lot 5, Concession 4 WHS
City of Brampton

APPLICATION: Development in the Regulated Area to facilitate construction of a temporary sales office.

WARD: B 4

X) APPLICATION #: 19/216

OWNER: Region of Peel

AGENT: RV Anderson Associates Ltd.

LOCATION: Mayfield Rd – between Mississauga Rd and Chinguacousy Rd
Part Lot 17, Concession 3 & 4 WHS
City of Brampton

APPLICATION: Alteration to a watercourse and development in a regulated area to facilitate widening of Mayfield Road.

WARD: B 6

TO: The Chair and Members
of the Board of Directors,
Credit Valley Conservation

SUBJECT: **UPDATED FLOOD HAZARD AND FLOOD RISK MAPPING FOR THE TOWN OF CALEDON AND THE CITY OF MISSISSAUGA**

PURPOSE: **Receipt of updated Flood Hazard and Flood Risk Mapping that will guide the application of floodplain regulations and aid in managing flood risk in Town of Caledon and City of Mississauga**

BACKGROUND:

Under the authority of Section 28 of the *Conservation Authorities Act*, and implemented through Regulation 160/06, flood hazard mapping is a critical tool used by CVC to regulate proposed development in the floodplain. CVC's authority is implemented under the guidance of Section 7.0 of CVC's Regulation and Regulation Policies (April 2010).
Flood hazard mapping illustrates the regulatory floodplain, defined as the greater of flooding generated by 1:100 year flood event or the regional storm (Hurricane Hazel) if it were to occur over the Credit River watershed.

The majority of flood hazard mapping in the Credit River Watershed is 15 to 30 years old. Through, general levy, special funding received from the Region of Peel, supplemented by additional federal funding delivered through the National Disaster Mitigation Program (NDMP), CVC is undertaking a multi-year update of existing floodplain mapping. The need for the update is predicated on several considerations: advancements in the state-of-the art of floodplain mapping models, land use changes that have occurred since the existing mapping was prepared, trends associated with climate change, and availability of monitoring data to facilitate increased mapping accuracy.

As of March 31, 2020, CVC, has updated mapping for 19 watercourses in Mississauga. These watercourses were selected as a priority for updating due to the number of structures in the floodplain, their risk of flooding due to high intensity summer storms, as well as on-going re-development pressure in the southern parts of Mississauga. Currently there are 692 structure in the floodplain, with the majority of these located along Cooksville Creek downstream of Eglinton Avenue. The update did not include the Credit River floodplain through Mississauga downstream of Highway 401 as the floodplain is contained within the valley with no structures at risk of flooding.

CVC has also generated new hazard mapping for Caledon Creek and the East Credit River in the Town of Caledon. Previously only estimates were used to assess development potential along these rural watercourses.

Through the funding received from NDMP the updated mapping program undertaken by CVC has been expanded to also include flood risk mapping. Risk mapping provides additional information that will aid planners, regulators and first responders in assessing and managing flood risk. Although introduced in this report, the development of risk mapping is on-going and will be presented in more detail at a later date.

On-going mapping projects include Mill Creek and Monora Creek in the Town of Orangeville, and Sheridan Creek in the City of Mississauga. Future projects will focus on updating flood hazard maps in flood damage centres north of Highway 401.

ANALYSIS:

Prior to the current update, flood hazard maps were paper products representative of a single point in time. They typically delineated the regulatory floodplain and identified flood elevations associated with the 1:100 year event and the regional storm (Hurricane Hazel). These maps:

- Were not always based on calibrated models due to lack of monitoring records,
- Were only as accurate as the base mapping available at the time (topography frequently only accurate to 0.5 metres),
- Did not reflect on-going land use changes,
- Did not consider the potential impact of climate change,
- Did not identify the extent or depth of flooding associated with more frequent flood events, and
- Did not delineate the extent of flooding where flow exited the floodplain and entered urban areas.

Further, the mapping did not infer an understanding of flood risk nor were they designed to aid in actively managing flood risk, either through infrastructure planning or in response to a flood event.

Methodology

The updated mapping addresses each of the limitations of the existing mapping. The primary steps in developing flood hazard and flood risk mapping include:

a) hydrologic modelling to generate flow rates,
b) identification of regulatory flows,
c) development of base mapping,
d) survey of hydraulic structures such as bridges and culverts,
e) hydraulic modelling to generate flood elevations, and

a) Hydrologic Modelling

Flow rates used for calculating flood elevations were generated using calibrated hydrologic models developed by CVC. The real-time gauge network played a key role in calibrating the hydrologic models.

Once the hydrologic models were calibrated, historical meteorological records were used to generate peak flows for the regional storm and events with return periods ranging from two years to 350 years.

As a next step, the projected impact of climate change was applied to estimate peak flows for meteorological conditions projected 30 to 50 years into the future, as calculated by the Institute for Catastrophic Loss Reduction (ICLR) based at Western University. The results indicate that frequency of flooding is estimated to increase by three-fold. For example, an event with a current return period of 1:350 years will have a future return period of 1:100 years, and an event with a current return period of 1:100 years will have a future return period of 1:30 years.

Using this method, where the Regional Storm flow rates are used for flood hazard mapping there is no change between current conditions and future conditions associated with climate change as it is a singular event with no prescribed return period.

b) Regulatory Flows

Existing hazard mapping in CVC's jurisdiction is based on the greater of the existing 1:100 year flood event or Hurricane Hazel. This approach conforms with current Ministry of Natural Resources and Forestry (MNRF) guidelines for flood hazard mapping.

In cases where the flood hazard mapping is based on the existing 1:100 year event there is concern that the flood hazard mapping will not adequately reflect future conditions, and as such will underestimate the future extent of flooding.

At this time CVC is waiting for provincial direction on how climate change should be accounted for in flood hazard mapping. Recommendation number five of the recently completed "Independent Review of the 2019 Flood Events in Ontario", completed on the request of the Minister of Natural Resources and Forestry, specifically recommends that the province update technical guidelines to consider climate change. In the interim we rely on federal guidance documents that recommend adding a freeboard to flood elevations in order to account for uncertainty with respect to the ultimate impact of climate change. Once the provincial guidelines are updated and approved, CVC will review our approach to flood hazard mapping from a climate change perspective.

c) Base Mapping

The hazard mapping is based on LiDAR topographic data, typically accurate to within 0.15 metres. The LiDAR data was purchased by CVC for floodplain mapping, however our purchase agreement allows us to share the mapping with our municipal partners.

d) Field Survey

Bridges and culverts typically have a very significant impact on flood elevations. As a result, all bridges and culverts were surveyed to ensure accuracy.

e) Hydraulic Modelling

Hydraulic models are applied to estimate the flood elevations. In all cases the U.S. Army Corp of Engineers program HEC-RAS was used. This is the standard program used across Ontario. In recent years its capabilities have increased considerably from a model focused on riverine flooding to one that can also map spills and urban flooding.

Results

Updated Hazard Mapping

The extent of the hazard mapping that has been updated is illustrated in the following figures:

- Schedule 'B', Appendix 1 highlights mapping that has been updated in the City of Mississauga east of the Credit River, and includes the following creeks: Applewood, Serson, Cawthra, Cooksville, Cumberland, Mary Fix, Kenollie, Stavebank, Wolfdale and Carolyn.

- Schedule 'B', Appendix 2 highlights mapping that has been updated in the City of Mississauga and Town of Oakville west of the Credit River, and includes the following creeks: Loyalist, Tecumseh, Lornewood, Moore, Birchwood, Turtle, Lakeside, Avonhead and Clearview.

- Schedule 'B'. Appendix 3 highlights new mapping that has been developed for Caledon Creek and the East Credit River in the Town of Caledon.

Schedule 'B', Appendix 4 is a sample flood hazard map for the Rhonda Valley neighbourhood along Cooksville Creek in the City of Mississauga. This neighbourhood suffered extensive flooding during extreme events of August 4, 2009 and July 8, 2013. Data from the flooding aided in calibrating the hydrologic model to ensure that it accurately reflected what happened in 2009 and 2013. The regulatory floodlines are based on Hurricane Hazel, with elevations at individual cross-sections provided for both the 1:100 year event and Hurricane Hazel.

The regulatory flow used for generating the hazard mapping are listed in Table 1. As previously noted, where the 1:100 year event is used the implications of climate change on the regulatory floodlines will be reviewed once provincial guidelines are updated. In the interim, where the 1:100 year event is used for generating hazard mapping, CVC will require building openings located within regulated areas to be 0.3 to 0.6 metres above the regulatory flood elevation. This compares to the current requirement of 0.3 metres. The actual required freeboard value will depend on local considerations such as site constraints, the projected future flood elevations and the consequence of the increase.

The hazard mapping is available digitally or as individual tiles (printed or PDFs). Tile delineation is noted on Schedule 'B', Appendix 1 to Appendix 3. CVC is currently developing digital mapping products that will be accessible on-line by CVC staff, watershed municipal partners and public. The digital mapping will be available later in 2020.

Table 1: Regulatory Flow and Freeboard

Regional Storm (Hurricane Hazel)	1:100 Year Event
- Applewood Creek (downstream of CNR) - Cawthra Creek - Clearview Creek - Cooksville Creek (upper and lower main branch) Kenollie Creek (downstream of QEW)	- Applewood Creek (upstream of CNR) - Avonhead Creek - Birchwood Creek (upstream of CNR) - Cumberland Creek - Cooksville Creek (east branch only)
- Birchwood Creek (downstream of CNR) - Carolyn Creek - Lornewood Creek (main branch) - Mary Fix Creek (downstream of Hillcrest Ave)	- Kenollie Creek (upstream of QEW) - Lakeside Creek - Lornewood Creek (west branch) - Mary Fix Creek (upstream of Hillcrest Ave)
- Loyalist Creek - Serson Creek (downstream of Lakeshore Blvd)) - Tecumseh Creek - Turtle Creek (downstream of Lakeshore Blvd)	- Moore Creek - Serson Creek (upstream of Lakeshore Blvd)) - Stavebank Creek - Turtle Creek (upstream of Lakeshore Blvd) - Wolfdale Creek
- East Credit River - Caledon Creek	
Use 0.3 metre freeboard	Use 0.3 to 0.6 metre freeboard (See Note)
Note: Value of Freeboard will depend on local considerations such as site constraints, the projected future flood elevations and the consequence of the increase.	

Changes to Hazard Mapping

As a result of the updated flood hazard mapping there are generally minor changes in the delineation of the floodplain compared to the existing mapping. The changes are the result of improvements in base mapping and modelling techniques. All changes will be reviewed with the municipal Councillors prior to release of the update mapping.

Serson Creek and Turtle Creek will have a significant reduction on the extent of flooding. This reduction is due to two factors: recent upgrades to culvert capacity by adding flood relief culverts under the CN Rail (CNR) and refinements to the methodology for modelling the CNR culverts. This reduction reflects on-going efforts by the City of Mississauga and Metrolink to reduce flood risk. Schedule ‘B”, Appendix 5 illustrates the extent of the reduction for Serson Creek.

Risk Mapping

Risk mapping refers to a broad range of mapping products that will aid planners, regulators and first responders in assessing and managing flood risk. CVC is preparing risk maps for all recently completed mapping projects. Examples include

a) Inundation Maps - illustrate flood depth and/or velocity for a specified return period.
b) Spill Maps – illustrate flood route, frequency, and depth of flooding associated with spill from riverine floodplain to urban areas.
c) Flood Risk Screening Maps - incorporate flooding of infrastructure, transportation routes and vulnerable populations. Different maps may be prepared for floods of different severity.

a) Inundation Maps

Schedule 'B', Appendix 6 is an example of an inundation map. The colour coding delineates flood depths for the regional storm. The colours specifically correspond to CVC floodplain development policies, and as such provide a visual tool to guide applicants and CVC staff in reviewing permit applications. They also provide an understanding of the consequence of flooding. For example, as illustrated Schedule 'B', Appendix 6, flood depth adjacent to Thornwood Public School yard exceeds 2.0 metres, whereas flood depth on Rhonda Valley Road at Acala Crescent is 0.5 metres. The difference in flood depth aids in understanding relative risk and in establishing policies or building infrastructure that will reduce risk.

b) Spill Maps

Typically flood hazard mapping is limited to mapping along the riverine floodplain. However, in many locations the flooding will spill from the floodplain into an urban area. In the past modelling tools were not available to assess the extent and consequence of the spill. However, as part of the current update CVC has been able to quantify and map all of these spills. Schedule 'B', Appendix 7 provides an example where flow from both Cawthra Creek and Cooksville Creek spills on to Cawthra Road and then flows southerly to Lake Ontario. Although CVC does not regulate urban spill, the mapping does provide guidance to both CVC and the municipality in evaluating development proposals or upgrading infrastructure with the objective of reducing flood risk.

c) Flood Risk Screening Maps

Flood screening maps represent a series of maps that incorporate flooding of infrastructure, transportation routes and vulnerable populations (e.g. daycares or nursing homes). These screening maps will be developed in consultation with municipal emergency response teams to ensure that they are effect in communicating risk.

Next Steps

The next steps will focus on releases of the updated mapping, ongoing updating across the watershed, and the maintenance of the new maps to ensure that they remain current moving forward.

COMMUNICATIONS PLAN:

The updated flood hazard mapping will be communicated through a three-part program.

1. As a first step CVC will meet with Municipal Councillors to review the mapping from the perspective of structures in the floodplain as well as any changes since the last update.
2. The updated mapping will then be presented at public information centres that are being coordinated with the City of Mississauga and possibly the Town of Caledon.
3. An on-line tool will be completed in 2020 that will allow CVC, watershed municipal partners and the public-at-large to access the updated flood hazard maps.

FINANCIAL IMPLICATIONS OF ALTERNATIVES:

The development of flood hazard mapping is funded through Peel special levy in the amount of $610,000/year and the general levy in the amount of $106,000/year (2020 budget). From 2015 to 2020 these funds were supplemented by an additional $790,000 received from the National Disaster Mitigation Program (NDMP). Moving forward, the existing Peel special and general levy funding is sufficient to complete the update of older maps and ensure the most recent maps remain current. Any additional funding received through provincial and federal programs would accelerate the program but is not necessary for its success.

CONCLUSION:

CVC has updated flood hazard maps (61 map tiles) for 19 watercourses in Mississauga. These watercourses represent those with the highest risk of flooding. CVC has also developed new flood hazard maps for Caledon Creek and the East Credit River (21 map tiles).

The updated flood hazard maps provide CVC with mapping products that have moved from static paper maps that represent a point in time with limited information, to digital mapping that can be updated on a regular basis and provides much more utility in terms of floodplain regulation.

Building from the hazard maps, CVC is now able to develop a series of risk mapping products that will aid CVC and our municipal partners in understanding, managing and reducing flood risk in the coming years.

RECOMMENDED RESOLUTION:

WHEREAS *CVC has updated the regulatory flood hazard mapping for the East Credit River and Caledon Creek in Caledon, thirteen watercourses in Mississauga draining directly to Lake Ontario (Applewood, Avonhead, Birchwood, Cawthra, Clearview, Cooksville, Cumberland, Lakeside, Lornewood, Moore, Serson, Tecumseh and Turtle) and six watercourses in Mississauga draining directly to the Credit River (Carolyn, Kenollie, Loyalist, Mary Fix, Stavebank and Wolfdale); and*

WHEREAS *updated hazard mapping is critical for effectively regulating development in floodplains.*

THEREFORE BE IT RESOLVED THAT *the Board of Directors receive the updated flood hazard mapping, and authorize CVC staff to use these updated maps for regulatory purposes; and*

THAT *a freeboard of 0.3 to 0.6 metres be used for floodproofing where the 1:100-year event is used for regulatory flood hazard mapping, and that Section 7.5 of CVC's Regulation and Regulation Policies (April 2010) be updated accordingly; and*

THAT *CVC staff meet with Municipal Councillors to review the mapping from the perspective of structures in the floodplain as well as any changes since the last update; and*

THAT *digital versions of the updated maps be posted where they will be accessible for CVC, our municipal partners, and the public; and further*

THAT *CVC staff coordinate with the City of Mississauga and the Town of Caledon Information Centres to present the updated regulatory mapping to the public.*

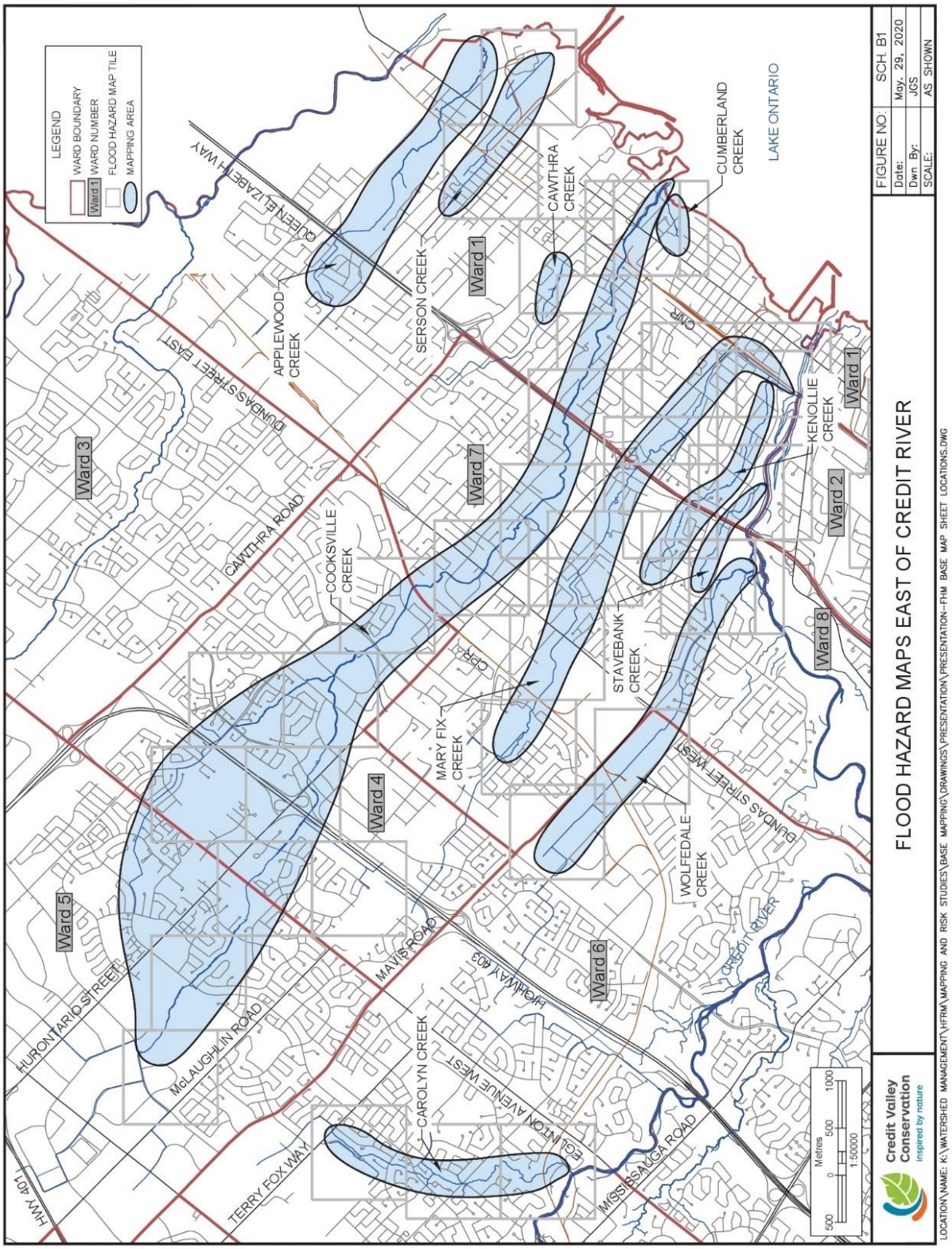
Submitted by:

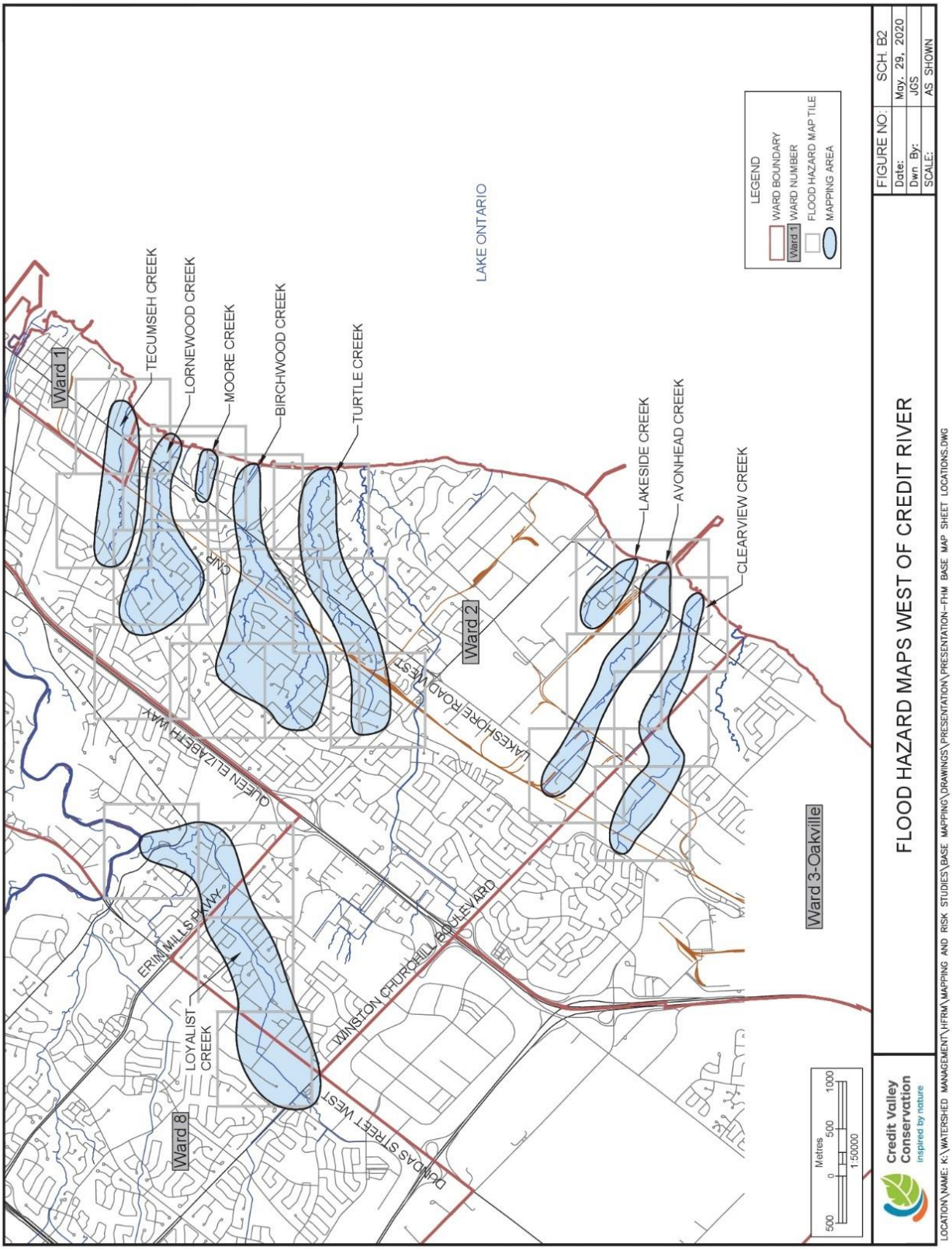
Neelam Gupta, P.Eng.
Manager, Hydrology & Hydraulics

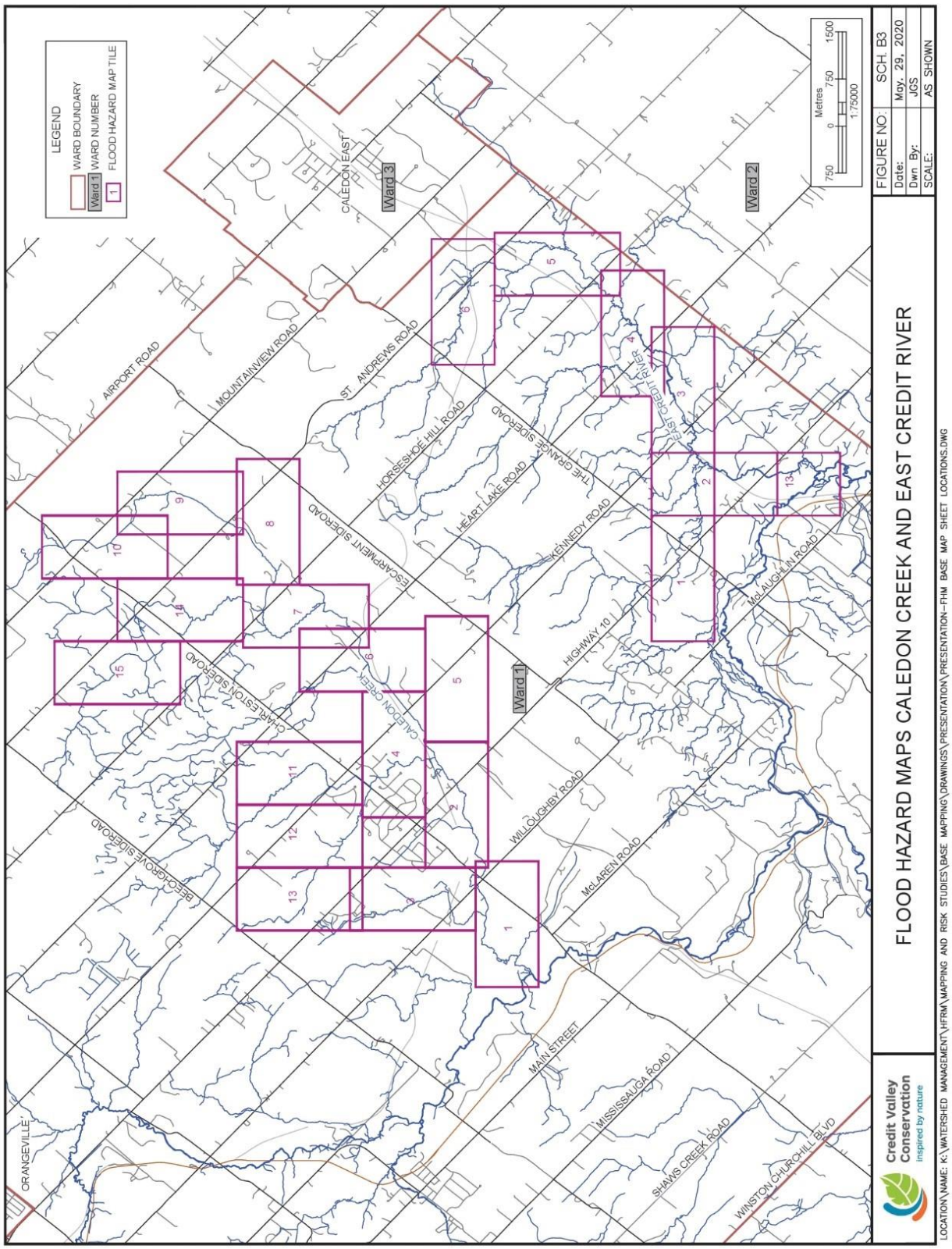
Tim Mereu, P.Eng.
Technical Director, Watershed Management

Recommended by:

Deborah Martin-Downs
Chief Administrative Officer


LEGEND
WARD BOUNDARY
WARD NUMBER
FLOOD HAZARD MAP TILE
MAPPING AREA
Ward 1
Ward 2
Ward 3
Ward 4
Ward 5
Ward 6
Ward 7
Ward 8
QUEEN ELIZABETH WAY
DUNDAS STREET EAST
APPLEWOOD CREEK
SERSON CREEK
CAWTHRA CREEK
CUMBERLAND CREEK
LAKE ONTARIO
CNR
KENOLLIE CREEK
CAWTHRA ROAD
COOKSVILLE CREEK
MARY FIX CREEK
CPR
STAVEBANK CREEK
DUNDAS STREET WEST
WOLFEDALE CREEK
CREDIT RIVER
MAVIS ROAD
HIGHWAY 403
HURONTARIO STREET
McLAUGHLIN ROAD
CAROLYN CREEK
EGLINTON AVENUE WEST
TERRY FOX WAY
MISSISSAUGA ROAD
HWY 401
Metres
0 500 1000
1:50000
500
FLOOD HAZARD MAPS EAST OF CREDIT RIVER
Credit Valley Conservation
Inspired by nature
FIGURE NO: SCH. B1
Date: May. 29, 2020
Dwn By: JGS
SCALE: AS SHOWN
LOCATION_NAME: K:_WATERSHED MANAGEMENT_HFRM_MAPPING AND RISK STUDIES_BASE MAPPING_DRAWINGS_PRESENTATION_PRESENTATION-FHM BASE MAP SHEET LOCATIONS.DWG


FLOOD HAZARD MAPS WEST OF CREDIT RIVER
FIGURE NO. SCH. B2
Date: May. 29, 2020
Dwn By: JGS
SCALE: AS SHOWN
Credit Valley Conservation
inspired by nature
LEGEND
WARD BOUNDARY
WARD NUMBER
FLOOD HAZARD MAP TILE
MAPPING AREA
LAKE ONTARIO
Ward 1
Ward 2
Ward 3-Oakville
Ward 8
TECUMSEH CREEK
LORNEWOOD CREEK
MOORE CREEK
BIRCHWOOD CREEK
TURTLE CREEK
LAKESIDE CREEK
AVONHEAD CREEK
CLEARVIEW CREEK
LOYALIST CREEK
QUEEN ELIZABETH WAY
ERIN MILLS PKWY
WINSTON CHURCHILL BOULEVARD
DUNDAS STREET WEST
LAKESHORE ROAD WEST
OLIVE
Metres
500 0 500 1000
1:50000
LOCATION\NAME: K:\WATERSHED MANAGEMENT\HFRM\MAPPING AND RISK STUDIES\BASE MAPPING\DRAWINGS\PRESENTATION\PRESENTATION-FHM BASE MAP SHEET LOCATIONS.DWG


LEGEND
WARD BOUNDARY
Ward 1 WARD NUMBER
1 FLOOD HAZARD MAP TILE
Ward 1
Ward 2
Ward 3
CALEDON EAST
ORANGEVILLE
AIRPORT ROAD
MOUNTAINVIEW ROAD
ST. ANDREWS ROAD
HORSESHOE HILL ROAD
THE GRANGE SIDEROAD
HEART LAKE ROAD
KENNEDY ROAD
McLAUGHLIN ROAD
HIGHWAY 10
ESCARPMENT SIDEROAD
CHARLESTON SIDEROAD
BEECHGROVE SIDEROAD
CALEDON CREEK
EAST CREDIT RIVER
WILLOUGHBY ROAD
McLAREN ROAD
MAIN STREET
MISSISSAUGA ROAD
SHAWS CREEK ROAD
WINSTON CHURCHILL BLVD
Metres
750 0 750 1500
1:75000
Credit Valley Conservation
inspired by nature
FLOOD HAZARD MAPS CALEDON CREEK AND EAST CREDIT RIVER
FIGURE NO: SCH. B3
Date: May. 29, 2020
Dwn By: JGS
SCALE: AS SHOWN
LOCATION\NAME: K:\WATERSHED MANAGEMENT\HFRM\MAPPING AND RISK STUDIES\BASE MAPPING\DRAWINGS\PRESENTATION\PRESENTATION-FHM BASE MAP SHEET LOCATIONS.DWG

SAMPLE FLOOD HAZARD MAP
FIGURE NO: SCH. B4
Date: Jun. 1, 2020
Dwn. By: JGS
SCALE: AS SHOWN
Credit Valley Conservation
Inspired by nature
RHONDA VALLEY AT ACALA CRESCENT
THORNWOOD PUBLIC SCHOOL
2D AREA
1D
2D
FLOOD ELEVATIONS SHOWN ARE FOR 1D AREA ONLY
Metres
1:4000
LOCATION\NAME: K:\WATERSHED MANAGEMENT\HFRM\MAPPING AND RISK STUDIES\BASE MAPPING\DRAWINGS\PRESENTATION\PRESENTATION-SAMPLE FLOOD HAZARD MAP.DWG

Credit Valley Conservation
inspired by nature

CHANGE IN FLOOD HAZARD LINE (SERSON CREEK)

FIGURE NO:	SCH. B5
Date:	Jun. 1, 2020
Dwn By:	JGS
SCALE:	NTS

LOCATION\NAME: K:\WATERSHED MANAGEMENT\HFRM\MAPPING AND RISK STUDIES\BASE MAPPING\DRAWINGS\PRESENTATION\PRESENTATION FLOOD HAZARD LINE CHANGE ON SERSON CREEK.DWG

SCHEDULE 'B', APPENDIX 5
2020-06-12

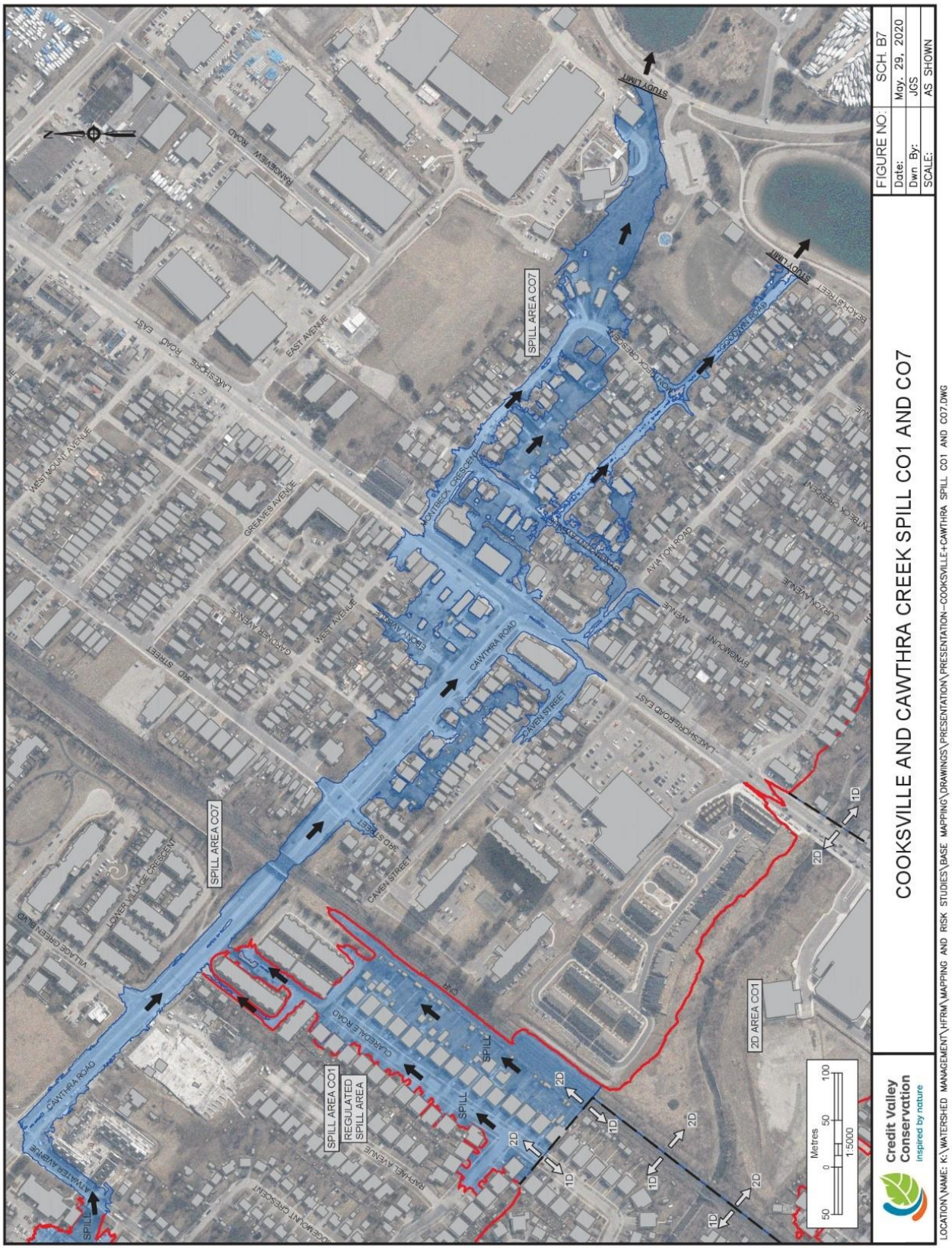
Credit Valley Conservation
inspired by nature

SAMPLE FLOOD DEPTH MAP

FIGURE NO:	SCH. B6
Date:	May. 29, 2020
Dwn By:	JGS
SCALE:	AS SHOWN

LOCATION\NAME: K:\WATERSHED MANAGEMENT\HFRM\MAPPING AND RISK STUDIES\BASE MAPPING\DRAWINGS\PRESENTATION\PRESENTATION–FLOOD DEPTHS AT RHONDA VALLEY.DWG

SCHEDULE 'B', APPENDIX 6
2020-06-12


COOKSVILLE AND CAWTHRA CREEK SPILL CO1 AND CO7
FIGURE NO: SCH. B7
Date: May. 29, 2020
Dwn By: JGS
SCALE: AS SHOWN
Credit Valley Conservation
inspired by nature
LOCATION\NAME: K:\WATERSHED MANAGEMENT\HFRM\MAPPING AND RISK STUDIES\BASE MAPPING\DRAWINGS\PRESENTATION\PRESENTATION-COOKSVILLE+CAWTHRA SPILL CO1 AND CO7.DWG
SPILL AREA CO7
SPILL AREA CO1
REGULATED SPILL AREA
2D AREA CO1
STUDY LIMIT
CAWTHRA ROAD
CAVEN STREET
CLAREDALE ROAD
RAPHAEL AVENUE
ATWATER AVENUE
LOWER VILLAGE CRESCENT
VILLAGE GREEN BLVD
3RD STREET
GARDNER AVENUE
WEST AVENUE
GREAVES AVENUE
WESTMOUNT AVENUE
LAKESHORE ROAD EAST
EAST AVENUE
RANGEVIEW ROAD
MONTBECK CRESCENT
AVIATION ROAD
BYNGMOUNT AVENUE
CURZON AVENUE
BEACH STREET
GOODWIN ROAD
Metres
50 0 50 100
1:5000

TO: The Chair and Members
of the Board of Directors,
Credit Valley Conservation

SUBJECT: **CONSERVATION AREAS RESERVES – 2019 TRANSFER**

PURPOSE: **To request approval to transfer funds to the Conservation Areas Reserves based on 2019 audited year-end.**

BACKGROUND:

Reserves and reserve funds are established under approval of the Credit Valley Conservation (CVC) Authority Board of Directors. Reserves support long-term financial stability and prudent financial planning. The purpose of a reserve is to set aside funds to help offset future capital needs, obligations, pressures and costs. A reserve can cover both capital (example: fleet reserve) and operating (example: park revenue offset reserve). The reserve is drawn down to cover necessary expenditures associated with the purpose of the reserve. The benefit of reserves includes:

- Provide for life-cycle replacement of assets;
- Support a state of good repair of assets;
- Reduces unanticipated pressure on cash-flows;
- Reduce range of fluctuations in levy; and
- Supports longer term financial planning.

On June 8, 2018, the Board approved the creation of two reserves that support the conservation areas under resolution #53/18. The two reserves are as follows:

1. **Parks Revenue** - Operating reserve to address revenue shortfall, such as bad weather resulting in missed revenue targets

2. **Conservation Area Minor Structures** - Capital reserve that includes trails, boardwalks, bridges, pavilions, comfort stations, large signage, amphitheaters, sidewalks, retaining walls, storage sheds

On December 13, 2019, the Board was provided with an update on the balance of all reserves under resolution #109/19. The reserve balances at 2019 year-end along with 2020 budgeted in year transfers are set out in Table 1 later in this report.

ANALYSIS:

The 2019 financial year-end activities were completed with the approval by the Board of the 2019 Audited Financial Statements on April 17, 2020 under resolution #39/20. Analysis based on the audited year-end indicated that conservation areas (CAs) net surplus was approximately $180,000. At year-end the $180,000 in surplus was held within the CVC operating reserve.

Of note, another $34,000 in net surplus was realized from the Badlands. In accordance with the current Badlands management agreement between CVC and the Ontario Heritage Trust (OHT) the $34,000 surplus will be invested back into the property to improve operations and implementation of the management plan.

Staff are recommending that a portion of the $180,000 be transferred at this time from the CVC operating reserve to the park revenue and conservation area minor structures reserves as part of our ongoing efforts to incrementally build reserves. The amount to be transferred would be $50,000 in total - $25,000 each to the two reserves, detailed in Table 1 below.

Table 1 – Reserve Summary

Reserve by name/purpose	Reserve Balance @ Jan 1st, 2019 ($)	Reserve Balance @ Jan 1st, 2020 ($)	Reserve Budgeted Contribution in 2020 ($)	Proposed Transfer from Cash Reserve based on CA 2019 revenue	2020 in year Adjusted Balance (Budgeted + Transfer)
Parks Revenue	25,000	35,000	6,600	25,000	66,600
Conservation Area (Minor Structures)	75,841	95,841	13,400	25,000	134,241

The proposed transfers are a part of the 2019 year-end process and are in support of building reserves as a matter of ongoing best practice. The remaining $130,000 will remain in the operating reserve

Staff have been providing the Board with additional information through the 'Business Continuity Analysis Report Due to COVID-19 Pandemic' reports since April related to the impacts of the pandemic. The proposed transfer to the parks revenue reserve is not intended to address the 2020 in-year impacts resulting from the current pandemic given the situation is ongoing. CA revenue impacts are further discussed in the June continuity report listed on the in camera agenda.

While it would be an option to go ahead and move the remaining $130,000 to the parks revenue reserve, staff is not recommending any additional transfer to reserve above the $25,000 at this time. There remains a great deal of uncertainty that impacts our ability to forecast how revenues will track over the course of 2020.

The $130,000 in the operating reserve can be transferred at any time, and it is for that reason staff are recommending that we essentially keeping our options open for now to

see how best to address the challenges that will face the corporation overall and not just for parks.

COMMUNICATIONS PLAN:

There are no communications implications for this project.

FINANCIAL IMPLICATIONS:

The transfer of funds represents prudent planning to address both the impact of the pandemic on revenue and to ensure continued long-term planning to maintain corporate capital assets. There is no 2020 budget impact in moving a total of $50,000 from the operating reserve to the two specified conservation area reserves. The funds identified to be transferred were from revenue in excess of the 2019 budgeted revenue targets.

CONCLUSION:

The establishment of reserves demonstrates the commitment of the authority to address gaps and to begin to implement long term financial planning. Staff will continue to look for opportunities during annual budget cycles to make reserve contributions. Having adequate reserves is essential to mitigate levy impacts for our funders and maintain level of service.

RECOMMENDED RESOLUTION:

WHEREAS *the conservation areas program exceeded the 2019 budgeted revenue target by approximately $180,000; and*

WHEREAS *the CVC Board has supported ongoing contributions to reserves to address potential revenue shortfalls and responsible capital asset planning.*

THEREFORE BE IT RESOLVED THAT *the report entitled "Conservation Area Reserves – 2019 Transfer" be received and appended to the minutes of this meeting as Schedule 'C'; and*

THAT *the Board of Directors grant approval for the transfer of $25,000 from the operating reserve to the parks revenue reserve; and further*

THAT *the Board of Directors grant approval for the transfer of $25,000 from the operating reserve to the conservation area minor structures reserve.*

Submitted by:

Jeff Payne
Director, Corporate Services

Recommended by:

Deborah Martin-Downs
Chief Administrative Officer

Credit Valley Conservation
inspired by nature

Flood Hazard and Flood Risk Mapping

To CVC Board of Directors
June 12, 2020

1

Presentation Outline

- Regulatory Authority
- What is a Flood Hazard Map
- Update Process
- Climate Change
- Flood Risk Mapping
- Next Steps

2

Floodplain Regulation

- Under authority of Section 28 of the Conservation Authorities Act.
- Implemented through Regulation 160/06 and two key regulatory tools
  - CVC's Regulation and Regulations Policies (April 2010)
  - Flood Hazard Maps

3

Flood Hazard Mapping

- Maps are base on the simulation of the greater of:
  - 100-year storm
  - Hurricane Hazel centred on the Watershed

4

Flood Hazard Mapping

Current maps are typically 15-30 years old and are due for an update due to changes in:

- Policies and Guidelines
- Infrastructure
- Climate
- Land Use and
- Technology

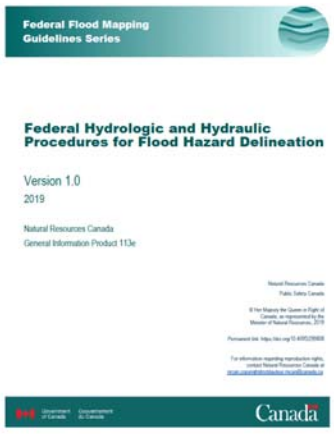
5

Flood Hazard Mapping

Policies and Guidelines

Examples:

- Evolving technical guidelines
- Risk Mapping



6

Flood Hazard Mapping

Infrastructure

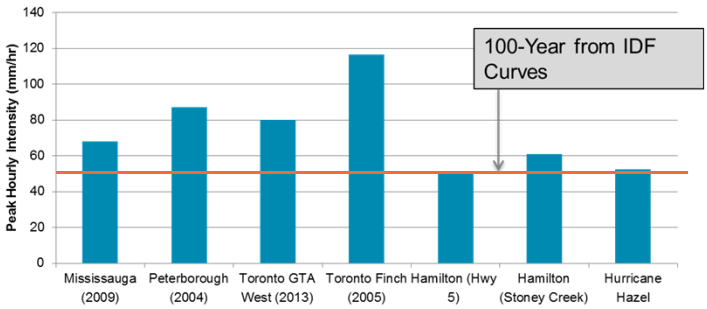
- Existing culverts and bridges were often constructed prior to urbanization and are often a primary cause of flooding
- Current mapping and related models afford the opportunity to size replacement infrastructure to reduce flood risk

7

MDD4

Flood Hazard Mapping

Climate Change



8

Slide 8

MDD4 this graph needs something to interpret it with - maybe a line showing hurricane hazel intensity?
Martin Downs, Deborah, 6/11/2020

Flood Hazard Mapping

Land use change

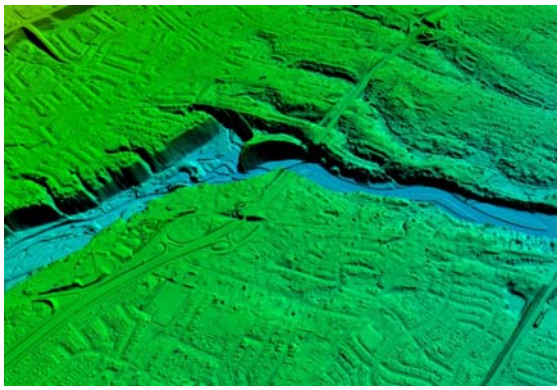
- Some greenfield development, but predominately due to intensification which leads to increased runoff

9

Flood Hazard Mapping

Technology Change

- LiDAR
- Modelling
- Computer power



10

Flood Hazard Mapping

Mississauga – East of the Credit

- Applewood and Serson
- Cooksville, Cumberland and Cawthra
- Mary Fix
- Carolyn
- Wolfdale, Kenollie, Stavebank

Mississauga – East of the Credit

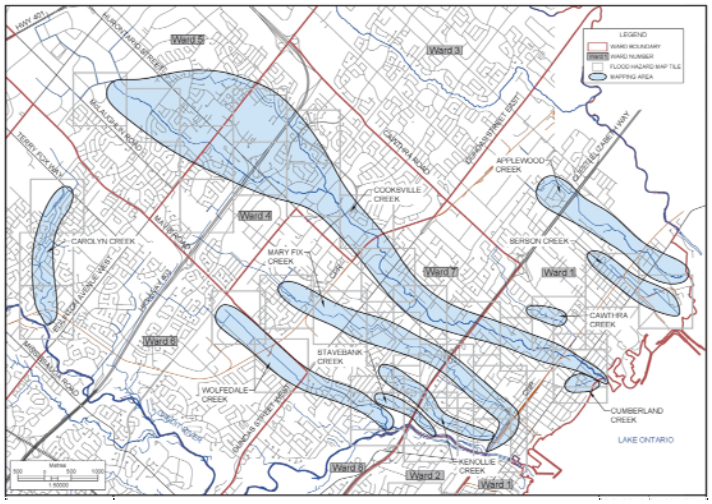
- Tecumseh, Lornewood, Moore
- Birchwood, Turtle, Loyalist
- Lakeside, Avonhead, Clearview

Caledon

- East Credit River
- Caledon Creek

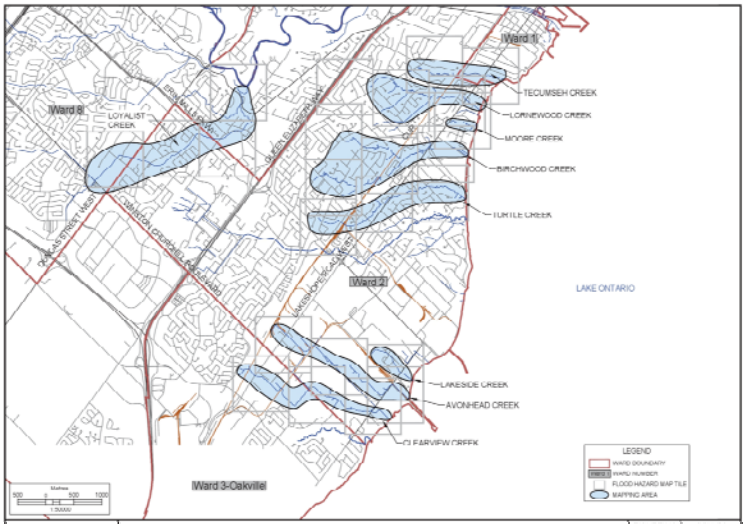
11

Mississauga Flood Hazard Maps – East of the Credit



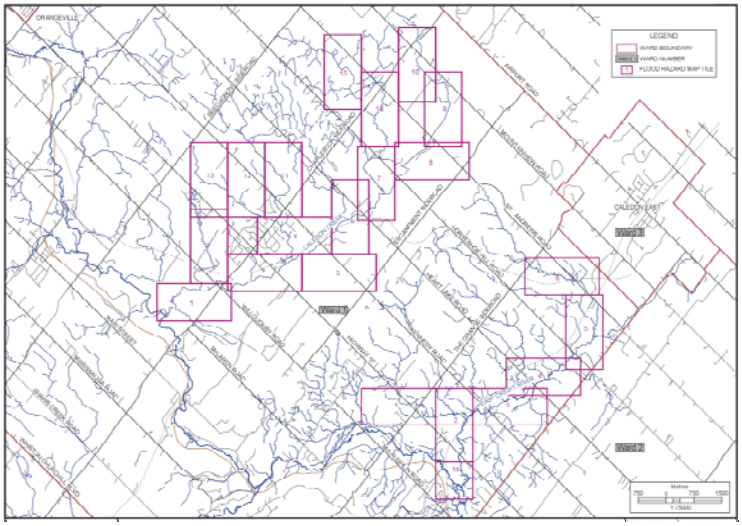
12

Mississauga Flood Hazard Maps – East of the Credit



13

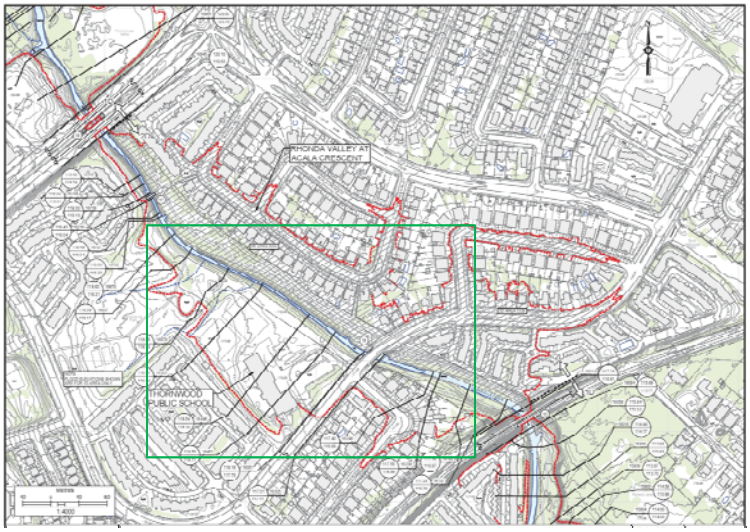
Flood Hazard Maps –Caledon Creek and East Credit River



14

MDD7

Sample Flood Hazard Map



15

Sample Flood Hazard Map

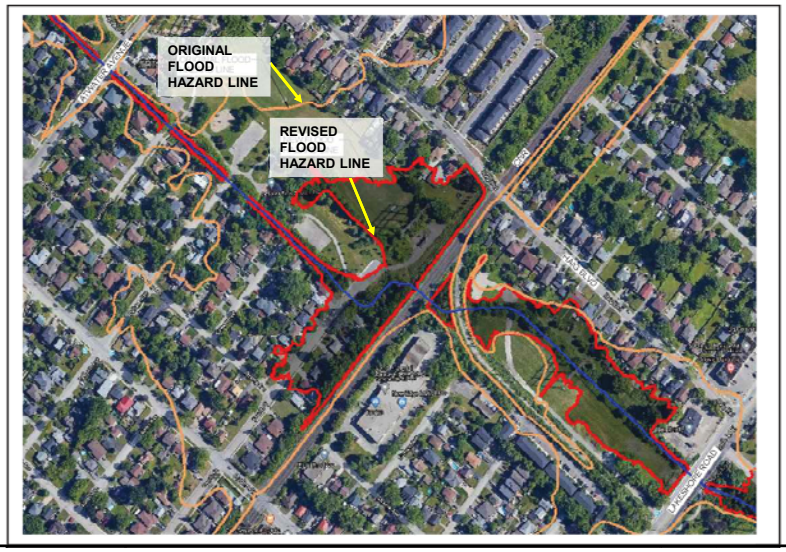
16

Slide 15

MDD7 can you also put in one with a close up of a cross section so they can see the details better?
Martin Downs, Deborah, 6/11/2020

MDD8

Serson Creek – Changes to Floodlines due to Update



17

Accounting for Climate Change

Where Hurricane Hazel is used as the Regulatory Flood:

- No change between existing and future as it is a singular event with no prescribed return period.

Where 100 year used as Regulatory Event

- Climate change scenarios from the Institute of Catastrophic Loss Reduction (ICLR) lead to a tripling of flood frequency over 30-50 years (100 year becomes 30 year).
- We are waiting for Provincial direction on an approach to incorporating climate change in flood hazard mapping.
- In the interim CVC is adopting the Federal recommendations of adding a freeboard to the calculated flood elevations.

18

Slide 17

MDD8 the arrows are faint pointing to the floodlines so make sure you point them out in your remark
Martin Downs, Deborah, 6/11/2020

Flood Risk Mapping

Risk Mapping provides additional information that will aid planners, regulators and first responders in assessing and managing flood risk. Examples include:

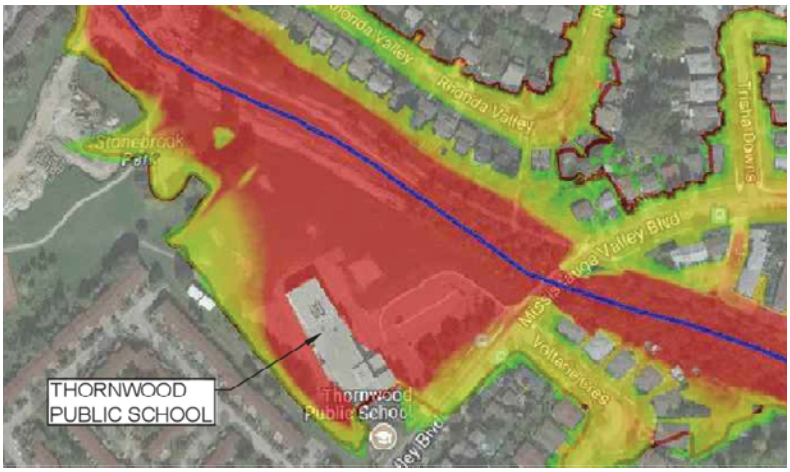
- Inundation Maps
- Spill Maps
- Flood Risk Screening Maps

19

Inundation Map

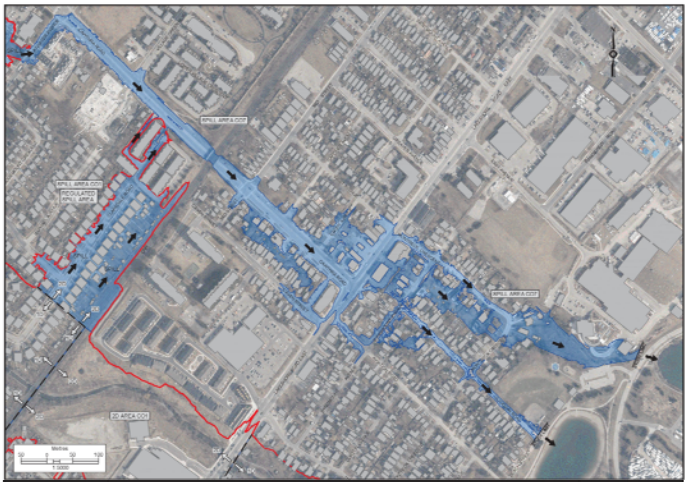
20

Inundation Map



21

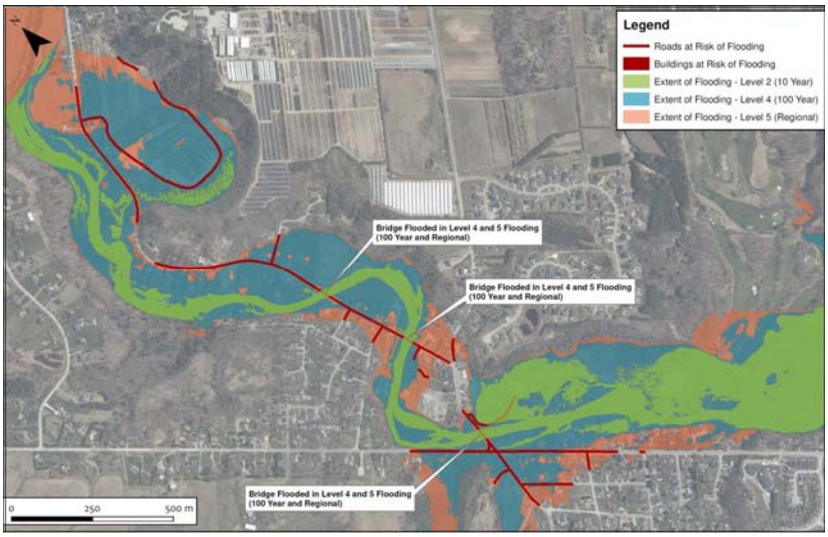
Cooksville and Cawthra Spill Map



22

Flood Risk Screening Map

Municipal Flood Response



23

Next Steps

- Distribution and publishing new mapping
- Consultation with individual Municipal Councillors
- Public Information Centres (for discussion)

24

25