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Laurentian Escarpment Conservation Area Trails Proposal





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EXECUTIVE SUMMARY

The Laurentian Escarpment Conservation Area, overlooking the City of North Bay, offers significant natural and heritage features that attract a variety of trail users – hikers, dog walkers, photographers, naturalists, families – who enjoy a variety of four-season activities including hiking, snowshoeing, geocaching and mountain biking.

It became apparent in 2011 that there is a growing public appetite for an expanded use of the trails, particularly for mountain biking. There is an opportunity to capitalize on the trails to create an eco-tourism destination while respecting the multiple users of the trails and protecting the environmental sensitivities of the escarpment.

This Trails Proposal (Draft) provides a starting point for the refinement of the trail network and is intended to start the community conversation. This Proposal takes into consideration the existing trail usage, a desirable density, trail maintenance requirements, and environmental sensitivities. A small portion of these trails cross land owned by the North Bay-Mattawa Conservation Authority. The remaining lands are owned by several private property owners, the Department of National Defense and the City of North Bay.

Consultation with property owners and user groups will help contribute to the development of the final trail configuration, management statement and plan, design specifications and funding plan. The end result: a high-quality multi-use trail network that would provide healthy recreational opportunities for residents and visitors as well as providing the infrastructure that could support future events and associated economic opportunities for local businesses.

This Proposal takes into consideration the existing public demand for multi-use, identified maintenance issues on the existing trails, a desirable density that respects the environmental sensitivities of the escarpment, and the potential for creating a destination for competitive mountain biking events.

This proposal provides an integrated approach to the development of the LECA trail system that considers the environmental, economic and social impacts.





This proposal recommends the following:

- A total of approximately 18 km of trails (existing trails total approximately 27 km including 8.3 km of NBMCA approved and managed trails and 18.7 km of unauthorized trails);
- 2. Removal of trails within areas identified as ecologically sensitive;
- 3. A trail density of approximately 11.5 km/km² (existing density is approximately 17 km/km²);
- 4. A three-phased approach including multi-use cross country trails, downhill biking trails, and a community bike park;
- 5. Consultation with private property owners, City of North Bay and Department of National Defense and consent to move forward;
- 6. Consultation with LECA Advisory Group and the community.

Two reports provided the background information for this Proposal. Alpine Bike Parks Canada prepared the <u>Laurentian Escarpment Conservation Area Trail Network Masterplan</u> in 2015 that provided a comprehensive conceptual plan, including an assessment of the maintenance issues on the existing trail network.

In 2016, FRi Ecological Services conducted an environmental screening of the Alpine Bike Parks proposal: the <u>Environmental Screening Report: Laurentian Escarpment Conservation Area Trail</u> <u>Masterplan</u> and examined a range of alternatives for the trail network that would respect the environmental features and functions of the escarpment while still maximizing the recreational opportunities afforded by the trail system.

Many of the trails identified as high maintenance by Alpine Bikes were also identified as ecologically sensitive by FRi Ecological Services: a significant consideration in this Trail Design Proposal.

Key values to consider during the implementation are: maintain the trail system as a nonmotorized multi-use network and assess options to improve accessibility for portions of the trail network to meet requirements under the Accessibility for Ontarians with Disabilities Act and improve control of access points to manage risk and reduce liability.

There are three types of trail features proposed for the LECA. Proposed phasing and associated costing estimates are as follows:

- 1. Multi-Use Cross Country Trails (\$106,500);
- 2. Downhill Bike Trails (\$344,000); and





3. Community Bike Park (\$294,000)

The estimated total cost to realize the plan is **\$744,500** not including any costs that may be required for Detail Design Plans for construction.

The completion of this comprehensive plan will create a significant increase in recreational opportunities to the community and neighboring communities and provide a facility capable of hosting local, regional and provincial events that will provide benefits to local businesses.

There will be ample opportunities to form and foster potential partnerships with various organizations and businesses including but not limited to Discovery Routes Trails Organization, Laurentian Ski Hill, Sport North Bay, Tourism North Bay, North Bay and District Chamber of Commerce, Local bike shops, International Mountain Bike Association and the LECA Advisory Group.

Consultation with the NBMCA Board, affected landowners, LECA Advisory Group and the general public will be completed by early 2018.





Background

The Laurentian Escarpment Conservation Area (LECA) features a multi-use trail system with the 6.4km Richardson Ridge Trail and the 1.9km McNutt Family Trail. These trails cross lands owned by the North Bay-Mattawa Conservation Authority, the City of North Bay, Department of Natural Defence and several private property owners.

Over the years, additional trails were developed, which are no longer maintained by NBMCA, in part to accommodate a short-lived mountain biking program. More recently other trails were created by users to capitalize on the escarpment's topography for mountain biking experiences. These trails were created without the consent of NBMCA and other property owners.

Public demand for an expanded use of the trails came to the fore in 2011-2012. A public meeting was held on October 17, 2012 to discuss the future of the LECA trail system. It was agreed to form the LECA Advisory Group, comprised of representatives of multiple user groups, to collectively and collaboratively discuss the future use and management of the trail system. Under the advice of the LECA Advisory Group, with the approval of the NBMCA Board of Directors, and with the understanding of the property owners, an assessment of the trail system was conducted by Alpine Bike Parks and a proposal¹ was presented for consideration. Subsequently, NBMCA contracted FRi to complete an environmental screening² of the Alpine Bike Parks proposal. NBMCA considered these two documents and arrived at this Draft Trails Proposal for consideration by the Board of Directors, the property owners, the LECA Advisory Committee and the public at large.

The trail design in this proposal takes into consideration the existing trail usage, a desirable density, trail maintenance requirements, and environmental sensitivities. It's important to note that this Trails Proposal is a Draft. It is intended to start the community conversation to refine the trail. Consultation with property owners is necessary and their consent to proceed is required. Consultation with user groups will help refine the trail configuration and provide further information that will contribute to the development of a final trail configuration, management statement and plan, funding and design.

This effort was recommended stemming from the desire to appropriately manage the risks associated with a multi-use trail network on lands owned by the NBMCA and various other landowners. Aside from the risk management issues, there was a vision of building and maintaining a high-quality multi-use trail network that would provide healthy recreational opportunities for residents and visitors as well as providing the infrastructure that could support future events and associated economic opportunities for local businesses.





This proposal provides an integrated approach to the development of the LECA trail system that considers the environmental, economic and social impacts. The proposal will provide a benchmark for discussions with the NBMCA Board, landowners, LECA Advisory Group and the general public.

There have been a number of studies and reports completed over the years pertaining to the escarpment lands addressing the protection and conservation of this unique feature within the City of North Bay including:

- <u>Planning Policy Review for North Bay Escarpment</u> (City of North Bay, 1996) was intended to provide a framework for future planning policies for development on or adjacent to the feature;
- North Bay Escarpment Erosion Report (NBMCA, 1997) identified erosion issues with the intent of remediating any critical erosion issues;
- <u>Full Site Impact Assessment</u> (NBMCA, 2000) was completed to address requirements to protect natural heritage features and functions on private lands and lands under ownership of the Department of National Defense;
- <u>Environmental Impact Assessment of Proposed Multi-Use Trail System along the North</u> <u>Bay Escarpment</u> (Discovery Routes Trails Organization, 2002) was the first report to specifically address trail development on the site with the intention of linking the Canadore College trails in the west to the Nordic Ski Club trails to the east; and
- <u>Inventory Report for Proposed Multi-Use Trail System Along the North Bay Escarpment</u> (Discovery Routes Trails Organization, 2002) provided better detail about vegetation community and other natural heritage inventories undertaken.

Existing Trail System

The existing trails are a combination of old access roads, constructed trails, planned trails and more recently user-constructed trails. Over the years the trail system had grown to a length of approximately 27 km with a trail density of 16.96km/km². A number of concerns arose a few years ago regarding safety, liability and private land issues. As a result, it was decided to take a comprehensive assessment of the trails and evaluate them in detail to determine how much of this network should remain and what was needed to make this network safe, easy to use, fun for the users and fair to landowners where portions of the trails cross their lands. This is a non-motorized and multi-use trail system that is used for but not limited to walking, hiking, dog-walking, birdwatching, trail running, snow-shoeing, cross-country skiing, and mountain biking.

The Alpine Bike Parks report identified 555 individual trail issues that require attention. Many of the trail segments that require remedial works are located in low-lying areas that will require ongoing maintenance. These areas were often associated with natural heritage values as well





where the impacts of a trail may not warrant the maintenance and upkeep required. In many cases, high ecological sensitivity and high maintenance areas coincide, thus building a strong case for trail segment re-routing or closure. It is also important to ensure that the trails remain multi-use and non-motorized trails. Since the trail network expanded without management or a comprehensive plan, many of the trail segments are redundant or poorly sited. It is important to use a systematic approach to identify the most important trail segments to carry forward with a consistent method of justification.

Trail Density

The Minnesota Department of Natural Resources developed a guideline for trail density for trails and waterways planning recognizing that all trails have some environmental impact but there are standards that help assess and evaluate trail systems. The following guidelines were used as one reference point.

Density Rating	Trail Density
Low	0 - 3 km/km ²
Moderate	3 - 6 km/km ²
High	$6 - 9 \text{ km/km}^2$
Excessive	Greater than 9 km/km ²

Table 1 Trail Density Rating System

Trail managers typically strive for low to moderate trail densities for public lands but allow for higher densities up to 9 km/km² for parks and protected areas where recreational activities are part of a master plan. While this is most often used as a planning tool to develop a new trail system, at the Laurentian Escarpment Conservation Area, the trail system is already in place and impacts that may have been considered in planning a new trail system already exist.

The McNutt Family Trail and the Richardson Ridge trail, together with the current unauthorized trails total more than 27km, resulting in a trail density of 16.96 km/km² which is beyond the density that would be planned for in a new park or protected area landscape (Figure 1). However, it is the existing conditions and it seems that it would make sense to assess the current trail system and scale it back to a more manageable size that still meets the needs of the users while reducing the environmental impact. This guideline provides some direction to satisfy the environmental and social impacts of the trail system.

Another important point of reference was put forward by Alpine Bike Parks to assess the economic viability of the trail system as a destination. Essentially in order to attract visitors, the created recreational activity time must be equal to or more than the travel time to and from the destination. Using mountain bikers as an example, approximately 10 km of trail would





provide about two hours of recreation at a speed of 10 km/h if the trail can be ridden in both directions to provide a different experience. To put this into perspective, a visitor from Sudbury would have a return travel time of about 4 hours. To attract a visitor from that community, a minimum of 20 km dual direction trail would need to be developed and maintained. This is a very simple relationship to determine the "draw" to the destination. Other unique factors such as a downhill lift facility and community bike park enhance the value proposition and will increase the "draw" area with the same length of trail network. This guideline provides some direction to satisfy the social and economic impacts of the trail system.

A number of different density scenarios were considered and evaluated. The original Richardson Ridge and McNutt Family trails authorized by the NBMCA were at a density of 4.32 km/km². It would not be practical or reasonable, nor is it ecologically necessary based on the FRi Report, to scale the existing trails back to that density at this time. It would significantly reduce the recreational value of the trail system and would also limit opportunities to host significant events such as Ontario Cup Mountain Bike races in the future. It is important to note that the lands that the trail system is located upon includes multiple owners and as such is potentially subject to change depending on agreements negotiated with the individual landowners.

A series of five alternative densities were evaluated including the original density of 4.32, 9.96, 11.47, 15.26 and the current trail density of 16.96 km/km². When you remove trail segments from the ecologically sensitive areas, it appears that the trail system at 11.47 km/km² is the most appropriate density for environmental, economic and social reasons. (Figure 2). This density seems to have the right combination of trail length, reduction of maintenance efforts, respect of natural values and cost while retaining some of the most high-quality trail segments that are popular with the users.

Trail Density	Environmental	Social	Economic	TOTAL
4.32	5	1	1	7
9.96	4	3	3	10
11.47	3	5	5	13
15.26	2	3	4	9
16.96*	1	1	2	4

Table 2 Trail Density Evaluation Summary

*Current Trail Density

Table 2 is a subjective evaluation of the various trail density alternatives and their relative score for environmental, social and economic impacts on a scale of 1 to 5 where 1 is least preferred and 5 is most preferred.







Figure 1 Ecological Sensitivities on Existing Trail System







Figure 2 Maintenance Requirements on Proposed Trail System







Figure 3 Proposed Trail System and revised LECA Boundaries for Discussion





The environmental component is the most intuitive of the three factors given that all trails have an environmental impact and fewer trails generally means less environmental impact. However, it is important to note that there currently is a density 16.96 km/km² and to fully achieve a reduced environmental impact with a smaller trail system, rehabilitation works will have to be undertaken to re-naturalize old trail segments that will no longer be used. It is also important to note that it is not just the length of the trail to be considered but also the amount of trail that is situated in ecologically sensitive areas. The evaluation assumes that any trail length reduction would focus on segments that are situated in ecologically sensitive areas that often correspond with high maintenance requirements as well.

The social component is a little less intuitive. There is an optimum trail density that provides the maximum recreational value and opportunity. If the trail length is too short, it limits the variety of trail experiences and the quantity of recreational opportunities. If the trail density becomes too high, the experience is lessened as one trail segment is clearly visible from an adjacent segment and the overall experience is reduced for some trail users that are looking for more of a nature appreciation experience.

The economic component is also less intuitive. It is a combination of cost to establish and maintain the trail system and its ability to generate revenue in the future through direct and indirect means. Obviously, the shortest trail length is the least expensive to construct and maintain but it is important to note that there already is an established network at a density of 16.96 km/km² albeit in need of repairs and upgrades. The two lowest densities provide a trail system that would be too short to attract visitors from neighboring communities such as Sudbury or support the requirement to host an event such as the Ontario Cup Races. The three alternatives at the higher densities all would meet those requirements, but the cost of constructing and maintaining these larger networks including areas with high maintenance costs would offset the potential for revenue generation and would also increase risk and liability. Based on the evaluation, the trail system at a density of 11.47 km/km² is the best compromise to meet all three evaluated components.

Multi-Use Priority

The original trail network was designed as a multi-use non-motorized system and it is important that it is maintained respecting these various uses. Public meetings held prior to the production of the most recent reports identified walking, hiking, dog-walking, birdwatching, trail running, snow-shoeing, cross-country skiing, and mountain biking as the key user groups. What was striking at these meetings was that there was good cooperation and consideration between the various user groups. Many of the walkers acknowledged that the mountain bikers had made





improvements to the trails that made it possible for the walkers to extend their use by constructing boardwalks over the muddy sections of the trail. It was also apparent that the responsible mountain bikers were aware of other trail users and were courteous when passing walkers along the trail system.

There was also the recognition that ATV's and other motorized users have used the trail system in the past. The adoption of the Masterplan and the resulting management plan will have to address access to the trail network and ensure it remains a multi-use non-motorized trail. While non-motorized use must be enforced to maintain the trails in good condition and respecting agreements with private landowners, there is a benefit to have controlled ATV access for maintenance purposes, in support of special events and potentially for emergency situations.

There may also be an opportunity within the multi-use design of the trail to designate certain trails single use and others multi-use, dependent on the final trail configuration.

Accessibility for Ontarians with Disabilities Act

In 2005, the Government of Ontario passed the Accessibility for Ontarians with Disabilities Act, also known as the AODA. Its goal is to make Ontario accessible by 2025 by creating and enforcing accessibility standards that address key areas of daily living¹.

The NBMCA is considered a small private not-for-profit organization and accessibility standards for recreational trails must be compliant with the legislation by January 1, 2018. Therefore, it makes sense to consider accessibility as part of the comprehensive plan. The accessibility standard applies to all newly constructed and redeveloped recreational trails that an obligated organization intends to maintain but does not apply to trails solely intended for cross-country skiing, mountain biking or the use of motorized snow vehicles or off-road vehicles; and wilderness trails, backcountry trails and portage routes.

New or redeveloped recreational trails must:

- meet minimum clear width (1 m) and height (2.1 m) specifications;
- have a firm and stable surface;

¹ <u>Pathways to Recreation, Learning about Ontario's Accessibility Standard for the Design of Public Spaces</u> <u>Guidebook</u>. Parks and Recreation Ontario, 2014. 67pp.





- meet restrictions on the size of surface openings (must not allow passage of an object that has a diameter of more than 20 mm), and orient elongated openings perpendicular to the direction of travel;
- meet specifications on edge protection (50 mm) when located beside water or a dropoff, except where a protective barrier already exists;
- provide minimum clear width at its opening (0.85 m to 1 m), regardless of entrance design (e.g., gate, bollard, etc.); and
- meet trail head signage requirements as outlined in the Standard.

It is important to note that the entire length of the trail does not have to meet these standards and given the slopes and terrain it would be very difficult to meet this standard while still supporting the other user groups. However, through consultation, it would be prudent to identify portions of the trail system that may be able to meet these standards to improve accessibility and increase recreational opportunities to all segments of the community.

Access Points

There are many access points that should be reviewed through consultation to determine which ones are required. There are three key access points that are likely important to retain. The main access point is at the NBMCA parking lot and building at the top of the escarpment. The second main access point is at the lower lodge of the ski hill. This will become a more important access point as the downhill trails and community bike park are developed in the future. The third main access point is where the utility corridors meet Ski Club Road. This access point is important because it accesses the central part of the trail system that provides a choice for users to access the western or eastern portion of the trail network.

There are many other smaller and more discrete access points including trails that originate from a single residence to access the trails. This type of access should be discouraged using signs and/or fencing as required. Uncontrolled access creates problems for risk management and liability. There are also trails which lead to the LECA trails from access points which lay beyond the conservation area boundaries including Tower Dr. and Ski Club Rd. These also present issues of liability and management and need to be addressed, possibly closed, at the conservation area boundaries.

Trail Assessment

The Alpine Bike Parks proposal identified a total of 555 trail condition issues specific to trail segments that need to be addressed to bring the trail system up to meet an acceptable standard. FRi Ecological Services used the raw spatial data and plotted each of these repair areas over the trail network map for reference. The sheer volume of these individual points





makes it difficult to map at a reasonable scale but for the purposes of trail upgrade and maintenance, maps can be produced for individual trail segments with very specific prescriptions for required repair. Once the preferred trail network has been selected, an asset management inventory of the trail system should be undertaken with descriptions of each trail segment including existing and required signage, existing deficiencies and recommended repairs. This will form the basis of the management and operation plan for the trail system in the future.

Proposed Phasing

There are three distinct components to this proposal which create a logical phasing as well:

- 1. Multi-Use Cross Country Trails;
- 2. Downhill Bike Trails; and
- 3. Community Bike Park

Each of these components has several sub-components or tasks required to complete the phase.

Phase 1 – Multi-Use Cross Country Trails

The multi-use cross country trails require upgrading and maintenance to bring it to an acceptable standard. Construction of connecting trail segments may be identified in the final configuration. Some of the key tasks are:

- Trail repairs and upgrades;
- Trail closures and remediation;
- Bridge/structure upgrades;
- Signage improvements; and
- Controlled access point improvements
- Construction of connecting trail segments

In order to have the capacity and ability to host mountain bike events it is important to design to meet minimum standards. Contact was made with the Ontario Cycling Association (OCA) regarding guidelines for hosting an Ontario Cup Mountain Bike (O-Cup) Race. The ability to host a provincial event such as an O-Cup Race also ensures that smaller regional events can also be hosted. The key components beyond the trail network are adequate parking facilities, nearby amenities, a supportive community and the ability to control access to the course. The 2017 O-Cup Circuit included 7 facilities summarized in **Table 3**. The trail network needs to have multiple loops at various lengths for the different classes. Based on the information presented in **Table 3**,





the proposed trail density design of 11.47 km/km² is sufficient to host this type of event. The total length of trail in the LECA trail system in this proposal is a little over 18 km with multiple stacked loops in the 5 to 10 km length available for major event hosting.

Table 3 Summary of 2017 Ontario Cup Mountain Bike Venues

Venue	Longest Trail Loop Used for the Event
Woodnewton	7.3 km
Kingston Farm	8.5 km
Horseshoe Resort	6.5 km
Hardwood Hills	7.5 km
Buckwallow	10.0 km
Albion Hills	13.0 km
Sir Sam's Inn	9.0 km

Cost Estimate

A cost estimate for the individual phases of development was included in the report by Alpine Bike Parks Canada. The cost to complete this first phase including a 10% mobilization cost and a 30% contingency cost was about **\$106,500** in 2018 dollars. The original cost estimates by Alpine Bike Parks Canada were in 2015 dollars. The NBMCA has applied an annual 3% inflation factor to arrive at 2018 dollars.

Phase 2- Downhill Bike Trails

There was an earlier attempt to utilize the ski hill to operate a downhill facility that was shortlived. The opportunity to offer a complete mountain biking experience including high-quality and safe trails and facilities should improve the chances of success for the downhill component. A combination of flow trails along with more traditional technical downhill trails is required. Modifications to the chairlift installation will be required by replacing every other chair with a bike rack and retrofitting both the upper and lower stations to accommodate the loading and unloading of bikes.

Cost Estimate

There are some considerable costs involved in creating a series of 4 flow and technical downhill courses. The cost to complete this second phase including a 10% mobilization cost and a 30% contingency cost is about **\$344,000** in 2018 dollars.





Phase 3 – Community Bike Park

This phase of the development could be the most popular component with the greatest appeal, but it is a capital-heavy component. The lower parking area is large enough to accommodate this component and completes the development of the mountain bike experience. This phase includes the development of a parking facility, large pumptrack, kid's learning loop, jump trails, spectator/viewing zone and progression skills loops.

Cost Estimate

This is a significant component of the mountain bike experience and could be the most heavily used portion of the facility in the future, incorporating programming opportunities through children, youth and adult training camps. The cost to complete this third phase including a 10% mobilization cost and a 30% contingency cost is about **\$294,000** in 2018 dollars.

The estimated total cost for capital improvements is approximately **\$744,500** in 2018 dollars.

Consultation and Community Partners

The key partners in the LECA Trail Proposal are the private property owners, the City of North Bay and the Department of National Defence who own the lands that are included in this proposal. Some of the trails follow the Hydro Corridor and the Gas Pipeline Easements. These utilities will require consultation. All parties will need to grant permission for the continued use of their lands for these trails.

Consultation with the LECA Advisory Group and the wider public that use this facility is crucial in garnering community support. They may generate ideas and solutions that have not been brought forward to date that will be helpful in the long-term sustainability of the facility. It is important that they feel that their suggestions are valued and considered in order to maintain community support for the project over the years of the phased-in development.

Discovery Routes Trails Organization, which has been crucial to so many regional trail projects, is a natural choice as a valued community partner. Their assistance in securing funding could help bring the Proposed Plan to fruition. The Laurentian Ski Hill and Snowboarding Club is another potential community partner given it currently operates the Laurentian Ski Hill on lands owned by the NBMCA. They share the facility and lands that are proposed to be used for the downhill trails as well as the bike park. Sport North Bay and Tourism North Bay could also be key partners in the promotion of the facility and may possibly provide assistance in securing funding. From the corporate side, the Chamber of Commerce and local bike shops could





become important partners in developing potential revenue streams from the facility. The International Mountain Bike Association (IMBA) and the LECA Advisory Group are potential partners for the upgrade and maintenance of the trail system. Partnership opportunities exist for the management and operation of the trails, user group communications, trail ambassador programs, funding applications and investment, and general support.

Next Steps

This proposal is a starting point for the development and realization of a high-quality multi-use trail facility. The proposal includes a responsible approach to identifying the optimum trail density based on environmental, social and economic factors while still creating a viable product. The suggested phasing is designed to build on success and spread capital expenditures over a longer period of time.

Consultation and input are required to determine the best path forward in to realize the greatest benefit to the community and trail users. **Figure 4** below provides a suggested path and timeline to achieve the goal.











Gaps

There are a number of gaps to be considered including:

- a) Formal consents to this proposal from the private property owners, City of North Bay and Department of National Defence and a Memorandum of Agreement are not yet in place;
- b) LECA boundaries need to be refined based, in part, on discussion with property owners;
- c) Neither a management model nor a business model have been discussed;
- d) An operational plan and funding will be required to ensure the sustainability of the facility into the future;
- e) Funding for the capital expenditures has not yet been secured; and
- f) The cost to prepare Detail Design Plans for the proposed three phases was not provided by Alpine Bike Parks. Additional costs would be associated with the development of these plans and associated Tender documents.

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Revisions May 30, 2018

Revised Timeline:



LECA Proposed Trail Map (next page)

- Includes names of existing informal trails
- Highlights Downhill Trails and Location of Bike Park

Please note that the Trail layout requires further refinement to relocate the trails that currently flow through the identified sensitive areas. Public comment is invited. sue.buckle@nbmca.ca





