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Item No. 5
Halifax Regional Council
May 31, 2022

TO: Mayor Savage and Members of Halifax Regional Council

SUBMITTED BY: Original Signed by
Jacques Dubé, Chief Administrative Officer

DATE: April 7, 2022

SUBJECT: HRM Ditch Maintenance - Roles and Responsibilities

INFORMATION REPORT

ORIGIN

December 7, 2021 Regional Council motion (item No. 16.2)

MOVED by Councillor Lovelace, seconded by Councillor Kent

THAT Halifax Regional Council request a staff report on clarifying the roles and responsibilities for effective and efficient ditch maintenance throughout Halifax Regional Municipality (HRM) to come back to Council. The staff report should:

1. Review the communications and directions provided by both HRM and Halifax Water customer service staff in response to complaints from residents and businesses for ditch maintenance in all of HRM.

2. Identify and review the processes customer service staff follow when residents and businesses call for service from within or outside the stormwater service boundary, no matter what road they live on, to identify efficiencies in maintenance and communications.

3. Provide recommendations for efficiencies to optimize and align communications and procedures for both customer service units at HRM and Halifax Water.

MOTION PUT AND PASSED

LEGISLATIVE AUTHORITY

Halifax Regional Municipality Charter, R.S.N.S. 2008, c. 39:

Purposes of Municipality
7A The purposes of the Municipality are to
(a) provide good government;

(b) provide services, facilities, and other things that, in the opinion of the Council, are necessary or desirable for all or part of the Municipality; and
(c) develop and maintain safe and viable communities.

Municipal expenditures
79A (1) Subject to subsections (2) to (4), the Municipality may only spend money for municipal purposes if
(a) the expenditure is included in the Municipality's operating budget or capital budget or is otherwise authorized by the Municipality.

Street related powers
322 (1) The Council may design, lay out, open, expand, construct, maintain, improve, alter, repair, light, water, clean, and clear streets in the Municipality.

BACKGROUND

Halifax Water (HW) and Halifax Regional Municipality (HRM) have a shared responsibility with respect to Storm Water Management and the Maintenance of Municipal Storm Water Systems, including ditches. This report provides an overview of those responsibilities specifically related to ditches and culverts.

The report will provide recommendations intended to be implemented by the administration in both organizations to improve customer service to our citizens and to be incorporated into Service Level Agreements moving forward.

Ownership and Maintenance of Municipal Stormwater Systems

The 2007 Transfer Agreement between the Halifax Regional Municipality and Halifax Water transferred all existing municipal stormwater infrastructure to Halifax Water if it was within the street right of way or a defined easement. This infrastructure includes both "minor" piped systems (capacity for a maximum 1 in 5 year frequency storm event) and "major "systems (**ditches,** pipes, swales etc. with capacity for storm events greater than 1 in 5 year frequency). Halifax Water and Halifax Regional Municipality worked together to document roles and responsibilities in relation to operations and maintenance of the stormwater system within the defined stormwater service boundary.

In 2013, a review of the responsibilities guide (the "Merger Matrix") (Attachment A - HRM & HW Responsibility Guide), and the work of a Special Technical Committee established under Section 37 of the Transfer Agreement contributed to the final version of the Merger Matrix. Work management rules have been documented to reflect the responsibilities guide and are constantly being reviewed and updated to ensure alignment with the 2007 Transfer Agreement between the Halifax Regional Municipality and Halifax Water.

Roles and Responsibilities for Storm Water Management

The overall responsibility for stormwater management is multi-jurisdictional. The federal, provincial, and municipal governments along with Halifax Water and private property owners each have specific roles and responsibilities as stormwater moves through the stormwater cycle.[1]

Specifically, the roles for Halifax Water & Halifax Regional Municipality and Private Property Owners are as follows:

Halifax Water
Halifax Water is the municipal water, wastewater and stormwater utility serving the residents of the Municipality. Halifax Water has authority to own and operate stormwater systems for the benefit of

[1] See Halifax Regional Council, January 16, 2018 - Item 14.3.1

its customers within a defined service boundary. Halifax Water's stormwater system is comprised of catchbasins, pipes, manholes, **roadside ditches**, swales, culverts, stormwater holding tanks, ponds, and/or dams, which are vested in or under the control of Halifax Water, that eventually discharge into a local stream, lake, other body of water, or formal major stormwater systems where they exist.

Halifax Regional Municipality
The Municipality is responsible for the regulation of land development activities, which includes siting of buildings, grading of land, and assessing impacts of overland flow that result from the development of land, as well as stormwater systems used for municipal purposes, such as municipal parkland or other municipal facilities. The Municipality also owns and maintains those elements of the minor drainage systems (pipes, **ditches, culverts,** etc.) that fall outside of the stormwater service boundary butare within streets owned by the Municipality. In addition, the Municipality owns and maintains the public street system, which is part of the stormwater system, and often accommodates the major stormwater flow, as well as bridges over natural watercourses and drainage corridors.

Private property owners
Property owners are responsible for stormwater flow across their individual properties, across adjacent property boundaries as well as stormwater management systems located on their property. Private stormwater systems include rainwater leads, footing drains, private community systems, and slope protection within their privately-owned property. **Private property owners must maintain drainage corridors and privately owned drainage infrastructure free of vegetation and debris to not block drainage flow routes or negatively interrupt public or private drainage patterns**

Ditch Functionality

The main purposes of a roadside ditch are:
1. protect the integrity of the road;
2. connect stormwater conveyance infrastructure; and
3. minimize flow from the right of way onto private property.

Roads are designed to drain rain and snowmelt away from the road, toward the lower elevation of the roadside ditch. Once the water reaches the ditch, it can flow along the ditch and eventually away from the roadway, protecting the stability of the road subgrade.

Ditches carry water directly to streams, lakes, and other bodies of water referred to generally as receiving waters. The stormwater discharge to the receiving waters is not treated or cleaned. Performing ditch maintenance that will protect both the roadways and the cleanliness of the receiving waters is challenging. Ditches often perform better than piped storm sewers when it comes to protecting water quality as piped storm sewer systems moves water from the road into a pipe that leads directly to the receiving water.

Importance of Vegetation in Ditches

Ditches along roads are often vegetated; the vegetation slows down the water, allowing a portion of it to infiltrate into the soil and allowing some of the debris and pollutants to settle out. Fine sediments and associated pollutants filter out as subsurface water moves through a mesh of plant roots. When plants take up water, they help to reduce the volume of runoff after a storm.

When ditches are unstable, or when the vegetation is disturbed during ditch maintenance, erosion is more likely. Erosion can impact water quality in the downstream receiving waters as well as may impact stability along certain areas of the ditch banks.

By slowing down water flow a vegetated ditch also reduces peak flow responses being discharged from the system. Flow attenuation has a more significant positive impact in the lower reaches of a stormwater drainage system and ultimately can increase the capacity of the system to handle higher flows without overwhelming system capacity.

A stable and healthy ditch ideally has vegetation that does not interrupt the the design capacity of the stormwater system. Vegetation also provides habitat for wildlife, stabilizes soils, and increases the rate and quantity of water infiltration.

Vegetation in ditches and a desire to have it removed or manicured/mowed has been a source of many requests for service. Halifax Water and HRM respond to hundreds of requests for ditch maintenance and removal of standing water from ditches. Ditches that have vegetation present and continue to allow for the flow of water are considered healthy infrastructure, not requiring service. The approach taken for the operation and maintenance of ditches follows basic asset management principles and performance standards. The design is meant to facilitate the flow of stormwater within the ditch from the upstream source (culvert/point source, etc) to its downstream discharge (outfall/culvert,etc).

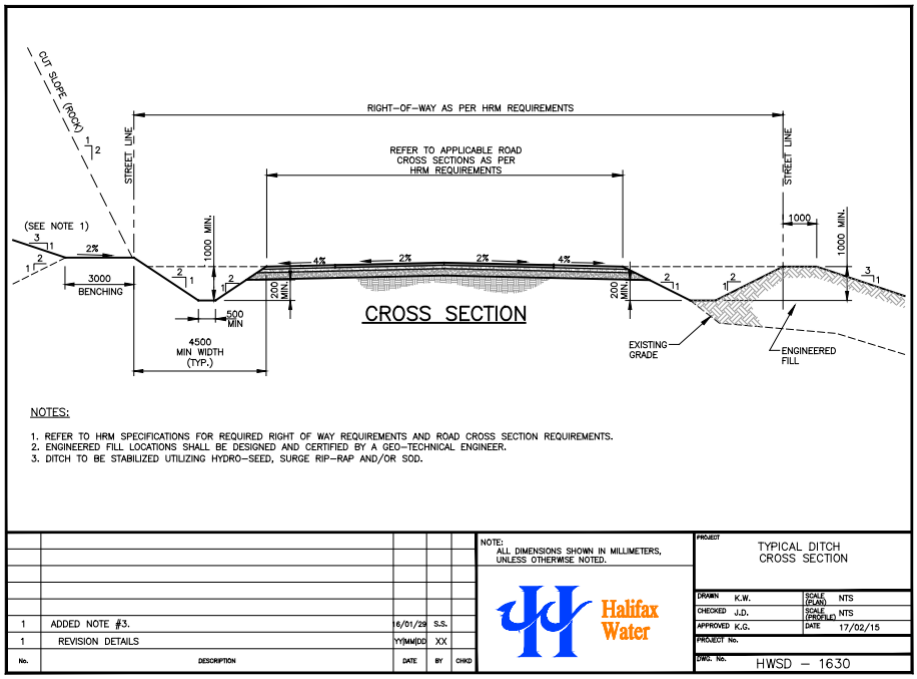
While it is desirable to some customers to excavate ditches on a routine schedule it needs to be understood that vegetation in ditches is desirable for many reasons and should only be removed when required due to obstructing flow that may lead to damage to property and the roadway.

When receiving a request for service through HRM and Halifax Water's call centres, the optimal time to inspect their functionality is during or immediately after a rainfall or snow melt event. During this time there is higher water flow and more stress on the system. There are three conditions that are typically looked at during the inspection process:

1) Road appearance: Potholes, degradation, cracking, rutting, road edge erosion/"breaking off, and suspicious wear and tear may indicate a ditch and shoulder are in need of maintenance. Roads may also deteriorate because of undersized or clogged culverts or when the subgrade becomes saturated.

The above picture depicts road appreance when the road edge breaks off. This could be an indicator that the ditch and/or shoulder need maintenance

2) Ditch erosion or soil instability: Inspect for un-vegetated banks, sediment deposits in the ditch, unstable or eroding slopes and incision (channel deepening).Other items to observe are whether the riprap (underlying stone/foundation) is in place or whether it has been undercut or washed away. The below cross section is the standard detail of a properly built roadway with ditches on both sides. A ditch should be evaluated against this standard for erosion or soil instability.



**Page 87/89 HW standard details - https://www.halifaxwater.ca/sites/default/files/2019-01/section-39-00-00-standard-details.pdf

3) Water flow: Standing water is a normal part of a functioning healthy ditch network. It is typically present in low lying areas and areas with low ditch slopes; especially in significant weather events. However it may indicate an issue with the infrastructure that requires maintenance or repair. When an investigation is required, Halifax Water staff look for any blockages or flood problems diverting the flow. Standing water is usually not indicative of a problem with the system but should inspected by staff to validate there is no obstruction or other defect with potential to cause system failure.

The above is a picture of a healthy ditch with vegetation. Although there is water in the ditch, the ditch is functioning properly as the water is dispersing as intended.

DISCUSSION

Motion 1:Review the communications and directions provided by both HRM and Halifax Water customer service staff in response to complaints from residents and businesses for ditch maintenance in all of HRM.

The specific area of challenge noted relates to communications and direction provided by both Halifax Water and Halifax Regional Municipaliy customer service staff to the customer. The confusion occurs when call centre staff make a determination based on a subjective description by the homeowner as opposed to having the request investigated by field staff. This can lead to misdirected calls and confusion for the customer.

Communication between the two organizations and their call centres must be consistent in order to properly direct call and assist homeowners.

Some of the common service requests are as follows (*Full details can be referenced in Appendix A):

1. Ditch Blockage
2. Vegetation in Ditches - impeding site lines or impeding flow of water.
3. Ditch flooding
4. Blocked Culvert

Currently, Halifax Water and HRM boundaries are not identical. There are streets that HRM services outside the Stormwater Service Boundary where HRM owns the ditch(Attachment C - Streets serviced by HRM outside the Stormwater Service boundary).

Motion 2: Identify and review the processes customer service staff follow when residents and businesses call for service from within or outside the stormwater service boundary, no matter what road they live on, to identify efficiencies in maintenance and communications.

The current challenge is the customers may not know who the correct service provider is to contact. If they contact the incorrect service provider, they may not be provided further information to address their concerns.

Moving forward, if the caller resides outside of the ownership area, both the Halifax Water Customer Care Center and Halifax Regional Municipality Customer Contact Centers (311) will provide a consistent priority routing, which entails:

1. Warm transfer to Halifax Water, 311 or Nova Scotia Department of Public Works (NSPW);
2. If there is a long wait time, the caller will be advised they are being transferred to the queue of Halifax Water, 311 or NSPW;
3. Provide Halifax Water, 311 or NSPW's direct contact information to caller.
    a. For any municipal-related questions, residents may contact the Customer Contact Centre, by **calling 311** or emailing **contactus@311.halifax.ca**.
    b. For any Halifax Water-related questions, residents may visit **halifaxwater.ca/stormwater-expansion** or contact the Halifax Water Customer Care Centre at **902.420.9287**.
    c. For any provincial-related questions, residents may contact the Provincial Operation Contact Centre at **1.844.696.7737**.

Motion 3: Provide recommendations for efficiencies to optimize and align communications and procedures for both customer service units at HRM and Halifax Water.

Communications have been developed through the NSPW road exchange for affected citizens. This information has been posted on HRM and Halifax Water websites and mailed directly to residents to clarify the roles of each organization and their contact information (Attachment D-G). It is recommended that both organizations update their websites to reflect this information for all residents.

Common scripting has been developed between the two call centers and after-hours service providers to ensure customers are directed to the proper organization.

HRM has implemented a change to dispatching calls during extreme weather. If there is flooding in progress, HRM will dispatch staff 24/7 to investigate. If the investigation concludes that the problem is a matter of the ditch being blocked by snow/ice, HRM will either contract or use hourly resources to address the snow in the ditch causing the issues.

Internal ice buildup blocking a culvert is the responsibility of Halifax Water and will be addressed using Magnesium Chloride and/or a combination vacuum high pressure cleaner (Jet truck) to open the culvert. Halifax Water's staff will prioritize resources and response times based on matters of greatest importance. Resources could be challenged during extraordinary weather events. i.e., pumping station power outages which could result in an environmental non-compliance situation may take precedence over an isolated blocked culvert.

Investigations by either organization that result in the matter being transferred to the other body will be managed by Duty Supervisors contacting one another directly. To prevent citizens from being circled through the call centers, HRM and Halifax Water Operations Teams will work together to ensure that emergency situations are being properly handed over by implementing direct communication methods.

HRM and Halifax Water will work with respective communications teams to jointly develop a public relations tool designed to educate staff, residents, and councillors regarding ditches and their function as being low-lying infrastructure and inparticulat, that standing water inside of a ditch does not necessarily indicate that the ditch is not functioning correctly. Over time, water will absorb naturally through the ground, as well as

vegetation transpiration. Removing the vegetation completely would impact water absorption, as well as disrupt natural animal habitat.

HRM will provide reactive vegetation maintenance, to service requests reported through 311, to ensure shoulder accessibility and sightline issues within the right of way are mitigated. Homeowners are responsible to ensure safe exit from private property and should maintain vegetation to do so.

Both organizations will engage in a joint team meeting of operations staff in May 2022 prior to the Provincial Service Expansion and undertake these meetings every two years.

FINANCIAL IMPLICATIONS

There are no financial implications associated with this report.

COMMUNITY ENGAGEMENT

No community engagement was required.

ATTACHMENTS

Attachment A: HRM & HW Responsibility Guide
Attachment B: Streets Serviced by HRM Outside the HW Boundary
Attachment C: Letter to Residents re Road Transfer - CC final 14 Apr 22
Attachment D: Letter Attachment 1: NSPW to HRM transfer Area 1 Map
Attachment E: Letter Attachment 2: NSPW to HRM transfer Area 4 Map
Attachment F: CC_NSPW_Brochure_April12_with NSUARB approval

A copy of this report can be obtained online at halifax.ca or by contacting the Office of the Municipal Clerk at 902.490.4210.

Report Prepared by: Donnie Pellerine, Manager Streets and Roads West, TPW, 902-222-2219

ATTACHMENT A - HRM & HW Responsibility Guide

Item	Asset/Feature	Definition	Origin of Item	Reference Type	Description	Picture	Action	Problem Codes	Responsibility		Fee for Service	Status	Date Approved by STC
									Work Done or Investigated by:	Work Paid by:			
1	CATCHBASIN	A catchbasin (also referred to as catch pit, stormdrain, catchbasin/manhole (CBMH), ditch inlet (DI)) is a structure used to collect water and convey water into the storm sewer system or to an outfall. The structure is located below grade and has a slotted grate and frame that allows water to enter into the structure. Some catchbasins are used only to collect the water and allow it to infiltrate into the ground below (that is, they are not connected directly to the storm sewer system).	Merger Matrix Item 1 & 49	CATCHBASIN blocked TOPSIDE	Catchbasin intact but blocked by debris, leaves, snow and ice.		Remove debris, leaves, gravel, or snow and ice 	STR01 SNSDP SNST2 LIT02 LEF01	HRM - MOPS	HRM - MOPS		**Closed**	8-Feb-10
2	CATCHBASIN		Merger Matrix Item 2	CATCHBASIN blocked UNDERNEATH	Catchbasin intact but blocked below the grate by an accumulation of material.		Remove grate and remove accumulated material.	DNN02	HW - WSC	HW - WSC		**Closed**	8-Feb-10
3	CATCHBASIN		Merger Matrix Item 2 & 3	CATCHBASIN cleaning - GENERAL CLEANING	Catchbasin sumps periodically require cleaning. Material is swept into the catchbasins from heavy rains, ice and snow melts and these flows carry larger particles that deposit in the bottom of the catchbasins.		Clean and remove material from the catchbasin sumps and dispose in an appropriate disposal facility.	DNN02	HW - WSC	HW - WSC	No	**Closed**	8-Jun-10
4	CATCHBASIN		Merger Matrix Item 2 & 3	CATCHBASIN cleaning - Required due to CONSTRUCTION DEBRIS	Catchbasin sumps periodically require cleaning. Material is swept into the catchbasins from heavy rains, ice and snow melts and these flows carry larger particles that deposit in the bottom of the catchbasins.		Clean and remove material from the catchbasin sumps and dispose in an appropriate disposal facility.	DNN02	HW - WSC	HRM - MOPS	Yes	**Closed**	8-Jun-10
5	CATCHBASIN		Merger Matrix Item 2 & 3	CATCHBASIN cleaning - Required due to WINTER WORKS ACTIVITIES	Catchbasin sumps periodically require cleaning. Material is swept into the catchbasins from heavy rains, ice and snow melts and these flows carry larger particles that deposit in the bottom of the catchbasins. The material is typically from eroded road gravels or sands used during the winter snow operations.		Clean and remove material from the catchbasin sumps and dispose in an appropriate disposal facility.	DNN02	HW - WSC	HRM - MOPS	Yes	**Closed**	8-Jun-10
6	CATCHBASIN		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	CATCHBASIN broken/damaged FRAME AND GRATE	The frame and grate (top part of the catchbasin) is broken or damaged.		Replace frame and grate.	DNN02	HW - WSC GENERAL MAINTENANCE ISSUES	HW - WSC GENERAL MAINTENANCE ISSUES		**Closed**	8-Jun-10
7	CATCHBASIN		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	CATCHBASIN broken/damaged FRAME AND GRATE	The frame and grate (top part of the catchbasin) is broken or damaged. This is typically the result of winter snow plowing operations.		Replace frame and grate.	SNSDP SNST2	HRM - MOPS DURING SNIC SEASON **ONLY** (may be a contracted service by HW - WSC under agreement)	HRM - MOPS DURING SNIC SEASON **ONLY** (may be a contracted service by HW - WSC under agreement)		**Closed**	8-Jun-10
8	CATCHBASIN		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	CATCHBASIN broken/damaged STRUCTURE BELOW GROUND	The basin itself (part of the catchbasin structure below ground) is broken or damaged.		Repair or replace catchbasin.	DNN02	HW - WSC	HW - WSC		**Closed**	22-Feb-10

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9	CATCHBASIN		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	CATCHBASIN or CATCHBASIN WITH ADJUSTABLE CURB broken asphalt/concrete	Asphalt or concrete around the catchbasin is pitted, broken or damaged. This type of defect is typically caused by freeze and thaw cycles due to inadequate drainage of the road subgrade or because of faulty compaction around the catchbasin. This defect includes previous cut and patch of the road surface around the catchbasin.	 	Repair or replace the asphalt or concrete around the catchbasin Refer to HRM Streets By-Law S-308 re: reinstatement requirements	STROA SHREP	HRM - MOPS	HRM - MOPS		**Closed**	22-Feb-10
10	CATCHBASIN		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	CATCHBASIN or CATCHBASIN WITH ADJUSTABLE CURB - **asphalt** needs to be brought up to proper grade. If frame or structure is not defective	The road or ground around the catchbasin needs to be brought up to proper grade to allow water to drain into the catchbasin and then the storm sewer system. This defect is caused by an undulating road grade or by compaction issues with the road structure itself.		Pad, repair or replace the asphalt around and adjacent to the catchbasin to ensure road drainage flows into catchbasin. This may need to be prioritized with other capital projects due to the extent of repair needed.	STROA SHREP	HRM - MOPS	HRM - MOPS		**Closed**	22-Feb-10
11	CATCHBASIN		STC Meeting of Feb 22, 2010	CATCHBASIN - **frame** needs to be adjusted (raised or lowered) to match road grade. If frame or structure is Defective	The frame and grate of the catchbasin are below the asphalt elevation surrounding the catchbasin. Water will flow into the catchbasin; depression makes "bump" on driving surface and potentially can lead to future wear and tear on the frame and grate.		Raise the frame and grate of the catchbasin. Should be done prior to or with surface asphalt works.  	DNN02	HW - WSC	HW - WSC		**Closed**	8-Jun-10
12	CATCHBASIN		Merger Matrix Item 6	CATCHBASIN needs to be relocated or added pertaining to a CAPITAL PROJECT	NEW - a catchbasin needs to be relocated or added during a major road reconstruction project. This is required as a result of a drainage redesign or enhanced drainage design to resolve existing and ongoing drainage deficiencies, or due to conflicts with other utility plant.		HRM to submit proposed drainage design change and supporting drainage calculations to Halifax Water. HRM to demonstrate that the additional infrastructure/proposed change will not create capacity issues with the existing system. Once sign-off is received from Halifax Water, install the catchbasin as proposed in the design and according to Halifax Water standards for storm sewer systems. Halifax Water to be notified when catchbasin will be installed to have the opportunity to inspect. HRM to provide all asset information and elevations to Halifax Water after construction.		HRM - Design & Construction	HRM - Design & Construction		**OPEN**	
13	CATCHBASIN		Merger Matrix Item 6	CATCHBASIN needs to be relocated or added pertaining to DEVELOPMENT	NEW - a catchbasin needs to be relocated or added during a major road reconstruction project. This is required as a result of a drainage redesign or enhanced drainage design to resolve existing and ongoing drainage deficiencies, or due to conflicts with other utility plant.	 	HRM to submit proposed drainage design change and supporting drainage calculations to Halifax Water. HRM to demonstrate that the additional infrastructure/proposed change will not create capacity issues with the existing system. Once sign-off is received from Halifax Water, install the catchbasin as proposed in the design and according to Halifax Water standards for storm sewer systems. Halifax Water to be notified when catchbasin will be installed to have the opportunity to inspect. HRM to provide all asset information and elevations to Halifax Water after construction.		HRM - Development	HRM - Development		**OPEN**	
14	CATCHBASIN		Merger Matrix Item 14	CATCHBASIN located in HRM park or sportsfield	Catchbasin installed in HRM park or sportsfield to address surface water issues at the park, field, playground etc. Catchbasin may or may not be connected to the municipal storm sewer system. Catchbasin may become blocked, broken, damaged, or have settlements around it.		Remove blockages, repair settlements, repair or replace catchbasin and leads as needed.	PRF02 PRF03	HRM - MOPS (may be a contracted service by HW - WSC under agreement)	HRM - MOPS (may be a contracted service by HW - WSC under agreement)	Possibly	**Closed**	22-Feb-10

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15	CATCHBASIN		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	CATCHBASIN located in draingage easement off street	Catchbasin installed in off-street drainage easement as part of the overall storm drainage system where there is an easement in place that is in favour of Halifax Water. Catchbasin is typically connected to the storm sewer system. Catchbasin may become blocked, broken, damaged, or have settlements around it.		Remove blockages, repair settlements, repair or replace catchbasin and leads as needed.		HW - WSC	HW - WSC		**Closed**	22-Feb-10

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16	CULVERT	A culvert is a short conduit (or pipe) used to enclose a flowing body of water. It may be used to allow water to pass under a driveway, road, railway, or embankment. Culverts are made of a variety of materials including: corrugated steel pipe (CSP), polyvinyl chloride (PVC) pipe, high density polyethyline (HDPE) pipe, concrete, and wood. They can be circular, elliptical, semi-elliptical, square, or rectangular in shape. There may be more than one used to convey the water.	Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	CULVERT repairs and replacement	Culvert, grate or headwalls are damaged or broken, grate is filled with debris, or rip rap around the headwalls requires repair or replacement. DOES NOT INCLUDE CULVERTS THAT ARE PART OF PRIVATE DRAINAGE SYSTEMS. THESE MUST BE MAINTAINED AND PAID FOR BY THE PROPERTY OWNER.		Repair or replace culvert, grate or headwall, debris is removed from grate and reinstate rip rap.	SNSDP SNST2	HRM - MOPS IF CAUSED BY HRM SNOW REMOVAL EFFORTS	HRM - MOPS IF CAUSED BY HRM SNOW REMOVAL EFFORTS		**Closed**	8-Jun-10
17	CULVERT		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	CULVERT repairs and replacement	Culvert, grate or headwalls are damaged or broken, grate is filled with debris, or rip rap around the headwalls requires repair or replacement. DOES NOT INCLUDE CULVERTS THAT ARE PART OF PRIVATE DRAINAGE SYSTEMS. THESE MUST BE MAINTAINED AND PAID FOR BY THE PROPERTY OWNER.		Repair or replace culvert, grate or headwall, debris is removed from grate and reinstate rip rap.	CUL01	HW - WSC GENERAL MAINTENANCE ISSUES	HW - WSC GENERAL MAINTENANCE ISSUES		**Closed**	8-Jun-10
18	CULVERT		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	CULVERT blocked inside	Culvert intact but blocked with debris, leaves, gravel, or snow and ice. Blockage inside the culvert.	 	Remove debris, leaves, gravel, or snow and ice	CUL01	HW - WSC	HW - WSC		**Closed**	8-Jun-10
19	CULVERT		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	CULVERT blocked outside	Culvert intact but blocked with debris, leaves, gravel, or snow and ice. Blockage at the ends of the culvert.	 	Remove debris, leaves, gravel, or snow and ice	SNSDP SNST2	HRM - MOPS	HRM - MOPS		**Closed**	8-Jun-10
20	CULVERT		Post October 29th, 2009 Workshop but tied to concept of adding additional infrastructure (CB, MH, CBMH, DI) to address ongoing drainage issue - simply extended to include culverts	CULVERT needed to address drainage issues - CAPITAL WORK	A culvert needs to be installed as a result of a drainage redesign or enhanced drainage design to resolve existing and ongoing drainage deficiencies.	 	HRM to submit proposed drainage design change and supporting drainage calculations to Halifax Water where culvert will add to existing storm drainage system under Halifax Water's jurisdiction. HRM to demonstrate that the additional infrastructure/proposed change will not create capacity issues with the existing system. Once sign-off is received from Halifax Water, install the culvert as proposed in the design and according to Halifax Water standards for storm sewer systems. Halifax Water to be notified when culvert will be installed to have the opportunity to inspect. HRM to provide all asset information and elevations to Halifax Water after construction.		HRM - Design & Construction	HRM - Design & Construction		**OPEN**	

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21	CULVERT		Post October 29th, 2009 Workshop but tied to concept of adding additional infrastructure (CB, MH, CBMH, DI) to address ongoing drainage issue - simply extended to include culverts	CULVERT needed to address drainage issues - DEVELOPMENT	A culvert needs to be installed as a result of a drainage redesign or enhanced drainage design to resolve existing and ongoing drainage deficiencies.	 	HRM to submit proposed drainage design change and supporting drainage calculations to Halifax Water where culvert will add to existing storm drainage system under Halifax Water's jurisdiction. HRM to demonstrate that the additional infrastructure/proposed change will not create capacity issues with the existing system. Once sign-off is received from Halifax Water, install the culvert as proposed in the design and according to Halifax Water standards for storm sewer systems. Halifax Water to be notified when culvert will be installed to have the opportunity to inspect. HRM to provide all asset information and elevations to Halifax Water after construction.		HRM - Development for PERMIT	Developer/Builder		**OPEN**	
22	CULVERT		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	CULVERT new for driveway access to NEW lots	A new culvert is needed to provide access to new lots in rural subdivisions.		Permit for the new driveway and culvert to be issued. Approval to include review of available sight distance for the access location and a review of the existing drainage to ensure positive drainage is maintained. Inspection of culvert installation must be done and must confirm the elevations of the installed culvert are set correctly prior to acceptance by HRM and transfer to Halifax Water.	NA	HRM - Development for PERMIT	Developer/Builder		**Closed**	8-Jun-10
23	CULVERT		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	CULVERT new for driveway access to EXISTING lots	An additional culvert is requested to provide enhanced access to existing lots in rural subdivisions.		Permit for the new driveway and culvert to be issued. Approval to include review of available sight distance for the access location and a review of the existing drainage to ensure positive drainage is maintained. Inspection of culvert installation must be done and must confirm the elevations of the installed culvert are set correctly prior to acceptance by HRM and transfer to Halifax Water.	NA	HRM - Traffic & ROW for PERMIT	Property Owner		**Closed**	8-Jun-10
24	CULVERT		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	CULVERT replacement requests	Property owners request existing driveway culverts to be replaced because of damage to culvert.		Inspect the existing culvert to assess damage. If warranted, replace culvert and headwalls.	CUL01	HW - WSC	HW - WSC		**Closed**	8-Jun-10

ATTACHMENT A - HRM & HW Responsibility Guide

Item	Asset/Feature	Definition	Origin of Item	Reference Type	Description	Picture	Action	Problem Codes	Responsibility		Fee for Service	Status	Date Approved by STC
									Work Done or Investigated by:	Work Paid by:			
25	DITCH	A ditch is a shallow to moderately deep depression created to convey water to an appropriate outfall. Ditches are typically used along roads in rural areas to provide road drainage. Most areas with ditch drainage systems will not have storm sewer piped systems as well. There may be some catchbasins or ditch inlets used to pick up localized drainage in small areas and discharge into the ditch areas. Ditches shall be sized to accept as a minimum the 5 year storm design flows or if to be used as the major overland flow route, they shall be sized to accept the 100 year storm design flows.	Merger Matrix Item 37A	DITCH blockage	The ditch has become blocked by eroded or placed shoulder gravel, dirt, or excess snow and ice.		Remove all material causing the blockage and reinstate ditch invert with similar material as was previously in place (i.e. if ditch has rip rap bottom, then replace with rip rap; if it is a grassed ditch, replace with grass - may need to stake if velocities and/or grades are high). Ensure reinstated ditch has positive drainage.	STR05	HRM - MOPS IF CAUSED BY SHOULDER COLLAPSE OR SNIC (may be contracted service by HW - WSC under agreement)	HRM - MOPS IF CAUSED BY SHOULDER COLLAPSE OR SNIC (may be contracted service by HW - WSC under agreement)	Possibly	**Closed**	8-Jun-10
26	DITCH		Merger Matrix Item 37A	DITCH blockage	The ditch has become blocked by other debris besides eroded or placed shoulder gravel, dirt, or excess snow and ice.		Remove all material causing the blockage and reinstate ditch invert with similar material as was previously in place (i.e. if ditch has rip rap bottom, then replace with rip rap; if it is a grassed ditch, replace with grass - may need to stake if velocities and/or grades are high). Ensure reinstated ditch has positive drainage.		HW - WSC GENERAL MAINTENANCE ISSUES	HW - WSC GENERAL MAINTENANCE ISSUES		**Closed**	8-Jun-10
27	DITCH		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	DITCH garbage	The ditch is filled with garbage.		Remove garbage from ditch.		HW - WSC	HW - WSC		**Closed**	8-Jun-10
28	DITCH		Post October 29th, 2009 Workshop	DITCH regrade	The ditch requires regrading.		Regrade ditch to ensure positive drainage.		HW - WSC	HW - WSC		**Closed**	8-Jun-10
29	DITCH		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	DITCH vegetation impeding visibility for motorists.	The ditch vegetation is creating a visibility problem for motorists.		Cut back vegetation only where there is a visibility obstruction. Aesthetics is not a reason for cutting of vegetation by HRM or HW - in this case, cutting should be left up to property owner.	STR05	HRM - MOPS DITCH VEGETATION OVERGROWING ROW & BACK OF DITCH IF ROW	HRM - MOPS DITCH VEGETATION OVERGROWING ROW & BACK OF DITCH IF ROW		**Closed**	8-Jun-10
30	DITCH		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	DITCH vegetation impeding flow of water.	The ditch vegetation is creating a visibility problem for motorists.	 	If the ditch is properly constructed to convey the required flows, vegetation should be left in the ditch as it has the following benefits: a) provides stabilization of the invert and side slopes; b) takes up a proportion of the water through root absorption; and, c) provides some stormwater treatment. If vegetation is causing impediment of flows, cutting can be done (HW - WSC). Aesthetics is not a reason for cutting of vegetation by HRM or HW - in this case, cutting should be left up to property owner.	DCH01	HW - WSC SLOPE TO SLOPE OF DITCH	HW - WSC SLOPE TO SLOPE OF DITCH		**Closed**	8-Jun-10

ATTACHMENT A - HRM & HW Responsibility Guide

Item	Asset/Feature	Definition	Origin of Item	Reference Type	Description	Picture	Action	Problem Codes	Responsibility		Fee for Service	Status	Date Approved by STC
									Work Done or Investigated by:	Work Paid by:			
31	DRAINAGE	Excess water levels caused from heavy or torrential rains, rapid snow and ice melts, a combination of excess snow and ice with heavy rains, or from a blockage or break in the storm or sanitary lateral/system. Flooding/drainage issues happen when the storm drainage systems do not have sufficient capacity to convey thes greater volumes of water than they were designed to convey. Flooding/drainage issues also can occur when storm water gets into the sanitary sewer which is designed to convey much smaller flows than the storm sewer system would convey. Blockages or breaks in the main lines or laterals can contribute to flooding or drainage issues.	Merger Matrix Item 49	DRAINAGE flooding ditches	Excess water results in overtopped ditches.		Investigate to ensure the ditch does not have any blockages. If blocked, remove the blockage. If not blocked, use reasonable efforts to prevent property damage. Ditches shall be designed in accordance with Halifax Water Specifications (to be enforced by HRM Development).	DRAIN	HW - WSC	HW - WSC		**Closed**	8-Jun-10
32	DRAINAGE		Merger Matrix Item 49	DRAINAGE flooding of basement from blocked/broken sanitary or storm drain/lateral PUBLIC side	The sanitary or storm sewer lateral is blocked within the PUBLIC right-of-way (ROW) resulting in a surcharge in the lateral (sewer backup) and flooding into the basement.		Investigate the source of the blockage. If the blockage is located in the portion of the lateral within the public right-of-way, Halifax Water will resolve. If the blockage is located in the lateral on private property, owner to resolve.	DRAIN	HW - WSC	HW - WSC		**Closed**	8-Jun-10
33	DRAINAGE		Merger Matrix Item 24	DRAINAGE flooding of basement from blocked/broken sanitary or storm drain/lateral PRIVATE side	The sanitary or storm sewer lateral is blocked within the PRIVATE property section of the lateral resulting in a surcharge in the lateral (sewer backup) and flooding into the basement.		Investigate the source of the blockage. If the blockage is located in the portion of the lateral within the public right-of-way, Halifax Water will resolve. If the blockage is located in the lateral on private property, owner to resolve.	DRAIN	HW - WSC	Property Owner		**Closed**	8-Jun-10
34	DRAINAGE		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	DRAINAGE flooding of property (either exterior to building or basement flooding) from water draining from streets or other HRM owned lands	Excess water is draining off HRM owned lands or streets and causing flooding on private property.		Investigate the origin of the excess water and remove sources originating from HRM owned lands and streets. If new infrastructure is to be installed, HRM shall submit proposed drainage design change and supporting drainage calculations to Halifax Water where culvert will add to existing storm drainage system under Halifax Water's jurisdiction. Need to ensure the proposed change will not create capacity issues with the existing system. Once sign-off is received from Halifax Water, install the culvert as proposed in the design and according to Halifax Water standards for storm sewer systems. Halifax Water to be notified when infrastructure will be installed to have the opportunity to inspect. HRM to provide all asset information and elevations to Halifax Water after construction.	DRAIN	HRM - Development	HRM - Design		**OPEN**	
35	DRAINAGE		Post October 29th, 2009 Workshop	DRAINAGE flooding of property (either exterior to building or basement flooding) from water draining from adjacent private property	Excess water is draining off adjacent private property and causing flooding of property.		Investigate the origin of the excess water and advise complainant if the water is coming from adjacent private property that the issue must be addressed between the involved/affected owners (civil matter not requiring HRM or HW resolution).	DRAIN	HRM - Development	Property Owner		**OPEN**	
36	DRAINAGE		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	DRAINAGE flooding of property (either exterior to building or basement flooding) from adjacent school board property	Excess water is draining off Halifax Regional School Board (HRSB) property and causing flooding on private property.		Investigate the origin of the excess water and if related to the school board lands, refer matter to the HRSB for resolution.	DRAIN	HRM - Development	HRSB		**OPEN**	
37	DRAINAGE		STC Meeting Jan 4, 2010	DRAINAGE grass cutting of off-street drainage systems owned by Halifax Water	Occasionally concerns are raised regarding grass in the off-street drainage systems. Often this is an issue of aesthetics rather than a restriction to flow within the drainage system itself.		If the ditch is properly constructed to convey the required flows, vegetation should be left in the ditch as it has the following benefits: a) provides stabilization of the invert and side slopes; b) takes up a proportion of the water through root absorption; and, c) provides some stormwater treatment. If vegetation is causing impediment of flows, cutting can be done (HW - WSC).	DCH01	HW - WSC	HW - WSC		**Closed**	8-Jun-10

ATTACHMENT A - HRM & HW Responsibility Guide

Item	Asset/Feature	Definition	Origin of Item	Reference Type	Description	Picture	Action	Problem Codes	Responsibility		Fee for Service	Status	Date Approved by STC
									Work Done or Investigated by:	Work Paid by:			
38	DRAINAGE		STC Meeting Jan 4, 2010	DRAINAGE grass cutting of off-street drainage systems that are owned by HRM.	Occasionally concerns are raised regarding grass in the off-street drainage systems. Often this is an issue of aesthetics rather than a restriction to flow within the drainage system itself.	 	If the ditch is properly constructed to convey the required flows, vegetation should be left in the ditch as it has the following benefits: a) provides stabilization of the invert and side slopes; b) takes up a proportion of the water through root absorption; and, c) provides some stormwater treatment. If grass cutting is desired for aesthetic reasons, it's removal is discretionary.	GRS02	HRM - MOPS	HRM - MOPS		**Closed**	8-Jun-10
39	DRAINAGE		STC Meeting Jan 4, 2010	DRAINAGE grass cutting of off-street drainage systems that are owned privately.	Occasionally concerns are raised regarding grass in the off-street drainage systems. Often this is an issue of aesthetics rather than a restriction to flow within the drainage system itself.		Grass cutting on privately owned off-street drainage corridors is the responsibility of the property owner.	DCH01	Property Owner	Property Owner		**Closed**	8-Jun-10
40	DRAINAGE		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	DRAINAGE construction of asphalt swale	Asphalt swales are used in rural areas to help prevent continued erosion of the road/shoulder gravels at historical locations.		At locations of severe and consistent gravel/shoulder erosion, construct asphalt swales to help channel water into the ditch system. These should be constructed after the pattern of erosion has been established.	STROA	HRM - MOPS	HRM - MOPS		**Closed**	8-Jun-10
41	DRAINAGE		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	DRAINAGE gravel in ditch from asphalt swale	Asphalt swales convey accumulated road/shoulder gravels and debris into the ditch causing a reduction in the carrying capacity of the ditch drainage system.	 	Remove and dispose of all material causing the blockage and reinstate ditch invert with similar material as was previously in place (i.e. if ditch has rip rap bottom, then replace with rip rap; if it is a grassed ditch, replace with grass - may need to stake if velocities and/or grades are high). Ensure reinstated ditch has positive drainage. HW OPERATIONS TO REVIEW AND COMMENT ON THE ACTION SHOWN ABOVE - MAY NOT BE CONSISTENTLY DONE THIS WAY AT PRESENT.	STR05	HRM - MOPS (may be a contracted service by HW - WSC under agreement)	HRM - MOPS (may be a contracted service by HW - WSC under agreement)	Yes	**Closed**	8-Jun-10
42	DRAINAGE		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	DRAINAGE - related to major overland flow routes/channels	The major overland flow route or channel is obstructed or requires maintenance. This flow route is part of the defined stormwater management plan and a parcel or an easement is in place in favour of Halifax Water.		Remove and dispose of all material causing the blockage and reinstate ditch invert with similar material as was previously in place (i.e. if ditch has rip rap bottom, then replace with rip rap; if it is a grassed ditch, replace with grass - may need to stake if velocities and/or grades are high). Ensure reinstated ditch has positive drainage. HW OPERATIONS TO REVIEW AND COMMENT ON THE ACTION SHOWN ABOVE - MAY NOT BE CONSISTENTLY DONE THIS WAY AT PRESENT.		HW - WSC	HW - WSC		**Closed**	8-Jun-10

ATTACHMENT A - HRM & HW Responsibility Guide

Item	Asset/Feature	Definition	Origin of Item	Reference Type	Description	Picture	Action	Problem Codes	Responsibility		Fee for Service	Status	Date Approved by STC
									Work Done or Investigated by:	Work Paid by:			
43	MANHOLE	A manhole is a structure installed wherever there is a change in pipe size, change in sewer alignment/direction, and at regular spacing on straight sewer runs for the purposes of gaining access to the sewer system. Access to the system is needed to allow for Operations crews to perform routine maintenance, inspection and repairs of both the manholes themselves and the sewer pipes upstream and downstream of the manholes. Manholes are also used to provide access to the system for flow monitoring purposes. Manholes may also be referred to as maintenance holes, or catchbasin manholes (which also have the function of collecting surface water for the storm sewer system only).	Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	MANHOLE broken/damaged/missing FRAME AND GRATE	The frame and grate (top part of the manhole) is broken or damaged. This is typically the result of winter snow plowing operations.	 	Replace frame and grate.	SNSDP SNST2	HW - WSC	HRM - MOPS DURING SNIC SEASON **ONLY**		**Closed**	8-Jun-10
44	MANHOLE		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	MANHOLE broken/damaged/missing FRAME AND GRATE	The frame and grate (top part of the manhole) is broken or damaged.		Replace frame and grate.		HW - WSC GENERAL MAINTENANCE ISSUES	HW - WSC GENERAL MAINTENANCE ISSUES		**Closed**	8-Jun-10
45	MANHOLE		Post October 29th, 2009 Workshop	MANHOLE broken/damaged STRUCTURE BELOW GROUND, SUNKEN & may could cause the breakdown of the surrounding asphalt/concrete	The manhole itself (part of the manhole structure below ground) is broken or damaged.		Repair or replace manhole. 		HW - WSC	HW - WSC		**Closed**	8-Jun-10
46	MANHOLE		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	MANHOLE broken asphalt/concrete at surface	The manhole structure below grade is in tact (i.e. not damaged). Asphalt or concrete around the manhole is pitted, broken or damaged. This type of defect is typically caused by freeze and thaw cycles due to inadequate drainage of the road subgrade or because of faulty compaction around the manhole. This defect includes previous cut and patch of the road surface around the manhole.		Repair or replace the asphalt or concrete around the manhole.  	STROA	HRM - MOPS	HRM - MOPS		**Closed**	8-Jun-10
47	MANHOLE		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	MANHOLE needs to be brought up to proper grade due to settled road bed, raised manhole and cut & patch - Asphalt Fix	The manhole structure below grade is in tact (i.e. not damaged). The road or ground around the manhole needs to be brought up to proper grade to maintain a level and constant driving surface and eliminate ponding around manhole. This defect is caused by an undulating road grade or by compaction issues with the road structure itself.	 	Pad, repair or replace the asphalt around and adjacent to the manhole to reinstate the desired road grade. This may need to be prioritized with other capital projects due to the extent of repair needed.	STROA	HRM - MOPS	HRM - MOPS		**Closed**	8-Jun-10

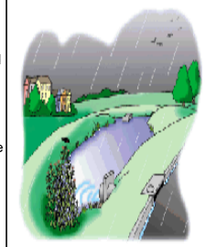
ATTACHMENT A - HRM & HW Responsibility Guide

Item	Asset/Feature	Definition	Origin of Item	Reference Type	Description	Picture	Action	Problem Codes	Responsibility		Fee for Service	Status	Date Approved by STC
									Work Done or Investigated by:	Work Paid by:			
48	MANHOLE		Transcript of October 29th, 2009 Workshop	MANHOLE needs to be relocated or added - CAPITAL WORK	NEW - a manhole needs to be relocated or added during a major road reconstruction project. This is required as a result of a drainage or road redesign, improved or enhanced drainage design to resolve existing and ongoing drainage deficiencies, or due to conflicts with other utility plant.		HRM to submit proposed drainage design change and supporting drainage calculations to Halifax Water. HRM to demonstrate that the additional infrastructure/proposed change will not create capacity issues with the existing system. Once sign-off is received from Halifax Water, install the catchbasin as proposed in the design and according to Halifax Water standards for storm sewer systems. Halifax Water to be notified when catchbasin will be installed to have the opportunity to inspect. HRM to provide all asset information and elevations to Halifax Water after construction.		HRM - Design & Construction	HRM - Design & Construction		**OPEN**	
49	MANHOLE		Transcript of October 29th, 2009 Workshop	MANHOLE needs to be relocated or added - DEVELOPMENT	NEW - a manhole needs to be relocated or added during a major road reconstruction project. This is required as a result of a drainage or road redesign, improved or enhanced drainage design to resolve existing and ongoing drainage deficiencies, or due to conflicts with other utility plant.		HRM to submit proposed drainage design change and supporting drainage calculations to Halifax Water. HRM to demonstrate that the additional infrastructure/proposed change will not create capacity issues with the existing system. Once sign-off is received from Halifax Water, install the catchbasin as proposed in the design and according to Halifax Water standards for storm sewer systems. Halifax Water to be notified when catchbasin will be installed to have the opportunity to inspect. HRM to provide all asset information and elevations to Halifax Water after construction.		HRM - Development	HRM - Development		**OPEN**	
50	MANHOLE		Merger Matrix Item 14	MANHOLE located in HRM park or sportsfield	Manhole installed in HRM park or sportsfield as part of a localized system to address surface water issues at the park, field, playground etc. Manhole may or may not be connected to the municipal storm sewer system. Manhole may become blocked, broken, damaged, or have settlements around it.		Remove blockages, repair settlements, repair or replace manhole as needed.	PRF02 PRF03	HRM - MOPS (may be a contracted service by HW - WSC under agreement)	HRM - MOPS (may be a contracted service by HW - WSC under agreement)	Possibly	**Closed**	8-Jun-10
51	MANHOLE		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	MANHOLE located in drainage easement off street	Manhole installed in off-street drainage easement as part of the overall storm drainage system. Manhole is typically connected to the municipal storm sewer system. Manhole may become blocked, broken, damaged, or have settlements around it.		Remove blockages, repair settlements, repair or replace manhole and leads as needed.		HW - WSC	HW - WSC		**Closed**	8-Jun-10

ATTACHMENT A - HRM & HW Responsibility Guide

Item	Asset/Feature	Definition	Origin of Item	Reference Type	Description	Picture	Action	Problem Codes	Responsibility		Fee for Service	Status	Date Approved by STC
									Work Done or Investigated by:	Work Paid by:			
52	POTHOLE	A pothole is a road surface flaw where a portion of the road material is broken away leaving a hole. Pothole formation is always associated with asphalt fatigue damage typically caused by freeze and thaw cycles due to inadequate drainage of the road subgrade or because of faulty compaction of the road bed.	Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	POTHOLE asphalt roads	Areas with poor road subgrade drainage trap water in the subgrade. Water expands when it freezes, therefore, potholes appear as a result of the freeze/thaw cycle. Asphalt will expand and contract from the freeze/thaw cycle and will eventually fail. When the surface becomes cracked and more particulate, traffic movement and snow plow activities will remove material creating a hole.		Repair potholes.	STR03	HRM - MOPS	HRM - MOPS		**Closed**	8-Jun-10
53	POTHOLE		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	POTHOLE gravel roads, grading and dust control	Unpaved roads are susceptible to "ripples" that appear in the surface of the road. As more traffic rolls over these roads, the ripples become more pronounced and affect the driving surface more significantly. These ripples can become more severe with increased speeds. These are called "washboard" roads and the low areas between the ripples can collect water.		Regrade road.	STR02	HRM - MOPS	HRM - MOPS		**Closed**	8-Jun-10
54	SHOULDER	The gravel area adjacent to the edge of pavement that provides additional stability to the road bed construction, temporary refuge for drivers, and walking surface in rural areas. Shoulders should be graded at a constant grade (typically 2 to 4%) and should be compacted to help ensure material remains on the shoulder.	Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	SHOULDER drainage	There is water ponding/pooling on the shoulder due to inconsistent shoulder grades and/or rutting. This defect can also be the result of freeze and thaw cycles due to inadequate drainage of the road subgrade or because of faulty compaction of the road bed/shoulder.		Replace, regrade and compact shoulders to re-establish the constant shoulder grade and eliminate the opportunities for ponding/pooling.	STR05	HRM - MOPS	HRM - MOPS		**Closed**	8-Jun-10
55	SHOULDER		Merger Matrix Item 37A	SHOULDER washout	Shoulder gravels are washed into the ditch as a result of heavy rains, rapid melting of ica and snow, elevated stream levels, or a flood. Ditch becomes filled taking away ditch capacity to convey water.		Replace, regrade and compact shoulders to re-establish the constant shoulder grade. Remove and dispose of all material causing the blockage and reinstate ditch invert with similar material as was previously in place (i.e. if ditch has rip rap bottom, then replace with rip rap; if it is a grassed ditch, replace with grass - may need to stake if velocities and/or grades are high). Ensure reinstated ditch has positive drainage.	STR05	HRM - MOPS (may be a contracted service by HW - WSC under agreement)	HRM - MOPS (may be a contracted service by HW - WSC under agreement)	Possibly	**Closed**	8-Jun-10
56	SINKHOLE	A sinkhole occurs when there is void/depression beneath the road and in some cases the pavement has given way. A sinkhole is a much more extensive version of a pothole and has the potential to cause substantial damage to pedestrians and vehicles. The sinkhole could be the result of flowing water underground (i.e. groundwater movement) or a broken water or sewer pipe.	Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	SINKHOLE from groundwater	Sinkhole appears as a result of groundwater movement that creates voids in the subsurface and causes the ground to settle.		Confirm the source of the sinkhole and look for opportunities to allow the groundwater to discharge. Repair road bed and surface.	SHREP	HRM - MOPS	HRM - MOPS		**Closed**	8-Jun-10
57	SINKHOLE		Defect Ref. Guide, Transcript of October 29th, 2009 Workshop	SINKHOLE from broken water or sewer pipe	Sinkhole appears as a result of a broken water or sewer pipe where water starts moving from the pipes below ground and creates voids in the subsurface causing the ground to settle.		Confirm the source of the sinkhole. Repair the damaged pipe and repair road bed and surface.	SHINS	HW - WSC	HW - WSC		**Closed**	8-Jun-10

ATTACHMENT A - HRM & HW Responsibility Guide

Item	Asset/Feature	Definition	Origin of Item	Reference Type	Description	Picture	Action	Problem Codes	Responsibility		Fee for Service	Status	Date Approved by STC
									Work Done or Investigated by:	Work Paid by:			
58	STORMWATER	Stormwater systems convey surface water flows in variety of ways: a) minor storm is conveyed in either the ditch or municipal storm sewer system; b) stormwater ponds are included in the design of newer subdivision mostly to provide some level of quantity control for storm water flows (retention/detention and release); c) major storm flows are conveyed in the major overland flow network (typically using ditches); d) erosion and sediment protection at all storm sewer outfalls.	Merger Matrix Item 37A	STORMWATER general issues	By current HRM standards, stormwater ponds provide very limited quality control (treatment) of storm water. Ponds should be designed with a sediment forebay to allow for solids settlement in the short term and the main bay to handle storm water retention for a period of time. Water should be discharged from the pond such that the discharge rate does not exceed the rate of storm water flow observed over the lands pre-development. Provision should be made to accommodate emergency major overland flow volumes to an appropriately sized and constructed major overland flow route. Provision should also be made for access to all areas of the pond to facilitate cleaning and removal/disposal of accumulated sediments.		Review original design to ensure it meets applicable requirements and that the design does not cause undue impacts to the downstream receiving environment.		HRM - Development	HRM - Development (possible back charge to builder/developer and/or developer's engineer)		**OPEN**	
59	STORMWATER		Merger Matrix Item 14	STORMWATER PONDS flooding parks, greenbelts, sports fields	Stormwater ponds discharge to existing HRM park and greenspace lands at a rate that cannot be supported by the land (i.e. the open space is not able to infiltrate the quantity of water discharged to it). Areas become flooded.		Investigate the source of the discharge, and verify the storm water pond design. Pond discharges should not create impacts that prevent the continued enjoyment of the lands over which they discharge. May need to go back to original designer to review and rectify the pond design or come up with alternate conveyance of the flows through the HRM green spaces.		HRM - Development	HRM - Development (possible back charge to builder/developer and/or developer's engineer)		**OPEN**	
60	STORMWATER		Transcript of October 29th, 2009 Workshop	STORMWATER PONDS flooding private property	Stormwater ponds discharge to existing private property lands at a rate that cannot be supported by the land (i.e. the land is not able to infiltrate the quantity of water discharged to it). Areas become flooded.		Investigate the source of the discharge, and verify the storm water pond design. Pond discharges should not create impacts that prevent the continued enjoyment of the lands over which they discharge. May need to go back to original designer to review and rectify the pond design or come up with alternate conveyance of the flows through the HRM green spaces.		HRM - Development	HRM - Development (possible back charge to builder/developer and/or developer's engineer)		**OPEN**	
61	STORMWATER		STC Meeting Jan 4, 2010	STORMWATER new systems needed in areas with no sanitary sewers (may include pipes or ditch systems)	Areas with no existing storm or sanitary sewers require a stormwater system. 		HRM to submit proposed drainage design change and supporting drainage calculations to Halifax Water. HRM to demonstrate that the additional infrastructure/proposed change will not create capacity issues with the existing system. Once sign-off is received from Halifax Water, install the infrastructure as proposed in the design and according to Halifax Water standards for storm sewer systems. Halifax Water to be notified when infrastructure will be installed to have the opportunity to inspect. HRM to provide all asset information and elevations to Halifax Water after construction.		HRM - Design HW - E&IS may take the lead on these	HRM		**OPEN**	
62	STORMWATER		Merger Matrix	STORMWATER new or improved systems (DEEP STORM) needed in existing sanitary serviced areas	Areas with either existing, under-capacity storm sewer systems or no storm sewer systems where sanitary sewers already exist. Proposal on the table for a third-third-third cost sharing arrangment between Halifax Water, HRM, and the property owner for the installation of new deep storm sewers given the relative benefit to each party.		HRM to submit proposed drainage design change and supporting drainage calculations to Halifax Water. HRM to demonstrate that the additional infrastructure/proposed change will not create capacity issues with the existing system. Once sign-off is received from Halifax Water, install the infrastructure as proposed in the design and according to Halifax Water standards for storm sewer systems. Halifax Water to be notified when infrastructure will be installed to have the opportunity to inspect. HRM to provide all asset information and elevations to Halifax Water after construction.		HRM - Design HW - E&IS may take the lead on these	HRM HW Property Owner		**OPEN**	

ATTACHMENT B - Streets Serviced				
STREET NAME	**STREET RANGE**	**COMMUNITY**	**DISTRICT**	**LENGTH (m)**
ALPS RD	48-225	PORTERS LAKE	2	899.13
ASHBERRY CRT	1-163	UPPER TANTALLON	13	477.33
BALI TERR	1-72	PORTERS LAKE	2	230.99
BEARTOOTH WAY	1-84	LEWIS LAKE	13	257.13
BETH CRT	1-45	MINEVILLE	2	127.14
BIRCH BEAR RUN	1-695	LEWIS LAKE	13	2177.86
BLACKBEAR CIR	1-310	LEWIS LAKE	13	992.20
CALDERWOOD DR	120-540	WELLINGTON	1	1268.57
CANDLEWOOD DR	20-200	PORTERS LAKE	2	597.06
CATHY RD	36-80	BROOKSIDE	11	266.30
CINDY DR	178-300	GRAND LAKE	1	317.24
CLIVEDON CRT	1-320	FALL RIVER	1	994.78
COULTER CRES	1-290	OAKFIELD	1	896.40
COYOTE RG	136-240	GRAND LAKE	1	300.40
CURTO CRT	1-64	PORTUGUESE COVE	11	205.73
DAKOTA DR	1-300	WELLINGTON	1	952.81
DAVID ALLEN DR	91-161	EAST LAWRENCETOWN	2	284.13
DEERMIST DR	1-190	PORTERS LAKE	2	603.22
DELRAY CRT	1-70	FALL RIVER	1	212.27
EARL CRT	34-56	PORTERS LAKE	2	193.00
EMERALD DR	1-52	THREE FATHOM HARBOUR	2	378.03
EMILY CRT	1-95	MINEVILLE	2	281.30
EVERGREEN CRES	1-6	WEST PORTERS LAKE	2	45.83
FAUNE LANE	1-76	HUBLEY	13	206.13
FIDDLE PKY	86-100	HATCHET LAKE	11	115.51
FIDDLEHEAD WAY	1-60	PORTERS LAKE	2	158.80
FOX HOLLOW DR	86-180	UPPER TANTALLON	13	303.45
FOX POINT CRT	1-88	UPPER TANTALLON	13	297.68
GAMMON LAKE DR	1-585	LAWRENCETOWN	2	1796.85
GRANITE COVE DR	131-316	HUBLEY	13	1473.40
HOLLANDBROOK RUN	1-85	HUBLEY	13	262.80
IRISWEG DR	60-235	BROOKSIDE	11	1302.99
ISLANDLAKE CL	1-140	HUBLEY	13	430.71
JERICHO RD	29-104	HUBLEY	13	396.89
JOAN ELIZABETH WAY	1-80	PORTERS LAKE	2	239.36
KEIGAN DR	1-70	ENFIELD	1	538.71
KESTREL CRT	1-75	HALIBUT BAY	11	210.08
KITTIWAKE RG	1-80	HALIBUT BAY	11	278.92
LES COLLINS AVE	1-515	WEST CHEZZETCOOK	2	2394.41
LILLIAN DR	48-84	LAWRENCETOWN	2	363.21
MACDONALD POINT RD	171-190	SEABRIGHT	13	66.92
MACFARLANE ST	15-42	LAKE ECHO	2	179.43
MELANSON LANE	1-76	BROOKSIDE	11	209.08
MORAINE DR	1-100	ENFIELD	1	737.35
MORGAN DR	1-190	LAWRENCETOWN	2	596.58

MORNINGTON CRT	1-70	FALL RIVER	1	208.82
NEVAN RD	1-80	PORTERS LAKE	2	256.66
NORWOOD CRT	1-35	PORTERS LAKE	2	447.49
NOTTING HILL RD	1-212	MINEVILLE	2	644.51
OAKWOOD DR	66-123	WILLIAMSWOOD	11	304.82
OCONNELL DR	40-100	PORTERS LAKE	2	661.50
OLIVIA LANE	1-50	PROSPECT	11	113.04
OMEGA CRT	1-40	HUBLEY	13	121.67
OTTER LAKE DR	1-800	OTTER LAKE	12	2780.86
PARK CRT	1-100	HATCHET LAKE	11	314.22
PORTOVISTA DR	1-250	PORTUGUESE COVE	11	808.14
PREAKNESS CRES	1-525	FALL RIVER	1	1629.20
RIDGEWOOD DR	1-25	HEAD OF ST MARGARETS BAY	13	256.03
ROCKCLIFFE DR	71-265	ENFIELD	1	1097.82
RUSSELL DR	71-91	LAWRENCETOWN	2	141.88
SARAH INGRAHAM DR	58-142	WILLIAMSWOOD	11	977.75
SAWGRASS DR	1-200	OAKFIELD	1	1235.36
SCHOLARS RD	1-32	UPPER TANTALLON	13	238.16
SEDONA CRT	1-61	OAKFIELD	1	189.43
SHADY VISTA DR	40-65	HATCHET LAKE	11	207.00
SHORELINE DR	1-151	MINEVILLE	2	527.10
STARFLOWER WAY	1-325	BROOKSIDE	11	1004.08
STONEY CREEK DR	11-209	MINEVILLE	2	593.34
SWAN CRES	1-121	WHITES LAKE	11	390.09
THICKET DR	1-395	BROOKSIDE	11	1227.52
WAYNE CRT	1-94	LAWRENCETOWN	2	234.80
WESTRIDGE RD	13-340	HATCHET LAKE	11	1097.10
WITHROW CRT	1-125	HUBLEY	13	378.16
YEAHOLM WAY	1-90	BROOKSIDE	11	304.49

April 20, 2022

Dear Resident

As you may be aware, in July 2021, Regional Council approved the transfer of approximately 300 lane kilometres of roads from the Province of Nova Scotia to the Halifax Regional Municipality (municipality) in two areas.

On June 1, 2022, the responsibility for regular care and maintenance of roads and stormwater in your area will be transferred from the Province of Nova Scotia to the Halifax Regional Municipality (municipality) and Halifax Water.

The first impacted area (area 1) includes roads within Boutiliers Point, Ingramport, Head of St Margarets Bay, Lewis Lake, Hubley and Upper Tantallon. The second area (area 4) includes roads within East Preston, Lake Echo, Mineville, and the Western areas of Lawrencetown.

On that date, the municipality's Transportation & Public Works (TPW) department will be the new service provider for general and winter maintenance for the roads located in these areas. Additionally, per the April 13, 2022 approval by the Nova Scotia Utility and Review Board (NSUARB), property owners in these areas may also become stormwater customers of Halifax Water.

To learn more, see the information below as well as the attached brochures.

What does this mean for me?

You are receiving this letter because you are located on a road impacted by this transfer. As of June 1, 2022, it is anticipated that the municipality's Transportation & Public Works (TPW) department will take over responsibility for all the "right of way maintenance" on your road from the Province of Nova Scotia. As well, per the April 13, 2022 approval by the NSUARB, Halifax Water will become responsible for maintaining the stormwater system in coordination with the municipality.

For home and property owners, the municipality expects cost increases associated with the road transfer in the form of increases to your annual property tax bill in addition to potential new Halifax Water charges. These costs are required to operate, maintain and replace (as required) the additional infrastructure for which the municipality will be responsible.

Visit halifax.ca/roadtransfer for more details about what this transfer of roadways and stormwater systems will mean to you.

What costs are associated with this transfer?

Property owners can expect the following costs associated with the transfer:

- The costs to operate, maintain and replace (as required) the additional roads and infrastructure will mean an increase to the average homeowner's 2022/23 tax bill of approximately $22, across the Halifax region.
- Property owners who become customers of Halifax Water will see an annual $40 stormwater right of way charge – collected by Halifax Water on behalf of the municipality – as well as an annual potential site-specific charge calculated based on your impervious area, please visit halifaxwater.ca/rates-charges#stormwater for details on rates.

These costs are required to operate, maintain and, in some cases, replace the roadway and stormwater infrastructure that will be transferred to the municipality and Halifax Water.

For the latest information on the transfer of the roads and the expected costs associated with this transfer, please visit halifax.ca/roadtransfer.

For the latest information on the transfer of the stormwater systems, including any details of the April 13, 2022 NSUARB approval and the expected costs, please visit halifaxwater.ca/stormwater-expansion.

What does "right of way maintenance" of roads mean?

"Right of way maintenance" generally describes the care and maintenance of roads and bridges, as well as assets along the roadside such as trees, lighting, signage, and guard rails.

The services that compose the right of way maintenance include, but are not limited to, road repairs and asset recapitalization; addressing vegetation intrusion; grading roads; repairing the shoulders of roads; flood mitigation; dead animal and litter removal, garbage collection and snow and ice removal services.

For further information about right of way services, please visit halifax.ca/roadtransfer.

What does "stormwater system" mean?

"Stormwater" is the water from rain, melted snow and ice that runs from roofs, parking lots, driveways, and other hard surfaces. Halifax Water provides stormwater services to thousands of customers throughout the Halifax Regional Municipality. For information about stormwater systems, please visit halifaxwater.ca/stormwater-expansion.

Why is this road transfer happening?

A review of the municipal urban service boundary occurs periodically.

As part of this review, population densities are assessed and, together with other factors, a determination is made about transferring the responsibility for maintaining roads from the province to the municipality. Various arrangements between the province and the municipality,

(including a road transfer document entitled HRM-01, which can be found at halifax.ca/HRM-01) address the process of the transferring of roads.

Which roads are impacted by this transfer?

The first area (area 1) includes roads within Boutiliers Point, Ingramport, Head of St Margarets Bay, Lewis Lake, Hubley and Upper Tantallon.

The second area (area 4) includes roads within East Preston, Lake Echo, Mineville, and the Western areas of Lawrencetown.

Maps of the transfer zones, and the roads that are anticipated to be transferred, are attached to this letter and are available at halifax.ca/roadtransfer and halifax.ca/explorehrm.

What changes will occur to the services on my road as a result of this transfer?

You will not see a change to the types of services provided in your area – what is changing is who will be providing that service.

As a result of the upcoming transfer, instead of the province providing the right of way maintenance, these services will be performed by the municipality beginning June 1, 2022. On this date, the municipality will provide your area with the same level of right of way maintenance that is provided to all other customers. Services related to the stormwater systems will be assumed by Halifax Water.

There will be no disruptions in services throughout the transfer period.

For further information about right of way services, please visit halifax.ca/roadtransfer.

For information about stormwater systems, please visit halifaxwater.ca/stormwater-expansion.

What steps are the municipality and Halifax Water taking to prepare for this transfer?

The municipality continues to work closely with the Province of Nova Scotia and Halifax Water to gather data from the province about the current state of the roads and related infrastructure within the transfer boundaries.

The municipality is verifying this data with on-site inspections to determine the condition of the roads and infrastructure. Additionally, the municipality is reviewing the right of way service requirements in your community, as well as setting short- and long-term service goals for your area.

Furthermore, in anticipation of the transfer, the municipality is assessing its staffing needs, communicating with the province and Halifax Water and aligning its internal services.

On April 13, 2022, NSUARB approved the transfer for the stormwater boundary expansion to Halifax Water. Halifax Water will be in further contact with you. Please see the attached brochure for further information regarding stormwater services as well as halifaxwater.ca/stormwater-expansion.

Who do I call if I have road maintenance or stormwater issues?

Property owners should continue to work with Nova Scotia Public Works to address road and stormwater maintenance, by contacting 1-844-696-7737, until June 1, 2022.

After June 1, 2022, for road service and related right of way maintenance requests, property owners may contact the municipality's Customer Contact Centre, by calling 311 or emailing contactus@311.halifax.ca. Please see the enclosed Transportation & Public Works brochure for details, including an overview of the services to be provided by the municipality.

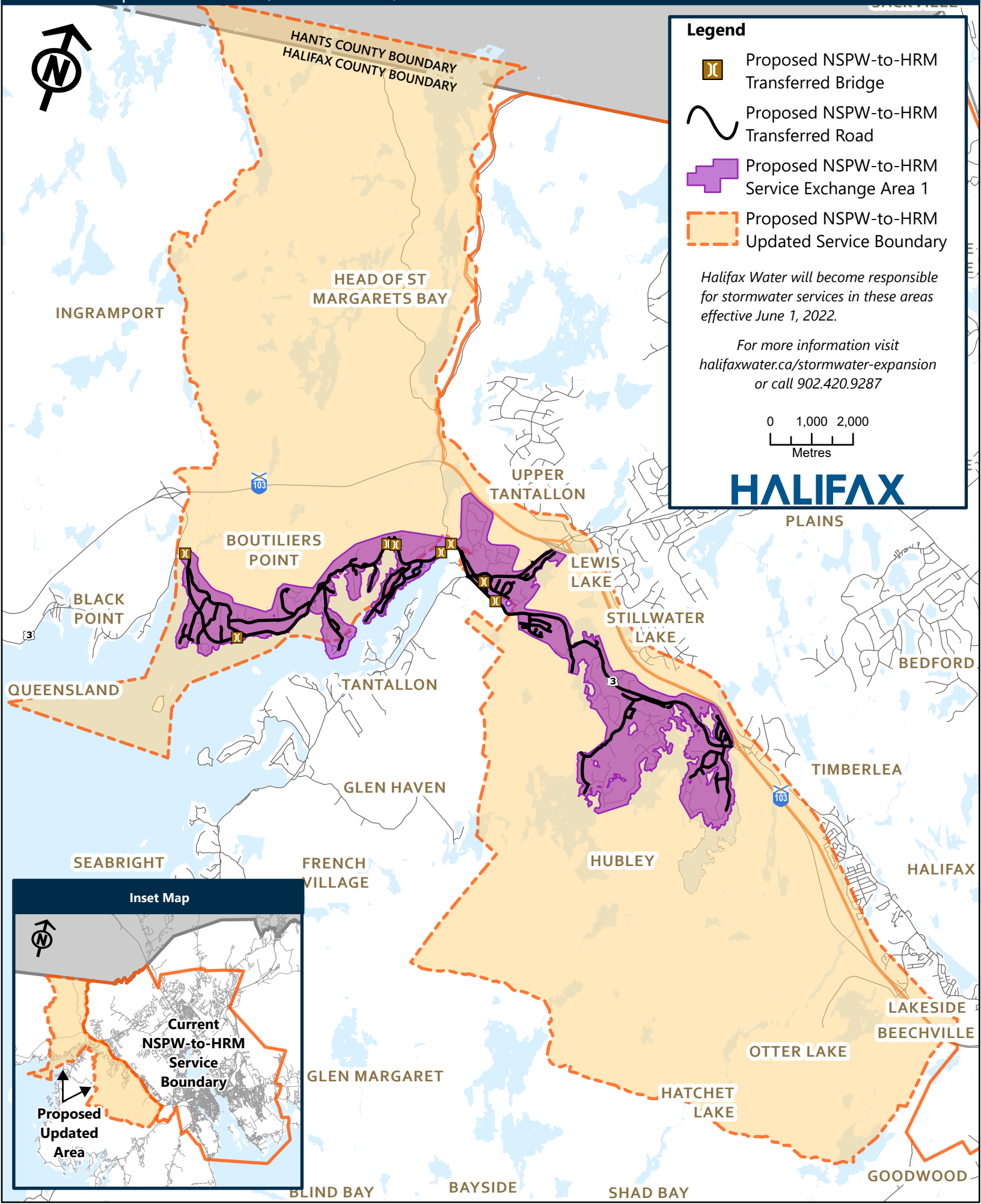
Per NSUARB approval April 13, 2022, Halifax Water will notify all property owners whether or not they will become customers. A Halifax Water brochure is enclosed which has further details, including its customer contact centre information. After June 1, 2022, for any Halifax Water-related questions, property owners may visit halifaxwater.ca/stormwater-expansion or contact the Halifax Water Customer Care Centre at 902.420.9287.

Transportation & Public Works
Halifax Regional Municipality
PO Box 1749
Halifax, NS
B3J 3A5
Tel: 311
Email: contactus@311.halifax.ca

Attachment 1: NSPW to HRM transfer Area 1
Attachment 2: NSPW to HRM transfer Area 2

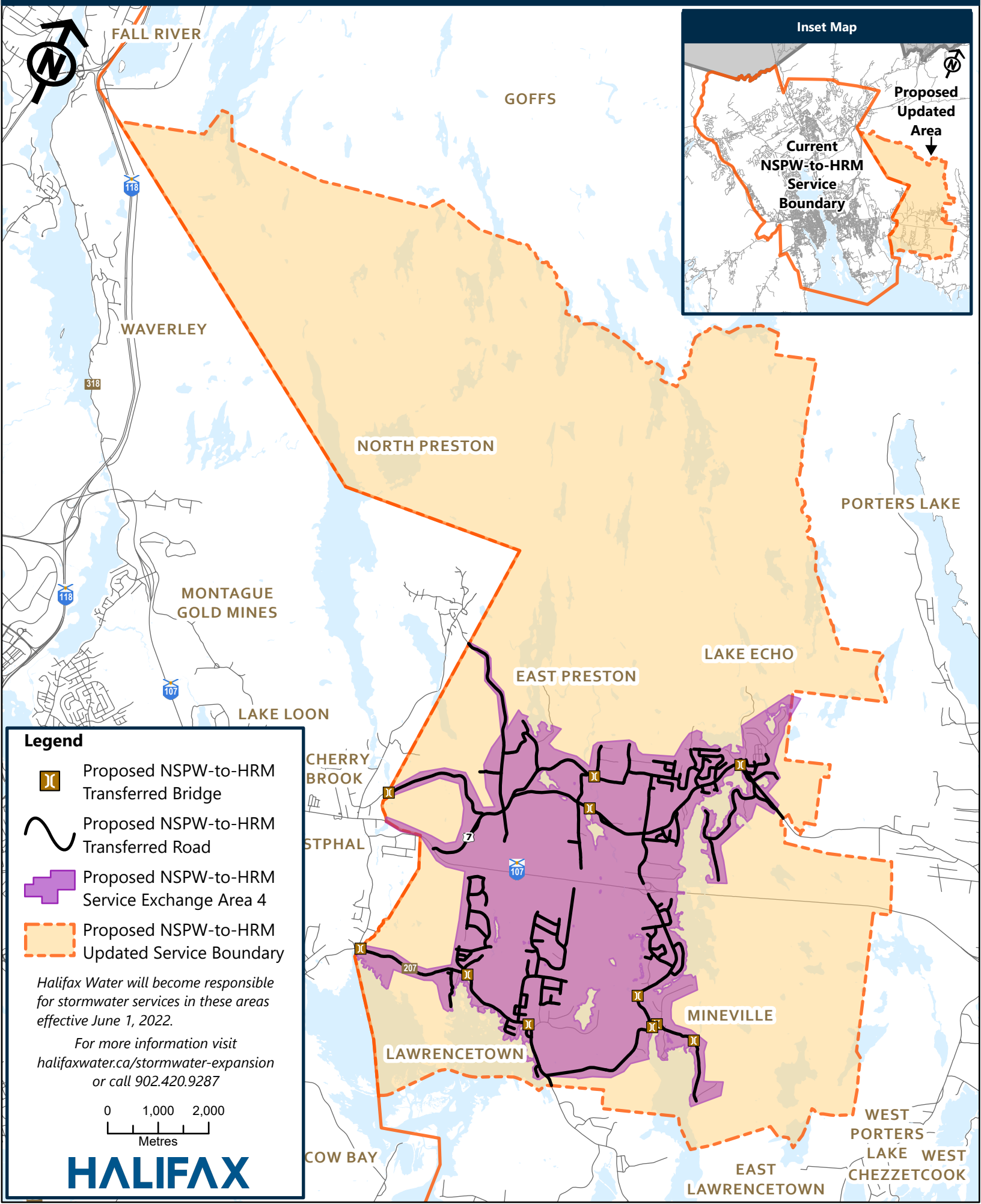
ATTACHMENT D: Letter Attachment 1: NSPW-to-HRM Service Boundary Update Area 1

For a complete list of roads, visit halifax.ca/road transfer or call 311



Attachment E: Letter Attachment 2: NSPW-to-HRM Service Boundary Update Area 4

For a complete list of roads, visit halifax.ca/road transfer or call 311



WHAT IS HAPPENING?

On June 1, 2022, approximately 300 lane kilometres of roads will be transferred from the Province of Nova Scotia to the Halifax Regional Municipality (municipality) in two areas.

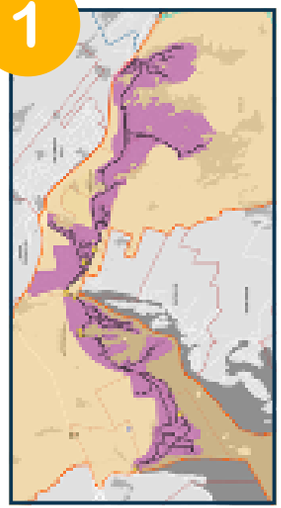
On that date, the municipality's Transportation & Public Works (TPW) department will be the new service provider for general and winter maintenance for the roads located in these areas.

Additionally, *per the April 13, 2022 approval from the Nova Scotia Utility and Review Board (NSUARB)* property owners in Areas 1 and 4 may also become stormwater customers of Halifax Water.

HALIFAX

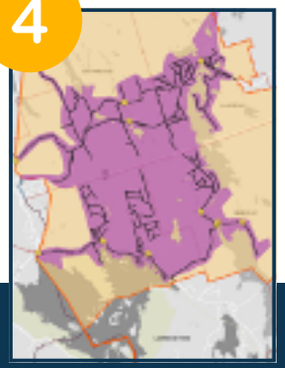
WHERE IS THIS HAPPENING?

1



The first area (**area 1**) includes roads within Boutiliers Point, Ingramport, Head of St Margarets Bay, Lewis Lake, Hubley and Upper Tantallon.

4



The second area (**area 4**) includes roads within East Preston, Lake Echo, Mineville, and the Western areas of Lawrencetown.

WHERE CAN I FIND MORE INFORMATION?

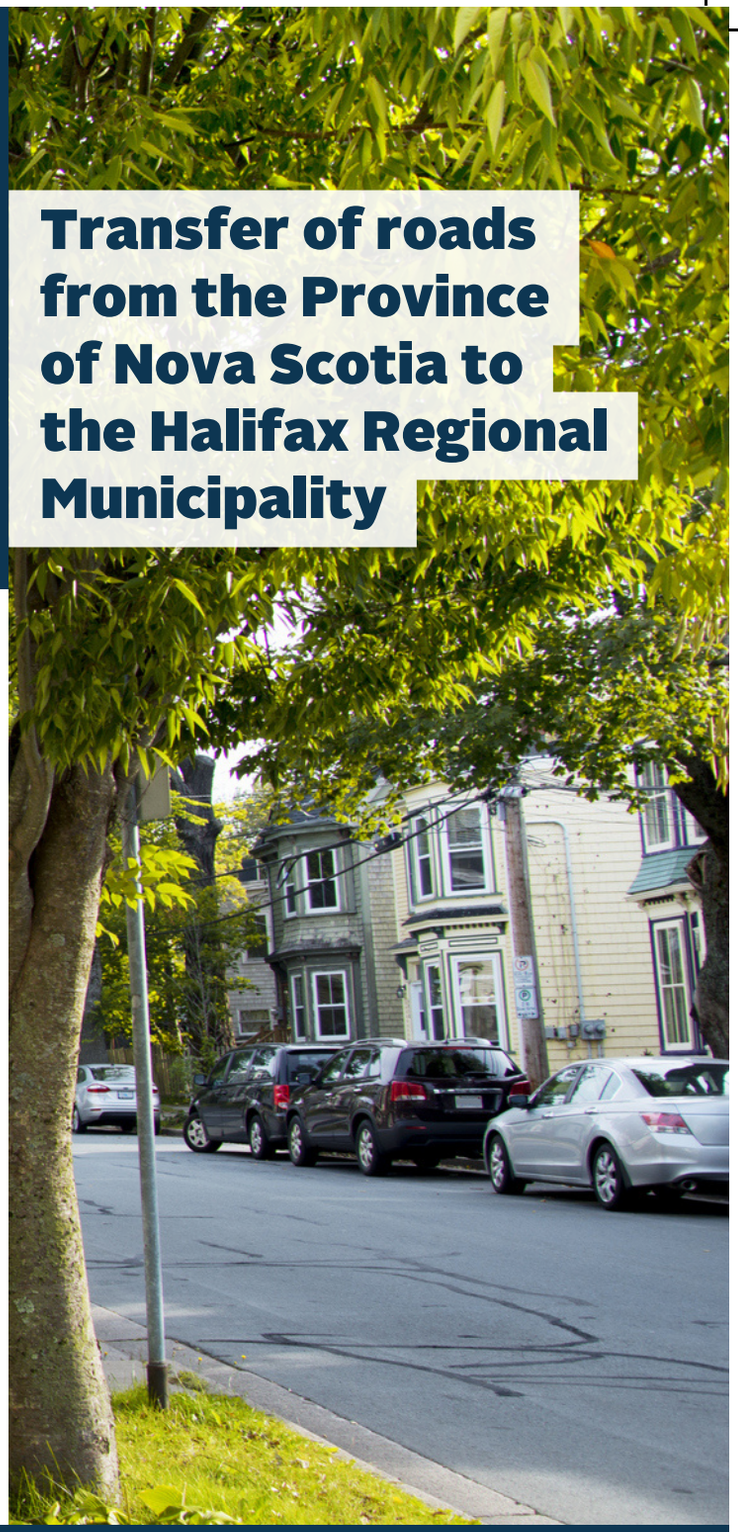
For further information, visit **halifax.ca/roadtransfer.**

For any municipal-related questions, residents may contact the Customer Contact Centre, by **calling 311** or emailing **contactus@311.halifax.ca**.

For any Halifax Water-related questions, residents may visit **halifaxwater.ca/stormwater-expansion** or contact the Halifax Water Customer Care Centre at **902.420.9287**.

For any provincial-related questions, residents may contact the Provincial Operation Contact Centre at **1.844.696.7737**.

Transfer of roads from the Province of Nova Scotia to the Halifax Regional Municipality



HALIFAX

WILL MY PROPERTY BE IMPACTED?

Use our interactive map at **halifax.ca/exploreHRM** to see which roads will be impacted and where the new service boundaries will be located.

WHY IS THIS HAPPENING?

A review of the municipal urban service boundary occurs periodically.

As part of this review, population densities are assessed and, together with other factors, a determination is made about transferring the responsibility for maintaining roads from the province to the municipality. Various arrangements between the province and the municipality, (including a road transfer document entitled HRM-01 which can found at **halifax.ca/HRM-01**) address the process of the transferring of roads.

As a result, the province will transfer to the municipality the responsibility for roadway maintenance, and related infrastructure, for the two areas.

WHAT WILL THIS COST?

The costs to operate, maintain and replace (as required) the additional roads and infrastructure will mean an increase to the average homeowner's 2022/23 tax bill of approximately $22, across the Halifax region.

The final tax bill of 2022/23 will be distributed on October 31, 2022.
For charges associated with stormwater system services provided by Halifax Water, each property is assessed individually. If a property is identified as contributing water to the stormwater system, the rate charged will be based on the amount of impervious area (hard surfaces such as asphalt, concrete, and packed gravel, etc.) on that property.

Halifax Water will notify all property owners whether or not they will become customers. New stormwater customers in these areas will not be billed by Halifax Water until early 2023. To learn more about the stormwater service expansions, billing, the types of fees and how they are calculated, visit **halifaxwater.ca/stormwater-expansion**.

WHAT SERVICES WILL BE PROVIDED?

The municipality's TPW department provides the following services for roads which are owned by the municipality:

- Winter operations (snow and ice control)
- Pothole maintenance
- Capital and maintenance projects (not including series 100 highways and ramps, which remain provincial)
- Reinstatement of shoulder gravel washouts
- Vegetation maintenance along the right-of-way
- Right-of-way forest management and emergency response
- Bridge inspections and repair
- 311 Customer Contact Centre
- Traffic signage and street lighting
- 24/7 services for accident cleanup, illegal dumping, receptacle collection for transit areas, and hazard mitigation