

HALTON-HAMILTON SOURCE PROTECTION REGION (HHSPR)

SPC Business Report #22-06-02 - Attachment 1

Analysis of the Technical Rules 2021 including Threat Circumstances under the Clean Water Act, 2006

May 27, 2022

IPZ: Intake Protection Zone; WHPA: Wellhead Protection Area; HVA: Highly Vulnerable Aquifer; ICA: Issue Contributing Area;

TDWT: Tables of Drinking Water Threats; SDWT = Significant risk of Drinking Water Threat

TABLE 1: TECHNICAL RULES 2021 AND HHSPR

Information from MECP				Halton-Hamilton Source Protection Region (HHSPR)
Topic (page # - 2021 trk PDF)	Goal of Change	2017 Technical Rules	2021 Technical Rules	Implication Analysis and Tasks
<p>PROCESSED ORGANIC WASTE (POW) Definitions: Managed Lands (page 3-4) POW (page 80): as defined in O. Reg. 347 (Environmental Protection Act)</p> <p>Circumstances: 1. Waste disposal: 1.2 Application of POW to Land (Page 90-92); 1.9 Storage of Processed Organic Waste or Waste Biomass (page 99-101)</p>	<p>Remove category 1 non-agricultural source material (NASM) such as: leaf and yard waste that is not composted. Focus on activities that pose the highest risk</p>	<p>“managed land” meant land to which agricultural source material, commercial fertilizer or non-agricultural source material is applied</p>	<p>“managed land” means land to which agricultural source material, commercial fertilizer, or non-agricultural source material, or processed organic waste is applied, excluding compost that meets the requirements for Categories “AA”, “A”, and “B” compost in Part II of the Compost Standards</p> <p>Note: POW is as defined in O. Reg. 347 (Environmental Protection Act) - <i>“processed organic waste” means waste that is predominantly organic in composition and has been treated by aerobic or anaerobic digestion, or other means of stabilization, and includes sewage residue from sewage works</i></p>	<ul style="list-style-type: none"> • Update definitions, maps and relevant sections in the Assessment Reports, Source Protection Plan and Explanatory Document. Policy implementer to confirm threats enumeration updates. • Processed organic waste (POW) previously under NASM threat, now under waste disposal threat: <ul style="list-style-type: none"> ○ SDWT in WHPA-A, B score 10 and WHPA-E score 9 & 8.1: potential implications for HHSPR WHPA (no implications for HHSPR IPZ due to their Vscores) ○ POW Storage: chemical circumstances tied to the amount of nitrogen; pathogen circumstances any amount tied to above/below grade ○ POW Application: chemical circumstances tied to managed lands % and livestock density NU/acre; pathogen circumstances any amount.

Information from MECP				Halton-Hamilton Source Protection Region (HHSR)
Topic (page # - 2021 trk PDF)	Goal of Change	2017 Technical Rules	2021 Technical Rules	Implication Analysis and Tasks
			<i>that are subject to the provisions of the Ontario Water Resources Act.</i>	
<p>SIGNIFICANT GROUNDWATER RECHARGE AREAS (SGRAs)</p> <p>Removal of vulnerability score, Rule 8 (1) (page 11)</p> <p>Removal of uncertainty analysis, Rule 13 (5) (page 15)</p> <p>Removal of map of percent managed lands in SGRA, Rule 16 (9) (page 19)</p> <p>No longer consider conditions in SGRAs, Rule 126 (page 73)</p>	SGRAs focus on water quantity only, not water quality.	Minor edits were made to remove references connecting SGRAs to water quality.	Minor edits made to remove all remaining references connecting SGRAs to water quality (some were missed in the 2017 rules).	<ul style="list-style-type: none"> The delineation of SGRAs is retained as a water quantity vulnerable area. During the Section 36 updates, edits were made to maps and text of the AR and SPP to ensure removal of vulnerability scores, uncertainty analysis, percent managed lands, conditions analysis associated with SGRAs.
<p>USE OF ALTERNATE METHODS OR APPROACHES (page 16)</p> <p>Rules 15.1 and 15.2</p>	Reduce administrative burden. Remove requirement to receive Director approval.	Director's approval was required in situations where the local authority wished to depart from the prescribed approaches in the rules.	SPC is to provide the alternate method with rationale and other details specified in the rule to MECP. Involve Ministry staff early in the development / selection stage of the work to provide advice.	<ul style="list-style-type: none"> Only applies to HHSR if the SPC decides to use an alternate method to any of the technical rules. As a best practice, HHSR will seek input from municipalities, SPC, and MECP, prior to inclusion of alternate methods into the ARs. HHSR is exploring different methods to estimate livestock density where farm lands abut high development areas, in lieu of using the OMAFRA tables for livestock density. MECP has clarified that this specific exploration does not trigger technical rules 15.1 and 15.2. HHSR will continue to engage municipalities, SPC, and MECP through explorations of methods.
<p>CLIMATE CONSIDERATIONS - WATER QUALITY (page 16)</p>	Consistent approach to climate change assessments relevant to	Information needed to conduct a climate change risk assessment	Technical Rule now specifies the information required (why specific climate data was used, approach,	<ul style="list-style-type: none"> MECP provided a guidance bulletin that elaborates on how to apply the rule and possible policy approaches. The data sets in the CO-led climate change vulnerability assessment

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Rule 15.3	source water quality	for water quality was not specified.	findings, impacts) for climate change impact assessment to be incorporated into the AR. MECP has confirmed that this assessment is optional and that SPAs can assist municipalities who undertake the work. There is no requirement that every municipality/SPA has to undertake the assessment. It is also not needed for each system. It is a cooperative work between SPAs and municipalities and sometimes climate change experts need to be looped in. The province will not recommend which assessment tools or data sets to use.	tool were recommended by several experts at universities, etc. <ul style="list-style-type: none"> HHSR has asked interested municipalities to contact HHSR. Neighbouring SPA/Rs will be engaged. Should this work be carried out, the assessment reports would be updated for the technical work (i.e. the climate change vulnerability assessment). The HHSPP might be updated for policies discussed at the SPC.
ISSUE CONTRIBUTING AREAS (ICAS) page 19-21: Rule 16 (9) (b) page 37-38: Rule 47 (7) & 48 (7) WHPA-ICA page 42: Rule 58 (5) IPZ-ICA page 47: Rule 78.1 IPZ-ICA page 71: Rule 115 (3)	Improve scientific approach Sep. 2020 SPC Chairs meeting slide deck: Benefit: Defensible science behind delineating the cumulative areas to ensure activities within these areas that may impact drinking water quality are appropriately captured.	ICAs (for source water quality) are not vulnerable areas. They are mapped within vulnerable areas -IPZs, WHPAs, HVAs. As well, the rules do not describe how to map areas within protection zones where activities are cumulatively impacting the quality of drinking	Introduces ICAs as stand alone vulnerable areas, named IPZ-ICA or WHPA-ICA. Removes WHPA-F. MECP has verbally clarified that there is no need to re-assess current ICAs - unless you want to. Managed lands, livestock density and impervious surface mapping is required where the drinking water issue identified for IPZ-ICA or WHPA-ICA is a contributing parameter of the drinking water	<ul style="list-style-type: none"> This change impacts HHSR <u>only</u> if identifying a new water quality Issue - then need to apply new rules. Chloride levels in the Campbellville system wells are being monitored by RMOH with six additional monitoring wells since 2019. An Issue is not identified at this time and could possibly in the future through discussions with RMOH. Part of the Cedarvale WHPA and chloride-ICA extend from CTC SPR into the Halton Region SPA of the HHSR. Per MECP, an existing ICA does not need to be re-assessed. There are no WHPA-Fs in HHSR.

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page 72: Rule 116 – removed.		water.	threats activities listed in subrule (9).	
<p>TOTAL IMPERVIOUS SURFACE AREA MAP Rule 16 (11) on page 20: For every HVA or each area of a WHPA and IPZ identified in clause 9 (b), one or more maps showing the percentage of impervious surface areas where road salt application in those areas is or would be a significant, moderate or low threat as determined in accordance with the TDWT. Where an area identified in clause 9 (b) has two or more vulnerability scores, the percentage of impervious surface area may be determined for each sub-area with the same vulnerability score. Each map prepared in accordance with this subrule shall be labelled the “total impervious surface area map”.</p>	Enhance accuracy of estimations, remove prescriptive method	<p>1X1 km grid centered on the centroid of each source protection area</p> <p>Definition: “total impervious surface area” in respect of subrule 16 (11) means the surface area of all highways and other impervious land surfaces used for vehicular traffic and parking, and all pedestrian paths;</p>	<p>The change made allows the calculation of percentages of imperviousness in a vulnerable area as a whole, or in a sub-area within the vulnerable area, where the road salt is applied.</p> <p>No change in definition of “total impervious surface area”</p>	<ul style="list-style-type: none"> • HHSR staff previously explored moving the centroid of the map from the source protection area to the centroid of each WHPA. It does not make much of a difference with the previous thresholds. • With the new method and lowered thresholds, calculations and maps need to be revised. Implications are anticipated. • Policy update discussions are being tracked with other program managers, including these draft concepts: <ul style="list-style-type: none"> ○ Use the map thresholds as a flag only to apply different policy approaches ○ E&O being discussed for smaller parking lot sizes and smaller size storage bins ○ Potential for stickers for storage bins similar to fuel tank stickers to raise awareness ○ Could include reminder to business/municipality owning the storage bin to “inspect” the bins regularly ○ Municipal asset management plans could include locations of bins, helping to ensure maintenance.

TABLE 2: TABLES OF DRINKING WATER THREATS (TDWT) THREAT CIRCUMSTANCES 2021

Information from MECP				Halton-Hamilton Source Protection Region (HHSPR)
Topic (page # - 2021 trk PDF)	Goal of Change	2017 Technical Rules	2021 Technical Rules	Implication Analysis and Tasks
12. Application of Road Salt Circumstances 12.1 (page 164-165)	Technical; Improve scientific approach to better identify areas where salt application and storage of road salt may impair source water	80% in WHPAs scored 10 and in WHPA-E scored 9; and 8% in IPZs scored 10.	The percentage impervious surface area thresholds for SDWT are lowered: >=30% for WHPAs score 10; 6% to less than 8% for IPZ & WHPA E score 10; >=8% for IPZ & WHPA E score 9-10.	<ul style="list-style-type: none"> • The impervious surface area mapping was updated for new development through recent S.36 updates. • The threshold lowering would impact the WHPA-A and B score 10 areas and Carlisle WHPA-E of score 9. • Where the SDWT areas overlap residential land use, there are no policy implications because the current policy approach exempts residential from Part IV policies. Certain other land uses may trigger RMP policies. • Threats enumeration by policy implementers. • No implications for HHSPR IPZ due to low V scores. • Policy approaches to be explored further: continue to exclude residential or not?
13. Handling and Storage of Road Salt Circumstances: 13.1, 13.2, 13.3 (page 166-169)	Same as above	Depending upon the exposure of stored road salt to precipitation, the quantity of storage of road salt that can be significant is 500 tonnes and greater in IPZ scored 10, and greater than 5,000 tonnes in WHPA scored 10 and WHPA-E scored 9.	13.1: Exposed to Precipitation or Runoff 13.2: Potentially Exposed to Precipitation or Runoff 13.3: Not Exposed to Precipitation or Runoff SDWT thresholds are lowered: 13.1.3: quantity stored is more than 20 kg (uncovered) in WHPAs score 10 and WHPA-E score 9-10. 13.2.3. Road salt stored in bin, box, tarp, container, 3-sided shed/dome; quantity stored is more than 100 kg in WHPA	<ul style="list-style-type: none"> • Impacts HHSPR. More SDWTs are anticipated in small areas of WHPAs for some non-residential uses. • Current HHSPR policy approach: residential uses are exempted from Part IV policies. We currently use RMPs for 5,000 tonnes or less. Land use planning prohibits storage facilities of >5,000 tonnes in WHPA and ICA. We've requested NEC to prohibit as well. • HHSPR policies would need to be revised for changed circumstances. Policy approaches would need to be discussed.

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			scored 10. 13.3: no SDWT.	

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HALTON-HAMILTON SOURCE PROTECTION REGION (HHSPR)

SPC Business Report #22-06-02 - Attachment 2

Impervious Surface Estimations: DRAFT Mapping for Carlisle Wellhead Protection Area (WHPA) – A, B, C, D and E

**Total Impervious Surface
 Methodology Exploration**

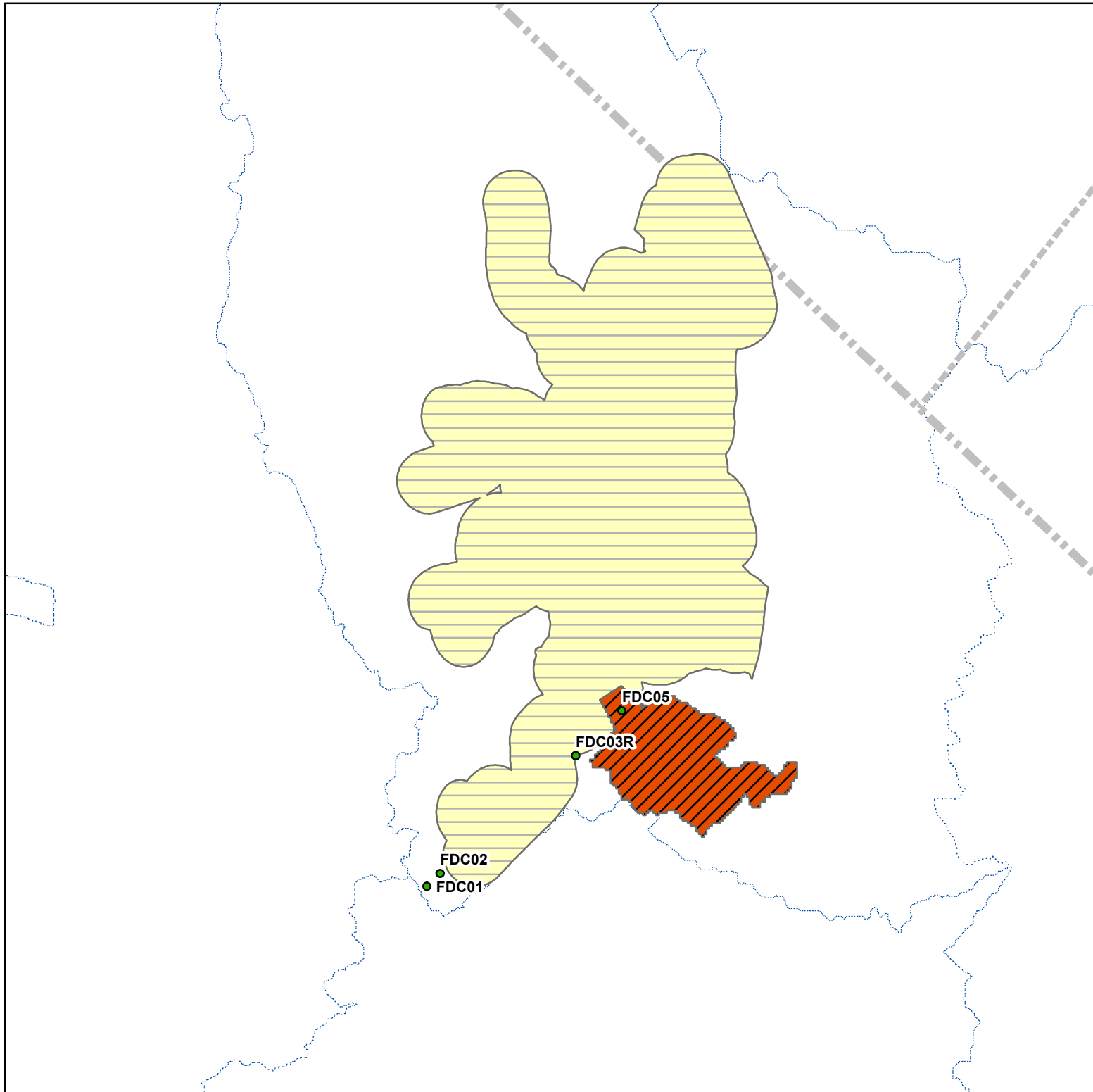
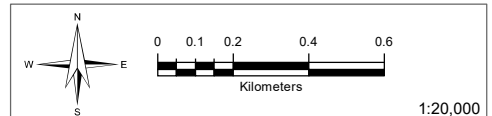
Legend

- Municipal Well
 - ▤ Upper Tier Municipality
 - ▥ Lower Tier Municipality
 - ▧ Upper Tier Municipality
 - ▨ Lower Tier Municipality
 - SPArea_NoShoreline
 - WatershedLakeLine
 - Source Protection Area
 - Watersheds
- Vulnerability Score
- 8.1
 - ▨ 9
- Percent Impervious
- < 1%
 - ▨ >=1% - < 8%
 - ▧ >= 8% - <30%
 - ▤ >= 30%

Impervious Surface Methodology Example:
 Percentage of impervious surface area for
 WHPA E = WHPA E impervious surfaces for
 Road Salt Application divided by the total area
 of WHPA E multiply by 100









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Date : June 2022



**Total Impervious Surface
 Methodology Exploration**





Legend

-  Municipal Well
-  Upper Tier Municipality
-  Lower Tier Municipality
-  SPArea_NoShoreline
-  WatershedLakeLine
-  Source Protection Area
-  Watersheds
-  Subwatersheds

Vulnerability Score

-  8
-  10

Percent Impervious

-  < 1%
-  >= 1% - < 8%
-  >= 8% - < 30%
-  >= 30%

Impervious Surface Methodology Example:
 Percentage of impervious surface area for
 WHPAA = WHPAA impervious surfaces for
 Road Salt Application divided by the total area
 of WHPAA multiply by 100

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Date : June 2022



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