

Appendix 2 - Data Gap Reporting

MISSISSIPPI-RIDEAU SPR WATERSHED CHARACTERIZATION REPORT

WC Report Section	Section/Map/Figure Number	Section Name	WC Deliverable	Data Set Name	Data Gap Problem	Status	Comment
I - WATERSHED DESCRIPTION							
1.1		Source Water Protection Region					
	Figure 1.1-1		Base Map				
				MVC Subwatershed boundaries	does not exist	resolved-interim	Current MVC subwatershed boundaries are based on an individual water structure basis, and require processing based on new provincial DEM to produce amalgamated subwatershed boundaries.
1.2		The Physical Description					
	Figure 1.2-4		Bedrock Geology				
				Bedrock Geology	out of date	resolved-interim	Current source is generalized geology from Renfrew regional groundwater study, which is amalgamation of OGS/MNDM data at varying scales. No seamless, consistent bedrock mapping exists.
				Fault Lines	spatially inaccurate	gap- high priority	Fault lines as rec'd from MNDM are clearly displaced from (some) of the corresponding bedrock geology formations in the region
	Figure 1.2-5		Bedrock Topography				
				Bedrock Thickness	does not exist	gap- high priority	To be developed. Source: NRCan 'Golden Spikes'(?)
	Figure 1.2-12		Surficial Geology				
				Surficial Geology - parts of Addington Highlands/North Frontenac	does not exist	gap- high priority	South-west section of the Mississippi watershed does not possess any surficial geology data
				Geological Structures	does not exist	gap- low priority	
	Figure 1.2-14		Soils	OMAF Soils Mapping - Lanark County & City of Ottawa	not populated	gap- high priority	Hard copy mapping for these areas has not been transcribed to digital form.
1.3		Hydrology					
	Section 1.3.1		Surface Water Hydrology				
				Stream Flow Gauges	too sparse	gap- high priority	The largest data gap is the lack of stream flow gauges representing the lower Mississippi River. There are no stream flow gauges on or near the outlet of the Mississippi River. The most downstream gauge is at Appleton, which is approximately 1/4 of the way up the River.
				Stream Flow Gauges	too sparse	gap- low priority	Stream flow gauges do not exist on many of the smaller watercourses within the M-R SPR.
	Section 1.3.2		Groundwater & Hydrogeology				
				MOE Water Well database	spatially inaccurate	gap- low priority	Static water levels in open" boreholes completed in bedrock represent a hydraulically diluted (average) water elevation (blended head) due to intersecting multiple fractures over depth of well.
				MOE Water Well database	spatially inaccurate	gap- low priority	Errors associated with static water level measurements in MOE records - each water level was recorded immediately following drilling and therefore may not have equilibrated. In addition, each reading was collected at various dates spanning decades.

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				MOE Water Well database	spatially inaccurate	resolved-interim	Locations of wells in database have varying levels of accuracy. Revised well records have improved accuracy of locations but caution needs to be taken with locations based upon well records.
				MOE Water Well database	too sparse	resolved-interim	Regional groundwater elevations are being interpolated over large areas where the data is sparse (i.e. western area in Addington Highland.
	Section 1.3.4		Climate				
				Climate Stations	too sparse	gap- high priority	There are no active climate stations located at the north end of the Mississippi Watershed. There are no active climate stations in the south end of the Rideau Region.
				Evaporation Data	too sparse	gap- high priority	There is also a lack of evaporation data in the west. The only stations with evaporation data are in the east.
	Figure 1.3-4		Depth to Shallow Water Table				
				Shallow water table elevation	spatially inaccurate	resolved-interim	Current surface derived from RGWS ground & potentiometric surfaces. Methodology used to arrive at these surfaces is not adequately documented. Recalculation is required from updated Water Well data and ground surface elevations.
	Figure 1.3-5		Depth to Deep Water Table				
				Deep water table elevation	spatially inaccurate	resolved-interim	Current surface derived from RGWS ground & potentiometric surfaces. Methodology used to arrive at these surfaces is not adequately documented. Recalculation is required from updated Water Well data and ground surface elevations.
	Figure 1.3-6		Potential Recharge / Discharge Areas				
				Baseflow	does not exist	gap- high priority	Baseflow measurements have not historically been completed by either the RVCA or the MVC.
				Recharge / Discharge Areas	spatially inaccurate	resolved-interim	Similarly, the source of error associated with determining groundwater elevations for both shallow and deep aquifers using these methods is carried through into the delineation of potential recharge and discharge features.
				Recharge / Discharge Areas	does not exist	gap- high priority	Significant groundwater recharge areas have not been defined for the M-R SPR. This is to be defined as part of the Tier 1 Water Budget work.
1.4		Naturally Vegetated Areas					
	Figure 1.4-1		Wetlands				
				Evaluated Wetlands	partially populated	gap- low priority	The substantive wetland coverage is found in the Middle and Upper Rideau and Western and Central Mississippi regions, many of which have never been evaluated using the OWES.
	Figure 1.4-2		Woodlands & Riparian Areas				
				Riparian Zones	does not exist	gap- high priority	Some riparian classification has been completed for the RVCA. No riparian classification has been completed for the majority of the M-R SPR.
1.5		Aquatic Ecology					

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	Figure 1.5-1		Aquatic Macroinvertebrates				
				Surface Water Recharge Areas (cold	partially populated	resolved-interim	Potential groundwater recharge/discharge areas were identified in the Regional Groundwater Study, but the methodology needs investigation.
				Diversity of Macroinvertebrate species	does not exist	gap- low priority	The RVCA and MVC CAs participate in the provincial OBBN program, but no further analysis is performed to correlate species presence to water quality.
1.6		Human Characterization					
	Section 1.6.1		Population Distribution & Density				
				Population of development areas	does not exist	resolved-interim	Populations of many development areas are not recorded. Estimated populations were calculated based on development area boundaries.
				Seasonal Population	does not exist	gap- low priority	Population of seasonal residents unknown. Some municipalities experience large influxes of summer residents.
	Section 1.6.2 & Figure 1.6-3		Future Land Use				
				Zoning - Municipal OP	does not exist	gap- high	Data requests pending for some municipalities.
				Zoning - Municipal OP	does not exist	gap- high priority	Common zoning and official plan classifications do not exist between the different municipalities.
	Figure 1.6-5		Brownfields				
				Historical Land Use		gap- high priority	HLUI database (City of Ottawa) data request pending. Historical land use for rest of region has not been undertaken.
1.7		Water Uses					
	Section 1.7.1		Private Groundwater				
				Population on private wells	does not exist	resolved-interim	Population of region on private wells is unknown. Population on private wells estimated based on using total population and known population supplied by municipal water.
	Section 1.7.5		Industrial Commercial Water Use				
				PTTW database	spatially inaccurate	resolved-interim	Current water takings are for total maximum volumes of water takings which are not necessarily accurate to the actual volume of water taken. Current water takers are required to submit actual volumes of water used. Future generations of the PTTW database should have actual water taking volumes.
				PTTW database	partially populated	gap- low priority	The permits that are noted above include all that are current. Permits that have expired have been excluded from analysis.
II - WATER QUALITY							
2.1		Water Quality					
	Section 2.2		SW Quality Monitoring Network				
				MVC Surface Water Quality monitoring	does not exist	gap- low priority	The MVC does not currently do any surface water quality monitoring on the streams and rivers outside of the Provincial Water Quality Monitoring Network sites.
				MVC Surface Water Quality monitoring	does not exist	gap- high priority	Bacterial sampling is not conducted upstream of Carleton Place in MVC - significant data gap.

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				Surface Water Quality Monitoring	does not exist	gap- high priority	Surface water monitoring stations upstream of drinking water intakes (Britannia, Lemieux Island, Perth, Smiths Falls & Carleton Place) should be added to the monitoring programs.
				Provincial Water Quality Monitoring Network	too sparse	gap- high priority	Additional PWQMN sites should be added on the Ottawa River.
				All SW monitoring programs	does not exist	gap- high priority	Additional microbial parameters should be sampled and tested as part of the various water quality programs (cryptosporidium, giardia, microcystins, etc.).
	Section 2.3		Groundwater Quality Monitoring Network	All SW monitoring	partially	gap- low	Inconsistent suites of parameters at various locations.
				Ambient Groundwater Quality - subdivision hydroG reports	not populated	gap- high priority	CA subdivision approval process records GW quality information, from subdivision water reports. Not recorded, however, is the MOE water well ID, as listed in the Water Well Record Database. There is no reliable correlation between the two sets of information. Significant analysis/data re-entry required to link the two.
				All GW monitoring	too sparse	gap- low	Lack of data within western, central and southern portions of region.
				All GW monitoring programs	partially populated	gap- low priority	Much of the groundwater quality data is in paper format, therefore it was not included in this initial interpretation. Significant data processing time required to interpret additional information.
				All GW monitoring programs	spatially inaccurate	resolved-interim	Many groundwater sampling locations are described by lot and concession or by municipal address and do not have UTM coordinates.
				All GW monitoring programs	too sparse	gap- low priority	Lack of geological information into which the well is completed makes it difficult to characterize aquifers.
				All GW monitoring	too sparse	gap- low	Lack of temporal groundwater quality information.
				All GW monitoring programs	partially populated	gap- low priority	The subdivision and quarry report database only contains information for RVCA.
				All GW monitoring	partially	gap- low	Inconsistent suites of parameters at various locations.
III - DESCRIPTION OF VULNERABLE AREAS							
3.2		Groundwater: WHPAs					
	Section 3.2		Merrickville WHPA Inset				
				Merrickville WHPA	does not exist	gap- high priority	Golder Associates is contracted by M-R SPR to complete the WHPA technical study for the Merrickville system
			North Grenville - Kemptville WHPA Inset				
				Kemptville WHPA	does not exist	gap- high priority	Golder Associates is contracted by M-R SPR to complete the WHPA technical study for the North Grenville system
	Section 3.2 & Figure 3.2-5		Westport WHPA Inset				
				Westport WHPA	partially populated	gap- high priority	The existing WHPA study, completed by Malroz Engineering, is preliminary. Malroz is contracted by the Village of Westport to complete the WHPA technical study for the Westport system.
3.3		Surface Water - IPZs					
	Section 3.3		Municipal Intake Protection Zones				

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				Perth SW Supply IPZ	does not exist	gap- high priority	M-R SPR has funding for this work from the MOE. Phase I of the technical work was completed by the RVCA. Phase II of the technical work is being conducted by JF Sabourin & Associates for the Perth system.
				Smiths Falls SW Supply IPZ	does not exist	gap- high priority	M-R SPR has funding for this work from the MOE. Phase I of the technical work was completed by the RVCA. Phase II of the technical work is being conducted by JF Sabourin & Associates for the Smiths Falls system.
				Carleton Place SW Supply IPZ	does not exist	gap- high priority	M-R SPR has funding for this work from the MOE. Phase I of the technical work was completed by the MVCA. Phase II of the technical work is being conducted by JF Sabourin & Associates for the Carleton Place system.
				Ottawa SW Supply IPZ	does not exist	gap- high priority	The City of Ottawa has funding for this work from the MOE. Technical work is being conducted by Baird for both the Britannia and Lemieux Island systems.
3.4		Other Vulnerable Areas					
	Section 3.5		Future Sources of Drinking Water				
				Groundwater Use	does not exist	gap- low priority	Municipal groundwater supply wells are proposed for the Village of Lanark.
IV - EXISTING THREATS INVENTORIES							
4.2		Threats to GW Quality					
	Figure 4.2-7		Regional Threats				
				Regional Threats	partially populated	resolved-interim	Several databases reviewed as part of the regional groundwater study were not geo-coded and were not included in the figures. Significant data processing is required.
				All Threats Inventories	partially populated	gap- low priority	Inconsistencies in the various data sources used to generate the threats inventories.
				All Threats Inventories	partially populated	gap- low priority	Many of the databases contain references to the same properties that need to be cross referenced to remove duplicate entries
				City of Ottawa HLUI database	not populated	gap- high priority	City of Ottawa has completed a historic inventory of land use, identifying <i>potential</i> threat sources. Data request is underway, privacy issues exist.
V - SUMMARY OF IDENTIFIED ISSUES & CONCERNS							

Notes: Data Gap Problem must be one of the following choices: does not exist, not populated, partially