

2019 Update: Red Hill Valley Project Integrated Environmental Monitoring Plan Final Report Recommendations (2015)					
Red Hill Valley Project (RHVP) Integrated Environmental Monitoring Plan (IMP) Final Report Recommendations (2015)		Lead Division/ Name/Out of Scope	To be Implemented Yes/No/TBD	Comments from: (HW) Hamilton Water, (AQ/CC) Air Quality & Climate Change, (HCA) Hamilton Conservation Authority	Estimated Cost
Ground Water					
1	Existing groundwater monitoring wells should be left in place for any future more regional monitoring program. The Hamilton Conservation Authority (HCA) or other governmental agencies should be contacted to confirm whether they would be interested in taking over the monitoring of these wells, potentially as part of the Ontario Groundwater Monitoring Network.	Hamilton Water/Source Water Protection	Yes	The groundwater monitoring program relied on two nested wells drilled in two key locations along the Red Hill Creek. Each well has three cases screened at different depths which allows monitoring of shallow and deep groundwater levels. City of Hamilton, Hamilton Water already maintains a network of monitoring wells within the City and plans to include these locations as part of this network. The wells require further assessment to identify the costs for the necessary up-grades. The data collected from the wells monitoring network is being shared with the Conservation Authorities.	TBD
Surface Water					
4	The City of Hamilton and the Ministry of Transportation (MTO) may wish to undertake a climate change assessment, to better understand the potential vulnerabilities along the RHVP, and develop appropriate resiliency plans.	Healthy and Safe Communities/Air Quality & Climate Change	Yes	Climate adaptation is a priority of the Corporate Climate Change Task Force (CCCTF) which will be submitting additional work plans through the General Issues Committee (GIC) 2019 to work on a city-wide climate vulnerability and risk assessment. Currently, specific costs associated with this work are unavailable but will be included in future reports.	TBD
Water Quality					
H3	Testing for pharmaceuticals in the surface water, downstream of Municipal sewer overflows is recommended. Pharmaceuticals can negatively effecting fish and aquatic life.	Out of Scope	No	Out of scope for the City of Hamilton. This recommendation will be forwarded to agencies for their consideration.	N/A

Creek Morphology					
12	The ongoing erosion and sediment contribution upstream of the Buttermilk Falls tributary should be addressed in order to maintain downstream channel stability within Red Hill Creek. The rehabilitated channel reach was never designed to handle/receive the bed material load that is currently being generated by the upstream reach destabilized in the July 2009 flood. Measures should be taken to mitigate erosion in this reach and provide enhanced geotechnical slope stability.	Out of Scope	No	Out of Scope for the City of Hamilton.	N/A
Fisheries					
13	The City of Hamilton, and affected regulatory agencies (Hamilton Conservation Authority, Ministry of Natural Resources and Forestry, Department of Fisheries and Oceans, Royal Botanical Gardens, Bay Area Restoration Council) may wish to consider transplanting suitable native stream fishes from other area watercourses, if a more diverse fish community in Red Hill Creek is desired. Further discussion would however be required on this subject.	Out of Scope	No	Out of scope for the City of Hamilton. This recommendation will be forwarded to agencies for their consideration.	N/A

14	The City of Hamilton and affected regulatory agencies should consider implementing carp control within the lower reaches of Red Hill Creek (as has been done in Windemere Basin). Key opportunities for carp exclusion exist in compensation wetlands Comp1 and Comp2, as well as new backwater channels created within ENH5 (Red Hill Marsh), and the north Van Wagner's Pond along with connecting waterways. Further discussion would again be required on this subject .	Out of Scope	No	Out of scope for the City of Hamilton. This recommendation will be forwarded to agencies for their consideration.	N/A
15	Benthic invertebrate sampling should be considered in the future, potentially within the next 5 years +/-, in order to assess potentially positive impacts of the Red Hill Valley Storage Pipe. This feature, which should reduce the number of combined sewer overflow discharges to Red Hill Creek, did not begin operating until December 2011; as such the monitoring data (ending in 2012) would not reflect the benefit of implementing this feature.	Out of Scope	No	Out of Scope for the City of Hamilton, however, HCA does limited work of both fish and benthic sampling in the Red Hill as part of a watershed monitoring program. A partnership could be coordinated to enhance this program to address the recommendation with support funding.	Should a funding source become available, an approximate estimate of \$15,000 /year would allow for monitoring of 4 sites (\$900/day and 4 days / site - 1 indicator site, 1 upstream, 2 downstream)

Terrestrial Ecology					
18	It is recommended that the City of Hamilton undertake additional monitoring of the wetland enhancement areas (ENH5), given that only 2 years of data have been collected thus far	Out of Scope	No	HCA can undertake all Terrestrial Ecology recommendations. (#18,19,20,H6) that are out of scope for the City of Hamilton, and support the ongoing City of Hamilton in scope terrestrial recommendations (16, 17, and 21)	Should a funding source become available,an approximate estimate of \$80,000 annually to fulfill recommendations 18, 19, 20, H6 and to support 16, 17, 21 (staff time, administration, equipment)
19	It is recommended that turtle population status within the Red Hill Marsh and Van Wagner's Ponds, as well as habitat enhancement areas, be updated	Out of Scope	No	* See note in #18	See funding note in recommendation 18
20	The City of Hamilton should consider undertaking repeat monitoring of permanent vegetation plots within the valley.	Out of Scope	No	* See note in #18	See funding note in recommendation 18
22	The City of Hamilton should consider completing a separate stand-alone report to summarize and address the full scope of the restoration works undertaken by Kayanase	Out of Scope	No	Out of scope for the City of Hamilton.	N/A
H1	A follow-up Haudenosaunee Medicinal Plant survey is recommended.	Out of Scope	No	Out of Scope for the City of Hamilton.	N/A
H5	Request a copy of the proposed Kayanase restoration work report when completed.	Out of Scope	No	Out of Scope for the City of Hamilton.	N/A

H6	If not already considered, a study of the entomological world (Insects) in the affected valley areas should be undertaken.	Out of Scope	No	* See note in #18	See funding note in recommendation 18
H7	All the recommendations presented in the 5- Year 2015 Summary report should be approved and implemented, as listed in Appendix A: Summary of Recommendations supported by Haudenosaunee.		No	This item cannot be completed until all recommendations are funded and actioned.	N/A