

Upper Thames River SPA
Draft Proposed Assessment Report
Summary of comments

Generic Description of Commenter	No.	Comment	Response	Status
CA Staff	1	In the Systems Summaries under Threats and Risk Assessment, I noticed the format for Table 2: number of locations where significant threats would occur is different for the Oxford systems. The Oxford table's include the system name (which was helpful), and the vulnerability scores. The Middlesex and Perth tables don't have the system name nor vulnerability scores but do include the type of threat (chemical, pathogen DNAPLS).	System summary information obtained from Oxford in a form that is consistent with other system summaries.	DONE
CA Staff	2	2 areas we may want to change are changing the font color for main headings Appendix 2 and Appendix 3 - the links do not start until after this title. Also List of maps in sections are not linked as in the St. Clair report.	Will consider different ways of showing the linked text when creating the new CD.	
CA Staff	3	Map 3-4, Colour range for legend category 450 to 500. Very light pink to the point that some monitors don't show, Map 7-1-14, Contents show Mount Elgin but map is Mt Elgin – either needs to be consistent or a period after Mt, Map 7-2-14, Same as Above, Map 7-3-21, Same as above except St Marys	Adjust color scheme in Map 4-3. Map 7-1-14 title to be changed to 'Mount Elgin' not 'Mt Elgin', and same for list of maps. Also make sure 'St. Marys' is used not 'St Marys'.	DONE
Town of St. Marys Staff	4	Map in the System summary for St Marys has a Beachville label in the activities related to chemical map.	Correct the map label	DONE
CA Staff	5	A calculation error was observed in the managed lands of Woodstock rural WHPA-C. Update the managed lands mapping for this system. The change in calculation affects the map, but not the threats counts. There were no additional significant threats therefore no additional letters needed to be sent.	Update the Woodstock rural wells managed lands map	DONE
CA Staff	6	Include maps on Percent Impervious, Managed Land and Livestock Density for HVA and SGRA	Create and include these maps in the proposed AR	DONE
CA Staff	7	Need to remove the "O. Reg. 385/08, s. 3." reference from all significant threats tables		DONE
CA Staff	8	The Vulnerability Score for Shakespeare was revised between the time the Impervious Surfaces, Managed Lands and Livestock Density maps were started and when the Draft Proposed Assessment Report was posted. This change was not caught before posting. These maps will be updated to reflect the revised Vulnerability Scores. This change removed the need to map a portion of the WHPA-C. It did not alter the Impervious Surface mapping, nor the Managed Land and Livestock Density categories in the WHPA-A and B. Consequently, this change is not anticipated to alter the significant threat counts.	Due to the change in the Shakespeare WHPA vulnerability layer after creating the Percent Impervious, Managed Land and Livestock Density mapping, these maps will have to be revised.	DONE

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CA Staff	9	The Impervious Surface mapping for Oxford County had one inconsistency when compared to Middlesex and Perth. Oxford County did not include private driveways in the calculations whereas the other 2 counties did. This was noted on the maps themselves but not in the report text. The maps for Oxford will be revised to match the methodology applied to the systems in Middlesex and Perth. Revisions to the report text should not be required. This is not anticipated to alter the significant threat counts.	Impervious surface mapping for all Oxford systems to be revised	DONE
CA Staff	10	Some of the Managed Land maps for Oxford County in the Draft Proposed Assessment Report differ from those submitted by the County in their Technical Reports. Upon review of the differences, it was noted that under most circumstances, the differences were a matter of interpretation of which lands were managed. The pAR managed lands mapping for Oxford County should be revised to be consistent with Oxford's technical report mapping.	Managed Lands mapping for Oxford systems (where differences in interpretation are observed) to be revised	DONE
CA Staff	11	It was identified that the livestock density lands dpAR mapping was not consistent in some areas with that submitted by Oxford. This is largely attributed to the windshield survey undertaken by Oxford in developing the mapping. The pAR livestock density mapping for Oxford County should be revised to be consistent with Oxford's technical report mapping.	Livestock Density mapping for Oxford systems (where differences in interpretation are observed) and methodology text in section 7 to be revised	DONE
Proofreader	12	Editorial corrections to be made to sections	Make editorial corrections	DONE
Proofreader	13	Editorial corrections to be made to section summaries 1,2,3,4,5,7,8	Make editorial corrections	DONE
Proofreader	14	Editorial corrections to be made to system summaries	Make editorial corrections	DONE
CA Staff	15	The header in the appendices report needs to be corrected - the "s" is missing from "Thames."	Make editorial corrections	DONE
Proofreader	16	Editorial corrections to be made to maps	Make editorial corrections	DONE
CA Staff	17	We need to replace the label 'Zorra-Tavistock' with 'East Zorra-Tavistock' on the AR maps.	Make editorial corrections	DONE
CA Staff	18	On pg 2 of the section summary 1 under the discussion of the CWA at the bottom of left hand column, it says that the regulations have not yet been introduced. They have now been introduced. In the Glossary, the following links are worth checking as they either didn't link, were to a French site, or didn't seem to give explanation to the glossary term: AOC, DNAPLS, LaMP, PCBs.	Revise last paragraph on page 2 of section summary 1 to read: "Recently, the province has amended O. Reg. 287/07 by providing requirements for the preparation and implementation of source protection plans". Links repaired in glossary.	DONE

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CA Staff	19	When viewing Melrose WHPA-A map 4-1-6 I noticed that the WHPA-A was round when looking at the map. When looking at the wells there is a separation between them (about 15 metres). Since this is the case the WHPA-A should be slightly oblong. Same applies to the Kilworth-Komoka system.	Make correction in Melrose and Kilworth-Komoka maps (vulnerability, threats, livestock density, managed lands, impervious)	DONE
CA Staff	20	In Section 9, grammatical change on last paragraph, line six should read "the Director in the approval" versus "it's".	Make editorial corrections	DONE
CA Staff	21	Delete 'believed to be' replace with 'is' or 'are' in Flagged Parameters appendix	Make editorial corrections	DONE
CA Staff	22	In the Flagged Parameters appendix, Thorndale well ecoli found to be caused by a transport pathway: Amount of verbiage on this to be reduced and will add references to the discussions with operators since technical report. Page 9-2 table lists iron is titled Komoka wells in first column and shows Birr on second column, needs to be changed.	Make editorial corrections	DONE
CA Staff	23	The Thorndale WHPA-A needs to be corrected to be a 100 m circle rather than the 200 m circle. The vulnerability, threats, livestock density, managed lands and impervious layer mapping will need to be revised. The threats counts are not affected since the consultant did the threats analysis based on a correct WHPA-A.	Make correction in Thorndale maps (vulnerability, threats, livestock density, managed lands, impervious)	DONE
CA Staff	24	Chris had Ryan create table of contents for the draft CD versions of the system and section summaries, and inserted page numbers in the pdf files for those two appendices. We should do the same for the printed versions (and the CD's again).	Add table of contents to system and section summaries in the InDesign files. Add page numbers (1 of XX) to the Acrobat files once fully assembled.	
CA Staff	25	Since there was the potential for overlapping WHPAs from different Systems, the impervious surface calculations were performed on a System basis. Associated with each grid cell on the map are separately stored values of every system. The largest value of percent impervious was supposed to be copied into another field for display on a unified map. However, Stratford and St Marys were completed after the decision to use individual WHPA maps rather than a unified map. Consequently, that field was not updated. However, the map templates were still displaying that field. As a result, Stratford and St Marys maps included in the assessment report were displaying the values from before the Stratford and St Marys updates.	Revise Stratford and St. Marys impervious surfaces maps	DONE

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CA Staff	26	<p>As a result of comments received from the peer reviewers staff presented alternative representations of the SGRA to peer reviewers for their input. The peer reviewers supported a revised SGRA product which removed the area identified as fluvial deposits from those which were previously proposed as the SGRA. It is important to note that this results in an overall reduction in the area identified as SGRA and does not add any areas not previously included in the SGRA. It is recommended that the Assessment Report be revised to be consistent with the SGRA mapping accepted by the peer reviewers which will be included in this final T2WB report.</p> <p>Also at the recent peer review meeting the peer reviewers accepted that the groundwater and surface water model calibration in the Middle Thames was adequate for the stress calculations in the T2WB. Although this does not require a change in the results from the work, references in the Assessment Report to the Middle Thames calibration should be revised to reflect the additional calibration work.</p>	<p>revise SGRA mapping to reflect the peer review accepted T2WB work. Revise description of the calibration of the Middle Thames to reflect the additional analysis of the calibration of this subwatershed.</p>	DONE
CA Staff	27	<p>On the Impervious Surfaces and Managed Lands / Livestock Density mapping that the outlines on the maps were inconsistent. In some cases the outlines were the WHPAs clipped to Vulnerability ≥ 6 and in some cases it was the Vulnerability Layer clipped to Vulnerability ≥ 6. Since the calculations were performed on a WHPA basis, I think it more appropriate to use the WHPA outlines. Therefore, all maps were made consistent by using the WHPA outlines.</p>	<p>Revise all impervious, managed lands and livestock density maps so that the outlines are to the WHPA with vulnerability score greater than 6.</p>	DONE
MOE	28	<p>On page 5-9, Section 5.4 Issues Evaluation Technical Studies, the second sentence refers to 23 well supply systems. This appears to be a typo based on the number of systems described in other chapters and should be changed to 22. It is recommended to be consistent in the AR.</p>	<p>Sentence revised.</p>	DONE
MOE	29	<p>On page 6-2, top of page reference to Map 4-1 should be 4-1-1 through 4-1-23.</p>	<p>Sentence revised.</p>	DONE
MOE	30	<p>References to "<i>Golder and Associates</i>" should read "Golder Associates"</p>	<p>Reference revised</p>	DONE
MOE	31	<p>On page 4-8, 4.3.2 WHPA-A: The last line should read "4-1-1 to 4-1-22".</p>	<p>Sentence revised.</p>	DONE
MOE	32	<p>All maps must clearly show the municipal wells, well numbers, and well field names so that reference to the text of the report is clear.</p>	<p>Maps are edited to show well numbers and well field names on the groundwater vulnerability frames in Maps 4-1-1 to 4-1-23 because these frames show well locations.</p>	DONE
MOE	33	<p>Municipal wells must be clearly shown on a map. The Tavistock, Thamesford and Woodstock wells can not be distinguished from each other on the maps</p>	<p>Maps edited by decreasing well symbol size, to help differentiate between wells.</p>	DONE

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MOE	34	Map 4-1-11 Ingersoll: The adjusted groundwater vulnerability discussed in the text is not reflected on the map.	Transport pathway adjustment is now shown on map. Text is revised to indicate the correct vulnerability category adjustment.	DONE
MOE	35	Map 4-1-17 Woodstock: The adjusted groundwater vulnerability discussed in the text is not reflected on the map. Only two of three are currently identified.	Transport pathway adjustment is now shown on map. Text is revised to indicate the correct vulnerability category adjustment.	DONE
MOE	36	Map 4-1-19 Sebringville: The report indicates that no transport pathways have been identified, but one is shown on the map. This inconsistency should be corrected.	Map is correct. Text is revised.	DONE
MOE	37	4-1-21 St. Marys: The legend for transport pathways is unclear where it states "Increased on Level". Any change in the groundwater vulnerability based on a transport pathway (at least 25 are shown) must be documented and explained in the text (only 3 are discussed).	Transport pathway adjustment is now shown on map. Text is revised to indicate the correct vulnerability category adjustment.	DONE
MOE	38	Watershed Characterization Maps: These maps are shown at a scale that includes the entire Source Protection Region, which reduces the visibility of the subject Source Protection Area. (e.g. Maps 3, 18 and all others at this scale). Ensure that the maps meet the requirements in technical rule 12 for sizing as much as possible.	WCR was completed for the entire Thames watershed, and scale reflects that.	No change.
MOE	39	On page 2-27, Table 2-4 includes the Lake Huron Primary Water Supply System and the Elgin Area Water Supply System as being systems "serving the Upper Thames River SPA, however, the footnotes indicate that both systems are located outside the Upper Thames River SPA. It is not clear why these systems were included in the table. If they do serve some of the population, then the details should be included.	Footnote to the table is revised to indicate that the systems serve the UTRSPA. Text below table still indicates that areas within the UTRSPA are served by these systems.	DONE
MOE	40	The AR indicates that this work will be complete in time to include in the proposed AR. The draft proposed AR can only be changed to address comments received in the consultation period. No new information can be added to the proposed AR without an appropriate level of consultation. If new information is to be added to the proposed AR that is not based on comments received in on the draft proposed AR then the SPC should ensure the public and those impacted by the changes have an additional level of consultation so that they are afforded ample opportunity to review the new information. For example the SPC may want to notified those impacted by the new information as they would have been for the draft proposed AR consultation period.	Duplicate of comment 54. Text revised to indicate that this work has not been completed. Therefore this work will be included in an amended AR. Work is noted as a data gap in Section 3.6 and in Section 9.	DONE
MOE	41	The statement that indicates the results of the Tier 3 are contingent upon availability of data and funding should be removed. The comments on funding are irrelevant.	Text revised in section 3.4.1. General Note in section 9 left in place.	DONE

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MOE	42	On page 2-29, Table 2-5 (Watershed Characterization Data Gaps) under the heading Water Quality, there is an entry titled Municipal groundwater well physical and chemical data. The physical data is not a data gap as it should be in the First Engineer's Reports.	Text revised to indicate that long term data was not available.	DONE
MOE	43	Section 2.0 Watershed Characterization 1a) Page 2-4 Geography, Physiography and Soil Types: "...over which lies the overburden rock formation." A point of clarification, overburden is not a rock formation. 1b) Page 2-5 Topography, Hydrology and Hydrogeology: This section does not provide enough information on these areas given the SPA relies almost solely on groundwater. There should be documentation on the aquifers, water tables and pertinent groundwater flows, regionally and locally for the SPA. 1c) Page 2-20 Municipal Groundwater System Water Quality: This section should clearly reference the standards to which the water quality is being compared (e.g. O. Reg. 169, O. Reg. 170, etc.).	Text to be revised.	DONE
MOE	44	Section 4.3.5 Vulnerability Assessment of the WHPA: Where appropriate and beneficial, text in this section relevant to specific wells and/or well fields should reference the appropriate Map, specifically when discussing WHPA delineation and vulnerability scoring	Map references added.	DONE
MOE	45	Wells should be numbered on the WHPA maps so that references in the text can be related to the map.	Maps are edited to show well numbers and well field names on the groundwater vulnerability frames in Maps 4-1-1 to 4-1-23 because these frames show well locations.	DONE
MOE	46	Where adjustments are made to the groundwater vulnerability within WHPAs, the AR should document the initial and final vulnerability ranking (e.g. from low to medium) and the final groundwater vulnerability should be clearly shown on the associated map.	Text and maps revised	DONE
MOE	47	For Woodstock, on page 4-20, the third bullet is unclear. The bullet references well 9+, which is not defined, and suggests that smoothing of contacts between areas of different vulnerability is related to transport pathways. First, what is the connection between an adjustment related to transport pathways and smoothing of lines. Second, what is the justification for smoothing out the vulnerability lines. The comment professional judgement requires that the AR explain the factors considered in making this judgement.	Text revised. Sentence on transport pathway in Well 9 WHPA is separated from the vulnerability smoothing sentence, as they are not related. Additional clarification in professional judgement on contact smoothing is provided in Section 4.3.5.	DONE
MOE	48	Page 4-21: Justification should be provided for the selection of a 50 metre buffer around wells as transport pathways.	Justification is already provided: 50 m buffer is half of the WHPA-A 100 m radius around a wellhead.	No change.

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MOE	49	Page 4-22: The text for the St. Marys water supply discusses the presence of thee (3) private wells within WHPA-B and that the groundwater vulnerability has been increased based on the presence of these wells. However, the related map shows at least 19 wells in WHPA-B and 3 three wells in each of WHPAs C and D. This inconsistency should be corrected and the justification provided for a 50 m buffer around the wells as transport pathways.	Text revised to describe transport pathways	DONE
MOE	50	Page 4-22: The text for Sebringville indicates that transport pathway features have not yet been located and are not included. However, map 4-1-19 shows an area of increased vulnerability. This inconsistency should be corrected.	Map is correct. Text is revised.	DONE
MOE	51	Page 4-23: For Stratford, a number of private wells are identified as transport pathways resulting in an increase in the groundwater vulnerability. The justification for the increase should be provided. Given there is a municipal monitoring well nearby, a clarification as to why there was no increase associated with that well is recommended.	Text revised. Joe Salter provided info that the municipal monitoring well is inspected weekly as per PTTW. Monitoring well is not considered a transport pathway.	DONE
MOE	52	Page 4-25: ..."the vulnerability scoring of these vulnerable areas will be assessed using the methodologies described in the surface water vulnerability section above." The reference pertains to the WHPA E and WHPA-F, yet these areas have not been delineated. It would be more appropriate to suggest that when these areas are delineated, the vulnerability score will be assessed based on the method above.	Text revised.	DONE
MOE	53	MOE has identified activities in the SPA that may have an impact on groundwater vulnerability. In Ingersoll. A number of active below-water quarries that expose aquifers. The sizes of the quarries are relatively large - their impacts to groundwater need to be assessed in the vulnerability assessment and the associated threats that could potentially be occurring at these sites; within HVA and SGRA, not in WHPA. Location: east of Ingersoll. Section in AR: Zorra. -New application in 2010 for a below-water gravel pit that will expose the overburden aquifer; likely within HVA and SGRA, not WHPA. Location: Lot 22, Concession 5, Zorra, County of Oxford.	Oxford confirmed it is not in the WHPA. No adjustments have been made to vulnerability of SGRA. No adjustments can be made to HVAs.	No change.
MOE	54	1a) The Tier 2 Water budget and stress assessment presented in the AR is not complete as it does not comply with the following TR. Drought scenarios are missing as required in TR 34(2d and e) and 35(2f and g). As stated in the AR on page 3-15 "Drought scenarios have yet to be completed and will be incorporated into a subsequent version of this Assessment Report." Conclusions on Tier 2 do not represent the complete analysis.	Duplicate of comment 40. Text revised to indicate that this work has not been completed. Therefore this work will be included in an amended AR. Work is noted as a data gap in Section 3.6 and in Section 9.	DONE
MOE	55	2a) Section 3.3.2 introduces the Tier 1 water budget and indicates that there are 32 subwatersheds in the Thames Sydenham and Region. The technical rules require that the subwatersheds in each source protection area be identifies, meaning the report must show that there are 11 in the Upper Thames Region source protection area. 2b) Section 3.3.3 introduces the Tier 2 water budget. The technical rules require that the AR document how many subwatersheds (5) in the source protection areas were evaluated at the Tier 2 scale within the boundaries of the Upper Thames Region source protection area	Text revised to indicate the number of subwatersheds in the UTRSPA and the number considered in the Tier 2 work.	DONE

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MOE	56	3a) Table 3.6: The table summarizes the groundwater stress assessments for both Tier 1 and Tier 2 evaluations. It would be helpful to have separate tables that show the results of the Tier 1 stress assessment (both surface water and groundwater) (as per technical rule 21) and the results of the Tier 2 stress assessment (groundwater only) (as per technical rule 23) 3b) Map 3-6: It would be helpful to separate this map into two maps – one map showing the Tier 1 stress assessment and a second map showing the Tier 2 stress assessment. Given the requirements of the technical rules, and the consultation requirements, it may be difficult for a reader to understand the different between the two stress levels with the maps combined.	Discussed with MOE. Text added to clearly describe how the results are discussed and demonstrate that the analysis was undertaken and documented in 2 separate reports.	DONE
MOE	57	It would be helpful to have a separate SGRA delineation map and a SGRA groundwater vulnerability map.	Maps 4-2-1 and 4-2-2 provide this info	No change.
MOE	58	MOE has identified a site of historical contamination that may be considered by the SPC in their threats assessment: Woodstock. There was an historical underground storage tank leakage site in the late 90's. Petroleum hydrocarbon related subsurface contamination still exists as of 2010. Impacts include free product LNAPL, soil contamination, and relatively large groundwater plume; within HVA and SGRA, not in WHPA. Location: 16 Ingersoll Road, Woodstock	Add information into Section 6 and summary 6. Would be considered during conditions assessment work	DONE
MOE	59	On page 6-7, Section 6.2, third paragraph, there is mention of a spill at the Mitchell municipal well supply. There is no description of what the product spilled was. If this information is available, it would be helpful to include this additional information, so it is consistent with the other descriptions in this section and how this relates to the threats assessment.	Text in section 6 and summary 6 is revised based on additional limited information available. AR already indicates that further investigation required.	DONE
MOE	60	On page 4-1, the second paragraph references tables for IPZs. There are no IPZs within the Upper Thames River SPA. It is suggested that this is changes to ensure consistent message throughout the AR.	Text is revised.	DONE
MOE	61	It would be helpful for the reader if the tables on pages 3-17 made reference to the Provincial Table of Circumstances (on each table), since the provincial tables provide more detail. This is a local decision on including this reference.	The Provincial Table of Circumstances are the MOE threats tables. These are referred to in Section 7 and in the Appendix 10, threats tables.	No change.
MOE	62	Section 3.0 Water Budget and Water Quantity Stress Assessment Page 3-20: "...SGRAs which are coincident with Highly Vulnerable Aquifers (HVA), will receive a vulnerability score of 6 which can result in a moderate threat, while activities in other SGRAs cannot result in water quality threats due to the vulnerability score being 4 or less." This statement is incomplete as areas with a vulnerability score of 6 may have moderate or low drinking water threats.	Text is revised.	DONE
MOE	63	Section 7, Page 7-12, Chemical Threats Related to the Use of Land for Livestock Grazing, Pasturing or Outdoor Confinement Area or Farm-Animal Yard. It appears as if the NU/acre calculations for grazing & OCA threats uses the vulnerable area in the denominator. Based on the circumstances in the technical rules, the nutrients generated at an annual rate must be determined by the number of NU on the farm divided by the size of the livestock grazing land or pasturing land.	The denominator used in the calculation is correct. The methodology text will be revised.	DONE

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CA Staff	64	Oxford systems significant threat location counts in the AR are to be made consistent with information in the Oxford technical reports regarding sewer line threats. This will not affect consultation of those affected, as the threat was inventoried by the municipality.	Significant threat locations count in the section 7, Oxford system summaries and section summary 7 are revised.	DONE
CA Staff	65	Sewer lines were not reviewed during the threats and risk assessment in the Perth systems studies.	Added as a data gap in Sections 7 and 9.	DONE
CA Staff	66	List of references needs to include Tier 1 and Tier 2 reports, and the Watershed Characterization Report	References added.	DONE