

**Appendix K**

**Comment Response Matrix Responses**

**GENERAL**

ID	COMMENT	REPORT	REFERENCE	COMMENT / RESPONSE		
No.	BY	Volume/ Appendix	Page/Section/ Table Drawing/Figure	City / HCA/ EXP Comments / October 21, 2022	Consultant's Team Response / April 2024	City / EXP Comments / May 15, 2024
1	City/EXP			Any studies that are required should be completed as part of Block 1 SS, not to deferred to the Detailed Design process.	Required studies should be confined only to what is required for Secondary Plan Level investigations. Draft Plans, ZBA and SPA applications will follow later.	Refer to the high level/planning comments.
2	HCA			Various Sections of the draft report identify future study recommendations to be addressed during subsequent detailed design stages. <b>It is recommended that these items be summarized in a separate section.</b> Furthermore, it is suggested that this be expanded to also include additional items identified by HCA staff. Many of these future studies will require review and approvals by various agencies. A listing of key future study requirements from an HCA perspective are included below.	The report has been updated to include a section which outlines subsequent studies needed in support of Draft Plan Approval.	Refer to the high level/planning comments.
3	HCA			a. Development constraints (including environmental features and hazards) confirmed with design level topographical surveys.	Acknowledged. Surveys to be completed before detailed design.	
4	HCA			b. The status of HCA's Floodplain Mapping Updates project and determination of applicable flood hazard limits will need to be reviewed at subsequent detailed design stages at the time of any application for development.	Accepted.	
5	HCA			c. For Watercourse 6, any considerable differences between the flood levels developed by the Block 1 and Block 2 (Aquafor Beech 2018) studies will be addressed at subsequent detailed design stages, in conjunction with any required alterations to preliminary flood hazard limits (and development constraints) based on finalized findings of HCA's Floodplain Mapping Updates project or other available information at the time of an application for development.  If HCA staff continue to not support floodplain mapping assessments that includes controlled outflows from stormwater management features, at a subsequent detailed design stage a floodplain mapping assessment should be completed to confirm that the proposed new street crossing of Watercourse 5 does not result in increased flood	The Block 2 floodplain delineation has been adopted for the purposes of this BSS. Further floodplain study will be required in support of planning applications and in conjunction with HCA floodplain mapping.  Subsequent to these comments, it has been agreed that controlled flows are appropriate for floodplain mapping assessments.	
6	HCA		WC5	d. The proposed new street crossing of Watercourse 5 will require further review during detailed design, to confirm design requirements of fluvial geomorphology, aquatic ecology and wildlife passage are achieved.	Acknowledged. Will be addressed at draft plan / detailed design.	
7	HCA		WC5	e. Regarding the proposed Watercourse 5 realignment, HCA staff will continue to review (as information is made available throughout the subsequent detailed design stages) to ensure that the following assessments have been adequately completed:  Updated (as required) hydraulic impact assessment to evaluate potential impacts of the proposed works on peak flows, water levels, floodplain lines and erosion potential; - Natural channel design, including main channel meander, riffle / pool sequencing, low flow channel capacity design, etc - Identification of design measures to avoid/mitigate the potential negative effects of the proposed stream relocation on existing natural heritage features and functions. Potential changes to the existing hydrologic regime are of particular concern as such changes could negatively impact wetlands located immediately upstream of Sherwood Park Road; - Input to incorporate aquatic habitat recommendations. - Riparian corridor characteristics - Planting and Vegetation - Transitions to existing upstream and downstream channel configurations	Acknowledged. Will be addressed at draft plan / detailed design.	
8	HCA			f. Confirmation of the proposed Stormwater Management facilities designs under final development plans, as required. This may include any updates to proposed drainage areas, imperviousness amounts, drainage slopes and proposed major and minor drainage patterns, etc. to each facility, as these may alter the estimated proposed runoff peak flow rates and runoff volumes to the facilities. This may also include confirmation of permanent pool, forebay, extended detention and flood control designs, release rates and available storages.	Acknowledged. Will be addressed at draft plan / detailed design.	
9	HCA			g. Detailed Design of Stormwater Management Facilities – recommended actions and design criteria as per Section 7.6.0 Functional Design of Stormwater Management Facilities in the draft report <i>Fruitland – Winona - Secondary Plan Area- Block 1 Servicing Strategies - VOLUME 1 (AMEC FW, August 2017)</i> .	Acknowledged. Will be addressed at draft plan / detailed design.	
10	HCA			h. Detailed Stormwater Management Reports, including agency reviews.	Acknowledged. Will be addressed at draft plan / detailed design.	

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11	HCA			i. Stormwater Management facility Operation and Maintenance details.	Acknowledged. Will be addressed at draft plan / detailed design.
12	HCA			<p>j. Incorporation of LID measures should be considered in greater detail at the time of development of individual blocks/sites.</p> <p>For areas which are unable to be serviced by the three Stormwater Management ponds, lot-level source controls are proposed to be used to provide the necessary water quality, erosion and flood control. The SCUBE Subwatershed Study also made recommendation for LID BMPs to be considered in a future Servicing Assessment. Section 8.6.2.1 details the recommended LID BMPs to be considered implemented during the next stage of design.</p> <p>It is recommended that groundwater levels be monitored during the pre-construction and construction periods, given the potential for groundwater levels to be higher than those recorded previously. Higher groundwater levels would potentially have an impact on water balance, infiltration, LID design, building/foundation construction, etc. Also, this monitoring will assess the amount of natural seasonal fluctuation and the effect of construction on the groundwater levels at the property. During construction, it is recommended that any dewatering required for construction of basements or utility trenches be measured in order to assess the effect of dewatering.</p>	<p>Acknowledge. LID features and lot level controls will be addressed at draft planning or detailed design.</p> <p>Monitoring will be continued. Ground water monitoring is typically a requirement of Draft Plan Approval.</p>
13	HCA			k. Grading – recommended actions as per Section 7.2 Grading in the draft report <i>Fruitland – Winona - Secondary Plan Area- Block 1 Servicing Strategies - VOLUME 1 (AMEC FW, August 2017)</i> .	Acknowledged.

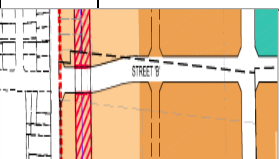
Study Report: Block 1 Servicing Strategy (1st Draft): Fruitland - Winona Secondary Plan, Block 1, prepared by Urbantech for the City of Hamilton and Hamilton Conservation Authority, First Submission dated May 2022					Second Submission dated May 2024		Compliance with the TOR (to support or modify the June 21st & July 2nd comments)	
PLANNING								
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No.	BY	Volume/ Appendix	Page/Section/Table Drawing/Figure No.	City Comments / October 21, 2022	Consultant's Team Response / April 2024	City / EXP Comments / May 15, 2024	EXP Review (incl. provided SWM examples, recent discussions/comments) - Sept. 12, 2024	TOR Reference
1	City		General	Infrastructure Planning staff are requesting comments on the Block 1 Servicing Strategy Draft Report. Sustainable Communities staff have been asked to review ensure consistency with the Fruitland-Winona Secondary Plan land uses and to advise of the status of the outstanding appeal within the Block 1 Servicing Strategy Area.	No Secondary Plan Appeals outstanding for Block except one that is Stand alone (238 Jones Road) which does not impact remainder of Block 1 lands.	Refer to the high level/planning comments.		
2	City		Background:	The Block 1 Servicing Strategy is located within the Fruitland-Winona Secondary Plan. The Servicing Strategy is being completed by a private development group, with input from City staff and other appropriate agencies. The servicing strategy also requires completion of and resolution of appeal of the Gordon Dean Avenue Phases 3 and 4 EA.	Gordon Dean Avenue Phase 3 and 4 EA received Provincial acceptance in December 2022. City of Hamilton has received correspondence from MECP.			
3	City		Policies	<b>The following policies of the Fruitland Winona Secondary Plan are noted with regards to the review of the Block Servicing Strategy:</b>				
4	City		7.4.7.2	<b>Neighbourhood Park Designation</b>				
5	City			In addition to Section B.3.5.3 – Parkland Policies and Section C.3.3 – Open Space Designations of Volume 1, the following policies shall apply to lands designated Neighbourhood Park on Map B.7.4-1 – Fruitland-Winona Secondary Plan – Land Use Plan:				
6	City		a)	Lands designated Neighbourhood Park shall be visible and accessible to the public with unobstructed views provided to improve natural surveillance;	Acknowledged.			
7	City		b)	Neighbourhood Parks shall generally be square or rectangular in shape and have significant street frontage. The specific location, size and shape of Neighbourhood Parks may vary subject to approval of the City without amendment to this plan; and,	Acknowledged.			
8	City		7.4.11	<b>Natural Heritage System – General Policies</b>				
9	City			The Fruitland-Winona Natural Heritage System, identified on Map B.7.4-2 – Fruitland-Winona Secondary Plan – Natural Heritage System, consists of Core Areas, Linkages, Vegetation Protection Zones and Restoration Areas. The following policies shall apply to the Fruitland-Winona Secondary Plan area:				
10	City		7.4.11.1	<b>In addition to Section 2.0 – Natural Heritage System of Volume 1, the following policies shall apply to lands within the Fruitland-Winona Secondary Plan Area:</b>				
11	City		a)	Wherever possible, development within the Fruitland-Winona Secondary Plan Area shall promote a healthy Natural Heritage System by restoring, enhancing, and linking habitat/Core Areas, vegetation protection zones, linkages, and restoration areas;	Acknowledged.			
12	City		b)	All development within the Fruitland-Winona Secondary Plan area shall comply with the Endangered Species Act, 2007 or its successor legislation; and,	Acknowledged.			
13	City		c)	Protection and enhancement of natural heritage features that provide opportunities for corridors from the Niagara Escarpment to Lake Ontario shall be encouraged.	Acknowledged.			
14	City		7.4.11.2	<b>Vegetation Protection Zones and Restoration Areas</b>				
15	City			Vegetation Protection Zones and Restoration Areas are identified on Map B.7.42 – Fruitland-Winona Secondary Plan - Natural Heritage System.	Acknowledged.			
16	City		7.4.11.3	<b>In addition to Section 2.0 – Natural Heritage System of Volume 1, the following policies shall apply to lands identified as Vegetation Protection Zones and Restoration Areas:</b>				
17	City		a)	Where possible, the Vegetation Protection Zone should restore or enhance the features and/or ecological functions of the Core Area as recommended by an Environmental Impact Statement prepared in accordance with Section F.3.2.1 of Volume 1, to the satisfaction of the City; and,	Acknowledged.			
18	City		b)	When new development or site alteration is proposed adjacent to or within a Restoration Area, the Restoration Area shall be evaluated through an Environmental Impact Statement in accordance with the SCUBE Subwatershed Studies where required by the City of Hamilton and shall require site specific restoration or planting plans as per the completed Environmental Impact Statement.	Acknowledged.			
19	City		7.4.11.4	<b>A portion of Watercourse No. 5, located north of Sherwood Park Road may be considered for relocation and natural channel design reconstruction to the satisfaction of the City in consultation with the Conservation Authority. (Under appeal as it applies to 238 and 252 Jones Road; 820 and 822 Barton Street East)</b>		Acknowledged.		
20	City		7.4.14	<b>Block Servicing Strategy</b>				
21	City			The Fruitland-Winona Secondary Plan area is characterized by a relatively flat topography which requires specific grading and detailed servicing provisions to adequately service the future development area so development proceeds in a coordinated and comprehensive manner. A Block Servicing Strategy shall be required for the areas identified on Map B.7.4-4 – Fruitland-Winona Secondary Plan – Block Servicing Strategy.	Acknowledged.			
22	City		7.4.14.1	<b>The following policies shall apply to lands identified as the “Servicing Strategy Area” as identified on Map B.7.4-4 – Fruitland-Winona Secondary Plan – Block Servicing Strategy Area Delineation:</b>				
23	City		a)	The City of Hamilton shall prepare a Terms of Reference for a Block Servicing Strategy in consultation with the Conservation Authority;	Acknowledged.			
24	City		b)	The City shall develop a Block Servicing Strategy for the Blocks identified on Map B.7.4-4 Fruitland-Winona Secondary Plan - Block Servicing Strategy Area Delineation;	Acknowledged.			
25	City		c)	All development within the lands identified as the “Servicing Strategy Area” shall conform to the Block Servicing Strategy;	Acknowledged.			
26	City		e)	Notwithstanding subsection (b) above, if a developer(s) wishes to proceed with development in advance of approval of the City initiated Block Servicing Strategy, the developer(s) may undertake a Block Servicing Strategy subject to the following:	Acknowledged.			
27	City		i)	The Block Servicing Strategy submission shall be to the satisfaction of the City, in accordance with the Block Servicing Strategy Terms of Reference and shall include a minimum of one Block, as identified on Map B.7.4-4 – Fruitland-Winona Secondary Plan - Block Servicing Strategy Area Delineation.	Acknowledged.			
28	City		f)	The Fruitland-Winona Sub-Watershed Studies shall form the basis of all Block Servicing Strategies;	Acknowledged.			

<b>Study Report: Block 1 Servicing Strategy (1st Draft): Fruitland - Winona Secondary Plan, Block 1, prepared by Urbantech for the City of Hamilton and Hamilton Conservation Authority, First Submission dated May 2022</b>					<b>Second Submission dated May 2024</b>		<b>Compliance with the TOR (to support or modify the June 21st &amp; July 2nd comments)</b>	
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29	City		g)	A Block Servicing Strategy shall conform to the vision, objectives and policies of this Plan and shall identify the land use designations, densities and natural heritage features, including Vegetation Protection Zones and Restoration Areas, in accordance with this Plan;	Acknowledged.			
30	City		h)	A Block Servicing Strategy shall have regard for existing development in accordance with Policy 7.4.3 (d) of this Plan by reflecting the general scale and character of the established development pattern in the surrounding area by taking into consideration lot frontages and areas, building height, coverage, mass, setbacks, privacy and overview;	Acknowledged.			
31	City		i)	A Block Servicing Strategy shall guide phasing within each Block area within the Fruitland-Winona Secondary Plan;	Acknowledged.			
32	City		j)	A Block Servicing Strategy shall include:				
33	City			i. The location and configuration of schools and parks;	Acknowledged.			
34	City			ii. The detailed local road pattern and trail system;	Acknowledged.			
35	City			iii. The process to determine the final alignment of the north-south Collector Road "A" shall fulfil the Schedule 'C' Class EA planning process of the Municipal Class Environmental Assessment.	Gordon Dean Avenue EA has received MECP acceptance.			
36	City			iv. The boundaries of land use designation and density and distribution of housing types;	Acknowledged.			
37	City			v. Meander Belt Width Assessments for all watercourses;	Acknowledged.			
38	City			vi. A preliminary grading strategy, identifying and meeting existing grades along adjacent roads and ensuring that development within a Block area will not compensate for drainage shortfalls by significantly raising the existing grade elevations;	Acknowledged.			
39	City			vii. A preferred servicing plan; Stormwater management strategy and functional design plan that ensures regional stormwater conveyance to the Lake and drainage plans outlining the major and minor systems and detailed flow limits at critical points;	The stormwater management strategy has been implemented for the 100 year storm as this is the regulatory event.			
40	City			viii. Plans for phasing of development including the size and location of future draft plans of subdivision application to ensure the orderly development of the lands;	Acknowledged. Draft plan application status unknown at this time. BSS Report speaks to infrastructure installation sequence.			
41	City			ix. The identification and consideration of all areas regulated by the Conservation Authority's Development, Interference with Wetlands, and Alterations to Shorelines and Watercourses Regulation	Acknowledged.			
42	City			x. A scoped Air Drainage Analysis Brief, which has been prepared by a qualified environmental engineer, with additional information being provided by a climatologist, and agrologist who are specialized in the field of tender fruit and grape production, to the satisfaction of the City. The Air Drainage Analysis Brief shall include the following:	Acknowledged.			
43	City			1. A review of the existing conditions, including air photos, topography, thermal conditions, climate and air movement down the Niagara Escarpment and towards Lake Ontario, to evaluate the effects of the proposed development on the existing microclimate and airflow; and,	Acknowledged.			
44	City			2. Where appropriate, proposed road layout and development patterns should be designed in a north/south alignment to minimize air drainage and minimize potential negative impacts on the tender fruit area to the south.	Acknowledged.			
45	City			xi. A Hydrogeological investigation that includes:	A baseline hydrogeological study has been provided with the BSS. In support of detailed design, site specific hydrogeological studies will be undertaken.			
46	City			1. Groundwater levels and flow path;	Acknowledged.			
47	City			2. Significant recharge and discharge zones;	Acknowledged.			
48	City			3. The impacts of development on the functions mentioned in Policy 7.4.14.1 (i), (xiii), 1 and 2 above;	Acknowledged.			
49	City			4. The foundation drain flow rate based on groundwater and severe wet weather conditions;	Acknowledged.			
50	City			5. A recommendation for an appropriate sump pump design; and,	Acknowledged.			
51	City			6. A contingency plan to ensure that an appropriate mitigation strategy can be implemented where:				
52	City			a. An aquifer is breached during construction;	Acknowledged.			
53	City			b. Groundwater is encountered during construction;	Acknowledged.			
54	City			c. Continuous running of sump pump occurs; and,	Acknowledged.			
55	City			d. Negative impacts occur on the water supply and sewage disposal system or any surface and groundwater related infrastructure.	Acknowledged.			
56	City			xii. A phasing strategy for external road infrastructure to ensure that the required upgrades are implemented to support growth subject to the following:				
57	City			1. Approved capital budget funding for the road infrastructure project(s);	The current draft development charge background study indicates DC funding for improvements to all boundary roads through 2031, including Gordon Dean.			
58	City			2. The availability of storm and sanitary outlets; and,	Storm and sanitary outlets are studied in the Block study. Report has been updated to address which outlets are eligible for DC funding.			
59	City			3. The servicing needs of abutting developments are coordinated with the road project.	Acknowledged.			
60	City			k) Implementation of the Fruitland-Winona Secondary Plan Urban Design Guidelines;				
61	City			m) Where a Block Servicing Strategy is prepared by a developer(s), the Strategy shall demonstrate consultation and general landowner support for lands within the subject Block Servicing Strategy area, and be completed to the satisfaction of the City in consultation with the Conservation Authority;	Acknowledged.			
62	City			n) A Block Servicing Strategy shall be used by the City to guide the review of planning applications within the respective Block Servicing Strategy area;	Acknowledged.			

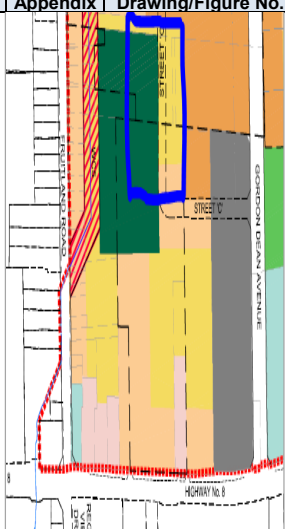
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63	City			o) Notwithstanding Policy F.1.4.7 of Volume 1, and in accordance with Policy 7.4.17.1 of this Plan, the boundaries of the land use designations on Map B.7.4-1 – Fruitland –Winona Secondary Plan – Land Use Plan, and the alignment of proposed collector roads identified on Map B.7.4-3 – Fruitland Winona Secondary Plan – Transportation Classification Plan, are intended to be flexible and may be modified within the Block Servicing Strategy to achieve a desirable urban pattern without amendment to this Plan, provided the proposed change does not result in a decrease in the residential density for the Block area or alter the intention and functionality of the collector road system;	Acknowledged.		
64	City			p) The recommendations of a Block Servicing Strategy shall be incorporated into the City's Staging of Development Report as appropriate;	Acknowledged.		
65	City			q) The following shall apply to new road crossings:			
66	City			i. Where possible, road crossings shall avoid significant and/or sensitive natural features;	Acknowledged.		
67	City			ii. Where it is not possible for road crossings to avoid significant and/or sensitive natural features, road crossings may be located in previously disturbed watercourse reaches or in locations where the disturbance or removal of riparian vegetation can be minimized;	Acknowledged.		
68	City			iii. New roadway culverts and bridges shall have sufficient conveyance capacity to pass the Regulatory flood event (larger of Hurricane Hazel and 100 year event) to avoid adverse backwater effects;	Acknowledged.		
69	City			iv. Where new roadway culverts and bridges cannot meet the requirements set out in Policy 7.4.14 (q),(iii) above, Regulatory flooding depths on roadways shall be based on the standards within the Ontario Ministry of Natural Resources Natural Hazards Technical Guides, latest version or its successor	Acknowledged.		
70	City			v. If a minor realignment of the stream channel is necessary to achieve the desired crossing configuration, the new channel should be established using natural channel design principles.	Acknowledged.		
71	City			r) A Block Servicing Strategy, for the area identified as Block 1 on Map B.7.4-4 – Block Servicing Strategy Area Delineation, shall determine the floodplains for the following two locations:			
72	City			1. Along Watercourse 5.0, immediately downstream of Fruitland Road (between sections 2221 and	Acknowledged.		
73	City			2. Along Watercourse 5.0, halfway between Highway No. 8 and Barton Street (between sections 1693.967 and 1537.457).	Acknowledged.		
74	City			s) A Block Servicing Strategy, for the area identified as Block 2 on Map B.7.4-4 – Block Servicing Strategy Area Delineation, shall determine the floodplains along Watercourse 6.0, downstream of Highway No. 8 (between sections 2232.182 and 1785.033); and,	Acknowledged.		
75	City			t) Landowners of holdings less than 8.0 hectares (20 acres) shall be encouraged to submit joint draft plans of subdivisions with adjacent owners to ensure comprehensive planning and expedite their development proposals.	Acknowledged.		
76	City		<b>7.4.16</b>	<b>Stormwater Management</b>			
77	City			Stormwater management facilities have not been designated on Map B.7.4-1 - Fruitland-Winona Secondary Plan - Land Use Plan. The size, number and location of stormwater management facilities shall comply with City's Criteria and Guidelines for Stormwater Infrastructure Design and Policies, the Fruitland Winona Sub-watershed Studies and the Block Servicing Strategy required in Section 7.4.14 – Block Servicing Strategy of this Plan. Stormwater management facilities may be identified or relocated through the Block Servicing Strategy and shall comply with the policies of this Plan.	Acknowledged.		
78	City		<b>7.4.16.1</b>	<b>The following policies shall apply to the location and design of new stormwater management facilities:</b>			
79	City			a) Stormwater management facilities shall be located and designed to maintain ecological function of the Natural Heritage feature;	Acknowledged.		
80	City			b) Stormwater management facilities shall be located adjacent to the Barton Street Pedestrian Promenade and other Open Space Designations where possible;	Acknowledged.		
81	City			c) Stormwater management facilities along the Barton Street Pedestrian Promenade shall be designed to promote public safety, and, where possible, shall not be fenced; and,	Acknowledged.		
82	City			d) Stormwater management facilities shall be designed to provide visual attraction and passive recreation where possible.	Acknowledged.		
83	City		<b>Comments:</b>			All applicable Secondary Plan policies noted in staff's previous comments continue to apply.	
84	City			<b>Appeal Status:</b> The Secondary Plan appeal for 238 Jones Road and 820/822 Barton Street remains outstanding. The expected time of resolution is unknown. Page 12 of the report references the Colville Consulting EIS which states that the wetlands by watercourse 6 do not meet the definition of a wetland in the Urban Hamilton Official Plan. The status of wetlands as noted in the Colville EIS is contested by the City and the CA. The identification of natural heritage system features within the Secondary Plan as it pertains to the lands under appeal must still be resolved.	Some of these appeals have been resolved, some have not as per City email of Nov. 17, 2023. Drawings have been updated to reflect current appeals.	The Secondary Plan appeal for 238 Jones Road remains outstanding. A hearing has been scheduled in October 2024 for this Secondary Plan appeal.	



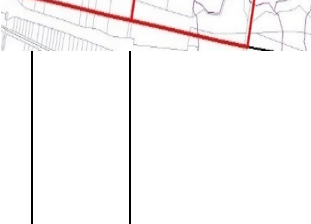
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85	City			<p>The Development concept in Figure 3 shows some elements of the Secondary Plan land use designations, and the Site Plan overlay in Figure 5 also shows the Secondary Plan land use designations. In both maps, the Neighbourhood Park location has been moved further west than the Secondary Plan mapping. Based on policies 7.4.7.2 b) and 7.4.14.1 o), this would not require an official plan amendment. However, the change would need to be reviewed through the development application process. All other land uses shown on Figure 5 appear to be consistent with the Secondary Plan.</p>	Acknowledged.	<p>of a minor shift in the location of the Neighbourhood Park within Block 1, subject to meeting required criteria including size, shape and road frontage. Additionally, staff requested confirmation of support from any landowners impacted by the shift.</p> <p>The proposed park site appears to be approximately 2.3 hectares in size, which meets the minimum park size standard. Staff request confirmation of the size of the park. The park block designated in the Secondary Plan is approximately 2.47 hectares in size, which was sized to ensure that the parkland provision ratios in the Official Plan are met. The proposed park shown in the block servicing strategy should strive to maintain a size as close as possible to the original.</p> <p>The proposed park block is located outside of the watercourse No. 5 channel and buffer area, is a square/rectangular shape, and has road frontage along the easterly boundary of the park. It is still located centrally within the same generally quadrant of the Block 1 Servicing Strategy area. Information has also been provided to staff to verify that all of the lands where the park would be located are owned by the Landowner Group. Staff do not have any further concerns with the park location and dimensions as shown in the Block Servicing Strategy</p>		
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86	City			<p>The proposed SWM pond #3 in the NE corner of the study area appears to encroach onto a core area and vegetation protection zone, based on Map B.7.4-2 - Natural Heritage System of the Fruitland Winona Secondary Plan. The pond placement and/or dimensions may need to be adjusted to avoid the woodland at the rear of 798 Barton Street and ensure that the core area is appropriately buffered and protected. Further review at the formal application stage will be needed.</p>	We have adopted the Block 2 Floodplain. SWM Pond #3 has been revised to ensure no encroachment into the floodplain.	<p>comment on Natural Heritage matters. Natural Heritage staff should confirm if the watercourse No. 5 channelization location and proposed channel width are appropriate. Natural Heritage staff should also confirm if the proposed SWM pond 3 is appropriately located outside of core areas and vegetation protection zones. The comment response from Urbantech notes that the Block 2 Floodplain was identified and the SWM Pond 3 has been revised to ensure no encroachment into the floodplain. However, staff note that the floodplain does not necessarily align with Natural Heritage System core area boundaries and required vegetation protection zones as per the City's Official Plan policies. The SWM pond design should ensure that it does not encroach into these areas.</p>		
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87	City			<p>Page 11 of the Servicing Strategy notes that watercourse 6 may be a good candidate for future relocation and enhancement. Additional study would need to be done to determine whether this is appropriate, given core features that may be located within this area which are still under appeal. This need for further study is acknowledged on Figure 3, Volume 2 of the report.</p>	Acknowledged.	<p>Space in the Development Concept Plan. Staff request clarification of the rationale for this as it does not reflect the Secondary Plan designation. Is this intended to recognize development limitations due to core area designations (i.e., linkage areas, vegetation protection zones)? Since there is an active appeal for these lands, if they were to be developed for Medium Density residential uses, is that potential captured in the servicing strategy? Please confirm.</p>		
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88	City			<p>Page 7 notes that population estimates will be compared with GRIDS 2 population estimates once they are available. The GRIDS2 population estimates for the Council-endorsed no Urban Boundary Expansion growth option have been completed and are available for review. The Block 1 area falls within Traffic Zones 5256 and 5077 as shown at the right.</p>	Populations identified in the BSS are based on civil design criteria for sewer pipe sizing and may differ from populations reported in the GRIDS2 study.	<p>Page 7 of the report continues to note that an update to the City-Wide GRIDS Study is underway. This should be revised to note that an update to the City-Wide GRIDS Study was recently approved. Population forecasts by traffic zone areas are being updated by the City to reflect the GRIDS2 approval and subsequent Provincial approval of implementing Official Plan changes. Please note that the traffic zone geography is not the same as the boundary of the Secondary Plan, and includes some of the Greenbelt lands to the south. If comparisons are made, some assumptions would have to be made about the rural lands to determine if population estimates are aligned.</p>		
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89						<p>contemplated by the Secondary Plan within Block 1. Staff note that "Employment Areas" should be removed from this list, and "Local Commercial", "Utility", and "General Open Space" should be added.</p>		
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90				<p>The GRIDS2 Population Estimates are noted in the table below:</p>		<p>New Comment: Sustainable Communities staff have been asked to reconfirm the need for the future elementary school site shown within the Block 1 Servicing Strategy area, to ensure that the Block Servicing Strategy appropriately plans for the servicing of the lands. Staff have confirmed that the school site is required by the Hamilton Wentworth District School Board. As such, the Block Servicing Strategy should continue to plan for this use.</p>		
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GRIDS 2 Population	
Traffic Zone	y2021

Study Report: Block 1 Servicing Strategy (1st Draft): Fruitland - Winona Secondary Plan, Block 1, prepared by Urbantech for the City of Hamilton and Hamilton Conservation Authority, First Submission dated May 2022				Second Submission dated May 2024		Compliance with the TOR (to support or modify the June 21st & July 2nd comments)	
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PLANNING							
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ID	COMMENT	REPORT	REFERENCE	COMMENT / RESPONSE			
No.	BY	Volume/Appendix	Page/Section/Table Drawing/Figure No.	City Comments / October 21, 2022	Consultant's Team Response / April 2024	City / EXP Comments / May 15, 2024	EXP Review (incl. provided SWM examples, recent discussions/comments) - Sept. 12, 2024

				5256	279		
				5077	291		
				Total	570		

Sustainable Communities staff have no further comments.  
(MP- 2022/08/03)



## WATER + WASTEWATER SERVICING

ID	COMMENT	REPORT	REFERENCE	COMMENT / RESPONSE																						
No.	BY	Volume/Appendix	Page/Section/Table Drawing/Figure No.	City / EXP Comments / October 21, 2022	Consultant's Team Response / April 2024	City / EXP Comments / May 15, 2024	EXP Review (incl. provided SWM examples, recent discussions/comments) - Sept. 12, 2024	TOR Reference																		
Wastewater Servicing																										
1	City / EXP	Vol 1	Section 4.2.1	a) Confirm how Areas SW3, SW8, SW9 and SW10 will be serviced. Please add catchment ID labels to the sanitary design sheet. It is not clear where some of the south-western catchment areas are connected to (for example, SW6). b) Confirm if a new sewer on HWY 8 is required.	a) Catchment areas SW3, SW6, SW9, and SW10 BSS1 and will drain via Street C, then Street B, then Gordon Dean to Barton Street. An Area ID column has been added to the sanitary design sheet. b) A new sanitary sewer on HWY8 would be required to service SW8. SW8 should drain in a westerly direction towards Fruitland Road where to EX MHSI07A015. See discussion in section 4.2.1.																					
2	City / EXP	Vol 1	Section 4.2.2	a) For SAN-1, SAN-2, and SAN-3, please use different colours to show the separation between the different sewersheds (i.e. Fruitland Rd in blue, Jones Rd in green) and ensure that a full extent of the sewersheds is shown on the drawings. b) Identify which leg of existing sewer on Jones Road north of Barton does not meet City design criteria.	a) SAN-1, SAN-2 and SAN-3 have been updated to show the sewersheds in different colours. b) The sewer legs that are exceeding City criteria have been highlighted in the design sheet and identified on Drawing SAN-2.																					
3	City / EXP	Vol 1	Table 4-1	a) Confirm assumed density and ensure it matches sanitary drainage plans. b) Confirm capacity utilization. As per the City's Comprehensive Development Guidelines (Section E.1.7), trunk sanitary sewers (525 mm and greater) shall be designed to flow at a maximum of 60% full design capacity of the pipe. c) Confirm the extent of required pipe size increases. Ex. 375mm sewer is already situated on Jones Road to HWY 8. d) A new sewer could be installed on Highway 8 if needed to serve Area EXT2. e) General comment on Table 4-1 - Recommendations for sanitary sewer upgrades meeting City's design criteria require clarification based on future anticipated buildout.	a) The assumed density has been verified and the sanitary drainage plan has been updated accordingly. b) Acknowledged that max utilization of 525mm is 60%. c) Pipe Size increases are described in Section 4.2 and 4.3 for the various development scenarios. d) A new sewer within Highway 8 can be connected at Gordon Dean. It is suggested in Section 4.3 that this be determined when land south of Highway 8 are planned. Gordon Dean will deliver a sewer at sufficient depth to service north south of Highway 8. Say 5.0m cover.																					
4	City / EXP	Vol 1	Section 4.3	a) It is stated "At the time of block planning for lands south of Highway 8, monitoring be undertaken in the Fruitland and Jones Road sewers to determine the actual capacity utilization of the existing sewers. By that time Block 1 and Block 2 will be partially built out and actual flows will be known". This will not meet City's design criteria. The Proponent to ascertain upstream drainage area outside of the secondary plan and confirm population estimates. b) Please provide sources for population density assumptions noted in Table 4-1. Lands south of Hwy 8 between Fruitland and Jones are outside of the Urban Boundary Area.	a)Upstream drainage areas outside of the secondary plan have been delineated and assigned a population density of 110-125 people per hectare. In the absence of land use plans, the proposed population densities are considered conservative for planning purposes. B) The populations densities are from the City of Hamilton Comprehensive Development Guidelines and Financial Policies Manual Section E.1.4 Design Flows. They have been outlined in section 4.1.1 of the BSS.																					
5	City / EXP	Vol 1	Section 4.3	It is stated "The City may also consider financing sewer upgrades to accommodate future growth south of Highway 8 in a future DC updates." The proponent will be required to pay the full cost of sewer up to 450mm. For sizes greater than 450mm, the City shall pay the over-size component on a flat rate basis in accordance with established rates. Further explanation in the report is needed regarding the financing of sewer upgrades.	The financing of oversizing and deeping will be established in accordance with City financial policies for both onsite or offsite improvements. Some works may qualify for DC. Other works may be cost shared amongst developers. Financing will be addressed at the draft plan stage or later.																					
Water Servicing																										
6	City / EXP	Vol 1	Section 5.3	Reference the City's Comprehensive Development Guidelines and Financial Policies Manual Section D.1.5 which states that Fire flows shall be determined in accordance with the Fire Underwriters Survey (FUS 1999).	Reference to FUS added	UE10/25/2024-in 2019 the City replaced FUS as the standard with PW19095 Fire Flow Design Policy. The Comprehensive Development Guideline will be updated with this in the next iteration. Depending on the start date of this assignment and TOR, PW19096 may be the appropriate reference rather than FUS. If FUS is the standard as per TOR, then it would be appropriate to document the new PW19096 Policy and high subjective comparison.  PW19096 identifies Target Fire Flows based on Landuse. Section 5.3 should be updated. see column H. Any future Form 1 or Development Application will be evaluated using this standard.	Please select from <b>Table 1 : Target Available Fire Flow</b> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="font-size: x-small;">Land Use</th> <th style="font-size: x-small;">Target AFF (L/s)</th> </tr> </thead> <tbody> <tr><td style="font-size: x-small;">Commercial</td><td style="font-size: x-small;">150</td></tr> <tr><td style="font-size: x-small;">Small ICI (&lt;1,800 m<sup>3</sup>)<sup>1</sup></td><td style="font-size: x-small;">100</td></tr> <tr><td style="font-size: x-small;">Industrial</td><td style="font-size: x-small;">250</td></tr> <tr><td style="font-size: x-small;">Institutional</td><td style="font-size: x-small;">150</td></tr> <tr><td style="font-size: x-small;">Residential Multi (greater than 3 units)</td><td style="font-size: x-small;">150</td></tr> <tr><td style="font-size: x-small;">Residential Medium (3 or less units)</td><td style="font-size: x-small;">125</td></tr> <tr><td style="font-size: x-small;">Residential Single</td><td style="font-size: x-small;">75</td></tr> <tr><td style="font-size: x-small;">Residential Single (Dead End)</td><td style="font-size: x-small;">50</td></tr> </tbody> </table> <p style="font-size: x-small; margin-top: 2px;"><sup>1</sup> 1800m<sup>3</sup> represents a maximum building volume that qualifies as "Small ICI"</p>		Land Use	Target AFF (L/s)	Commercial	150	Small ICI (<1,800 m <sup>3</sup> ) <sup>1</sup>	100	Industrial	250	Institutional	150	Residential Multi (greater than 3 units)	150	Residential Medium (3 or less units)	125	Residential Single	75	Residential Single (Dead End)	50
Land Use	Target AFF (L/s)																									
Commercial	150																									
Small ICI (<1,800 m <sup>3</sup> ) <sup>1</sup>	100																									
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Residential Medium (3 or less units)	125																									
Residential Single	75																									
Residential Single (Dead End)	50																									
7	City / EXP	Vol 1	Section 5	The proposed watermain layout is not discussed. The water distribution analysis indicates 200mm sizing of the watermain on Street C which differs from the size indicated on Drawing WM-1 and Plan and Profile Drawings. Confirm the sizing.	Street C sizing is 300mm.	UE10/25/2024-all sizing shall be completed through pressure district wide analysis as per MECP Form 1 requirements. NOTE- Section 5 introduction implies districtwide modelling was completed by WSP.																				

<b>Study Report: Block 1 Servicing Strategy (1st Draft): Fruitland - Winona Secondary Plan, Block 1, prepared by Urbantech for the City of Hamilton and Hamilton Conservation Authority, First Submission dated May 2022</b>	<b>Second Submission dated May 2024</b>	<b>Compliance with the TOR (to support or modify the June 21st &amp; July 2nd comments)</b>
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WATER + WASTEWATER SERVICING							
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ID	COMMENT	REPORT	REFERENCE	COMMENT / RESPONSE				
No.	BY	Volume/ Appendix	Page/Section/Table Drawing/Figure No.	City / EXP Comments / October 21, 2022	Consultant's Team Response / April 2024	City / EXP Comments / May 15, 2024	EXP Review (incl. provided SWM examples, recent discussions/comments) - Sept. 12, 2024	TOR Reference
8	City / EXP		General	The Water and Wastewater Servicing needs to account for the adjacent land uses/future servicing.	The water servicing is drawing from existing watermains around the perimeter of the site, and servicing the interior lands out to 2031 demands. The capacity of the City's infrastructure to service adjacent lands in the future is not part of the water study. As noted in the report, the new wastewater infrastructure within the block limits has been sized to convey adjacent land uses and future servicing. Additional infrastructure improvements required downstream of the block are not taken at this time if they are triggered by future servicing.	UE10/25/2024-If the TOR did not require modelling of the entire pressure district, then the EXP statement seems appropriate. Lessons Learned, no infrastructure should be sized without analysis at the entire catchment/district scale. NOTE-if this BSS Study is to be used for pre-approval of subsequent sub-divisions/Site Plan applications, and Form 1 application (MECP Standards for Future Alterations), then the entire pressure district must be considered in watermain sizing. NOTE- Section 5 introduction implies districtwide modelling was completed by WSP.		

Study Report: Block 1 Servicing Strategy (1st Draft): Fruitland - Winona Secondary Plan, Block 1, prepared by Urbantech for the City of Hamilton and Hamilton Conservation Authority, First Submission dated May 2022	Second Submission dated May 2024	Compliance with the TOR (to support or modify the June 21st & July 2nd comments)
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**GRADING & SERVICING**

ID	COMMENT	REPORT	REFERENCE	COMMENT / RESPONSE			
No.	BY	Volume/ Appendix	Page/Section/Tabl e Drawing/Figure	City / EXP Comments / October 21, 2022	Consultant's Team Response / April 2024	City / EXP Comments / May 31, 2024	EXP Review (incl. provided SWM examples, recent discussions/comments) - Sept. 12, 2024
<b>Grading + Road Works design, including Gordon Dean Rd</b>							
1	City / EXP	Vol 2	Section 3.2.4	a) Confirm how the proposed grading modifications will impact existing dwellings. b) Will existing dwellings be demolished?	The details of grading between participating and non-participating landowners will be dealt with at the draft plan/detailed design stage.  Existing dwellings will be demolished on participating properties.	Refer to the high level/planning comments.	
2	City / EXP	Vol 2	Section 3.2.6	Reference Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads. Minimum road slope for local urban residential road is 0.75%.	City has indicated roads will need to be at 0.75%, developers may still advocate for reduced standard due to practical constraints. On other projects the City has indicated that they will accept slopes at a minimum of 0.5% if it reduced overall project earthworks.		
3	City / EXP	Vol 2	Section 3.3.1	Confirm if reduction of ROW width adheres to TAC Geometric Design Guide for Canadian Roads and City's official plan.	ROW widths adhere to TAC design guidelines.		
4	City / EXP	Vol 2	Drawing GRD-1	a) Show proposed grades at all corners of blocks, lots and easements. b) Show scale Bar. c) Revise road grades to minimum 0.75%.	Acknowledged. Will be addressed at detailed design.  See Grading and Servicing comment 2 response.	a) The scale bar is important and should be shown on the drawing, thereby allowing a proper review of the drawing. b) Please confirm that the proposed regarding of the Barton Street profile to create a low point adjacent to	
5	City / EXP	Vol 2	Drawing GRD-2	a) Show limit of existing dwellings on section. b) Clarify how the proposed grading fill will work with existing dwellings. c) Show scale Bar. d) Indicate the rear lot line on section. e) Clarify limit of grading - trim or extend section, as required, to provide clarity. f) What is the return period of the indicated flood water surface?	Acknowledged. Will be addressed at draft plan/detailed design.	The scale bar is important and should be shown on the drawing, thereby allowing a proper review of the drawing	
6	City / EXP	Vol 2	Drawing GRD-3	a) Show limit of existing dwellings on section. b) Clarify how the proposed grading fill will work with existing dwellings. c) Show scale Bar. d) Indicate the rear lot line on section. e) What is the return period of the indicated flood water surface? f) Indicate the side slope of proposed grading fill.	Acknowledged. Will be addressed at draft plan/detailed design.	The scale bar is important and should be shown on the drawing, thereby allowing a proper review of the drawing	
7	City / EXP	Vol 2	Drawing PP-1	a) Confirm maintenance hole spacing. b) Show scale bar.	Acknowledged. Will be addressed at draft plan/detailed design.	The scale bar is important and should be shown on the drawing, thereby allowing a proper review of the drawing	
8	City / EXP	Vol 2	Drawing PP-2	a) Confirm maintenance hole spacing. b) Show scale bar. c) Revise sewer alignment so that it enters Pond block perpendicular to the street line. d) Show scale bar.	Acknowledged. Will be addressed at draft plan/detailed design.	The scale bar is important and should be shown on the drawing, thereby allowing a proper review of the drawing	
9	City / EXP	Vol 2	Drawing PP-3	a) Storm sewer may need to start closer to the Fruitland Road/Street B intersection where the CBs may be located. Or show low point further away from the intersection to line up with manhole. b) Confirm the WM size on Street C. 200mm dia. is indicated in the hydraulic study. c) Confirm offset of storm sewer from WM. d) Confirm maintenance hole spacing. e) Show scale bar.	Acknowledged. Will be addressed at draft plan/detailed design.	The scale bar is important and should be shown on the drawing, thereby allowing a proper review of the drawing	
10	City / EXP	Vol 2	Drawing PP-4	Minimum road profile is 0.75% per the Comprehensive Development Guidelines and Financial Policies Manual. Show scale bar.	Acknowledged. Will be addressed at detailed design. See Grading and Servicing comment 2 response.		

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**GRADING & SERVICING**

ID	COMMENT	REPORT	REFERENCE	COMMENT / RESPONSE			
No.	BY	Volume/Appendix	Page/Section/Table Drawing/Figure	City / EXP Comments / October 21, 2022	Consultant's Team Response / April 2024	City / EXP Comments / May 31, 2024	EXP Review (incl. provided SWM examples, recent discussions/comments) - Sept. 12, 2024
11	City / EXP	Vol 2	Drawing PP-5	Ex. crossing invert is 85.36 and the proposed storm sewer invert is 85.20. a) Confirm proposed storm sewer inverts. Show scale bar. b) Confirm the HGL impacts of WC5 flows on Barton Street storm sewer and SWM Pond Facility #2 outflows. c) Revise SWM Ponds #2 Facility outlet pipe to be perpendicular to Barton Street line.	Will be addressed at draft plan/detailed design.		
12	City / EXP	Vol 2	Drawing PP-6	a) Confirm maintenance hole spacing. b) Show scale bar. c) Confirm cover requirement on twin 600mm storm sewer. d) Confirm existing culvert invert/proposed storm sewer invert. Existing culvert invert is not legible (1300x1900)	Where 1.2m of cover is provided not provided over the twin 750mm storm sewer, insulation will be provided. Culvert information has been realigned to be visible. MH spacing and scale will be addressed at detailed design.	The scale bar is important and should be shown on the drawing, thereby allowing a proper review of the drawing	
13	City / EXP	Vol 2	Drawing PP-7	a) Confirm maintenance hole spacing and storm sewer offset from WM. b) Show scale bar. c) Confirm storm sewer laterals for future blocks.	Acknowledged. Will be addressed at draft plan/detailed design.	The scale bar is important and should be shown on the drawing, thereby allowing a proper review of the drawing	
14	City / EXP	Vol 2	Drawing PP-8	a) Confirm easement width for 1092x1727mm storm sewer. b) Show section of the easement. c) Show scale bar on drawing.	Acknowledged. Will be addressed at draft plan/detailed design.	The scale bar is important and should be shown on the drawing, thereby allowing a proper review of the drawing	
15	City / EXP	Vol 2	Drawing SAN-1	How will SW.8 and SW.3 be serviced? Will there be a sewer on HWY. 8? a) Show scale bar on drawing. b) Show continuation of extent of sanitary drainage area on separate plan as required. How will SW.9 and SW.10 be serviced. Will there be a sewer on HWY. 8? c) Check population densities and ensure they correspond to official land uses. d) Show continuation of extent of sanitary drainage area on a separate plan as required. e) Show scale bar on drawing.	A future sanitary sewer on Hwy 8 will service SW8 and SW9. SW3, SW10 will be serviced off Street 'D'.	The scale bar is important and should be shown on the drawing, thereby allowing a proper review of the drawing	
16	City / EXP	Vol 2	Drawing WM-1	a) Confirm watermain size on Street C. 200mm dia size is indicated on hydraulic study	Acknowledged. Will be addressed at draft plan/detailed design.	The scale bar is important and should be shown on the drawing, thereby allowing a proper review of the drawing	
17	City / EXP		Figure 4 – Land Ownership Plan:				The "ultimate" watercourse alignment/configuration is shown for Watercourse 5 (WC5); why is it not shown for Watercourse 6 (WC6)?
18							There should be a drawing that shows options to address the potential of the private properties not allowing construction of the new watercourse WC5 across their properties. These options should demonstrate how the development would proceed in the absence of the hold-out private property owners.  The options should show how the new watercourse configuration would tie into the existing watercourse channel upstream and downstream of the private properties. If required, a temporary channel "going around" the private properties on the developer-group lands should be included
19			Figure 4 – Land Ownership Plan:				There is a portion of Gordon Dean Avenue crossing the Marz lands that is not within the limits of the Marz property. Who owns this sliver of future Gordon Dean Avenue and how does it get constructed if that property owner does not allow for its construction?

Study Report: Block 1 Servicing Strategy (1st Draft): Fruitland - Winona Secondary Plan, Block 1, prepared by Urbantech for the City of Hamilton and Hamilton Conservation Authority, First Submission dated May 2022	Second Submission dated May 2024	Compliance with the TOR (to support or modify the June 21st & July 2nd comments)
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**GRADING & SERVICING**

ID	COMMENT	REPORT	REFERENCE	COMMENT / RESPONSE		
No.	BY	Volume/ Appendix	Page/Section/ Table Drawing/Figure	City / EXP Comments / October 21, 2022	Consultant's Team Response / April 2024	City / EXP Comments / May 31, 2024
20		VOL1	SWM-1			<p style="color: red;">EXP Review (incl. provided SWM examples, recent discussions/comments) - Sept. 12, 2024</p> <p>For the SWM pond off of Street 'C' on the Marz lands, the CL radius of the maintenance access road at the 4 corners of the pond should be minimum 12m to enable large vehicles (like a vac truck) to make the corners without tracking off of the road. The same issue should be addressed where the access road off of Street 'C' connects to the SWM pond maintenance access road.</p>
21		VOL1	SWM-3			<p>For the SWM pond off of Gordon Dean Avenue on the Group lands, the CL radius of the maintenance access road at the 4 corners of the pond should be minimum 12m to enable large vehicles (like a vac truck) to make the corners without tracking off of the road. The same issue should be addressed where the access road off of Gordon Dean Avenue connects to the SWM pond maintenance access road.</p>
22		VOL1	SWM-5			<p>For the SWM pond off of Jones Road, the CL radius of the maintenance access road at all corners of the pond should be minimum 12m to enable large vehicles (like a vac truck) to make the corners without tracking off of the road. The same issue should be addressed where the access road off of Jones Road connects to the SWM pond maintenance access road.</p>
23		VOL1	GRD-1/FP plans			<p>Show floodplain limits for both, existing and proposed conditions.</p>



Study Report: Block 1 Servicing Strategy (1st Draft): Fruitland - Winona Secondary Plan, Block 1, prepared by Urbantech for the City of Hamilton and Hamilton Conservation Authority, First Submission dated May 2022				Second Submission dated May 2024						
STORMWATER MANAGEMENT + SWM MODELLING + WATER BALANCE + LIDS										
ID	COMMENT	REPORT	REFERENCE	COMMENT / RESPONSE	Consultant's Team Response / April 2024	Urbantech	EXP/COH verification/acceptance (Sept. 12, 2024)			
No.	BY	Volume/Appendix	Page/Section/Tab/e Drawing/Figure	Comments / October 7, 2022	Consultant's Team Response / Date	City / EXP Comments / May 31, 2024	Urbantech Response / June 20, 2024	To Dos 7-2-24	Post June 21st & July 2nd Review	
Stormwater Management + Storm Servicing										
1	CITY/EXP	Vol 1/2	General	Design Criteria to be clearly presented and verified to confirm targets, standards, and methodologies.		Design Criteria to be clearly presented and verified to confirm targets, standards, and methodologies.			Comments are still pending. The design criteria need to be clearly presented and verified to confirm the targets, standards, and methodologies.	
2	CITY/EXP	Vol 1/2		The strategy for the outlet elevation of the SWM Facilities must be discussed through the CA and MECP.	The placement of the permanent pool elevations lower than the 100yr WSEL in the watercourse is intended to minimize the importation of fill within the block. Consultant, City and HCA to come to agreement on relationships between outlet elevations and SWM facilities.	1. Currently, the PPE for each pond is below the creek 100yr Water Surface Elevation. It is crucial to position the Permanent Pool Elevations (PPE) above the creek's 100-year Water Surface Elevation Level. 2. We understand that positioning the permanent pool elevations below the creek's 100-year Water Surface Elevation Level (WSEL) may reduce the need for fill. However, concurrently, it causes a backwater effect throughout the storm network, which could jeopardize the pond's effectiveness. Hence, it's imperative to first devise a strategy to mitigate this effect within the current design context, as any change later would significantly impact overall site grading, site storm servicing, utility conflicts, and pond designs. It's worth noting that the Ministry of Environment's 2003 Manual recommends placing Stormwater Management (SWM) facilities above the 100-year water elevation of the receiving watercourse. 3. We understand that each pond will feature a Mechanical Spillway installed in the outlet manhole, and designed to mitigate the backwater effect, particularly since the pond's permanent pool elevation is lower than that of the creek's 100-year Water Surface Elevation Level (WSEL). We believe that electric support will be necessary to operate the mechanical system. If this is the case, it is important that the electric powerhouse be located outside the Creek 100-year flood hazard limit. However, we lack clarity on how this arrangement will function. Therefore, we recommend including a schematic depicting the potential location of the powerhouse, along with details about the type of mechanical spillway, with a brief explanation in the report. 4. We acknowledge the pond sizing calculations and the provided pond stage-storage-discharge relationship. In the current design, the 100-year quantity control for each pond has been estimated based on a Control Manhole at the Pond Outlet with an Orifice (Pond 1: 145mm orifice, Pond 2: 130mm orifice, Pond 3: 104mm orifice). However, a Mechanical Spillway System is also proposed to be installed in the Outlet manhole for each pond. It is unclear which system will govern at the Pond Outlet - Orifice Control or the Mechanical Spillway System. The current analysis/VOH model uses the discharge-stage-storage-discharge relationship for each pond based on Orifice Control. The VOH model needs to be updated to correctly represent either Orifice control or Mechanical Spillway system. 5. Referring to Section 6.5.6 of Volume 1, we acknowledge that an HGL analysis will be completed during the detailed design stage. However, we believe an HGL analysis is necessary at this point. Without it, it is unclear how the system will behave during a 100-year storm event, such as the backwater effect, major overland ponding depth, pipe surcharge, etc. We note that whether outlet control is through an Orifice Control or a Mechanical Spillway System, conducting an HGL (Hydraulic Gradient Line) analysis for a 100-year storm is deemed necessary. 6. We suggest updating the VOH model, relevant calculations and reports accordingly.		1. It is common practice throughout Hamilton and multiple other jurisdictions to place the outlet for SWM ponds below the 100 year water elevation in the receiving watercourse. 2. Same as above. MECP recommendation is acknowledged however it is not a requirement. 3. No "mechanical" system if proposed as described in the peer reviewers comments. For clarity our designation of a "mechanical spillway" simply means that the emergency flow spills to a piped system, not to the ground. 4. As described above. 5. The HGL analysis should be provided at the detailed design. This is a function of the proposed draft plan, layout, etc. It is acknowledged it will be required a detailed design. 6. Model does not require updating as it is not a mechanical system. All models will be updated through draft plan and detailed design.	SH owes samples-Item 1. tail water from pond up. Not river. Mechanical spillway applies to pond 2 only. Size for no tailwater and test performance with tailwater. Don't want to rely on TW for hydraulic performance of structure. City call.	1. Note that we have not yet agreed with the claim that "It is common practice in Hamilton and other jurisdictions to place the outlet for SWM ponds below the 100-year water elevation in the receiving watercourse." While we acknowledge that a sample project will be provided to demonstrate that the pond's permanent pool elevation is below the creek's 100-year water elevation, we have not received it yet. Furthermore, the statement "tailwater from pond up, not river" is acceptable only if the pond's permanent pool elevation (PPE) is above the creek's 100-year water elevation. <i>SWM Examples from Urbantech:</i> 4 SWM pond design examples (design drawings) have been received from Urbantech on Sept. 19th. However, only one example applies to the City of Hamilton and a brief review of the design is provided under a separate cover (Review of Park Place Phase 2 SWM Pond and Outlet Structure). The associated SWM report has been obtained from COH. In summary, the Park Place Pond in Waterdown was provided by Urbantech as an example of a precedent that was to illustrate that City of Hamilton staff have accepted criteria other than those highlighted above. However, the design criteria for the Park Place Pond are different than for Block 1 SS (stipulated in the OPA 2018 conditions) and are therefore not applicable in Block 1SS. (Park Place Pond was designed to control for erosion only, not flooding). Note that the City of Hamilton cannot allow the creek to overflow into the Pond, such that the Pond would then back flow to the lots. 2. We acknowledge the statement that "MECP recommendations are recognized but not mandatory," but we must ensure that the pond design functions effectively from a hydraulic perspective, even if it doesn't adhere to MECP guidelines. Please demonstrate how the pond will operate if the permanent pool elevation (PPE) is below the creek's 100-year water elevation. We understand that no backflow preventer is proposed for the pond outlet, so how will creek water be prevented from entering the pond? In this scenario, the pond would function as an online SWM pond, with its active storage (the storage above the PPE) essentially becoming part of the creek's flood storage. 3. We acknowledge that no mechanical system will be proposed. Instead, an emergency spillway designed as a weir will be included and will discharge into the storm pipe system. 4. See above 1,2 & 3 5. We acknowledge that the Hydraulic Grade Line (HGL) analysis will be provided during the detailed design phase. However, since HGL is a critical design parameter for sizing both the pond and storm sewers, we require assurance from the consultant that the current sizing for both the pond and storm sewers will not undergo major changes as a result of the 100-year HGL analysis conducted during the detailed design phase. Therefore, a preliminary hydraulic assessment of the proposed SWM system, from the SWM pond outlet, should be provided to verify operation/functionality of the design. Potential design solutions to address / improve operation of the system, if required, should be identified, i.e., would a larger pond block area be warranted, would the roads profiles/infrastructure in vicinity of the SWM ponds require modifications? 6. We believe the model needs to be updated in accordance with the comments above. REQUIREMENT to be MET for approval of Block 1SS: 100-year water level in the channel needs to be lower than the permanent pool elevation in the POND. (Hydraulic model to be checked/adjusted if needed), AND the WC 5.0 needs to be designed following the Natural Channel Design principles, reviewed, and approved by the Fluvial Geomorphologist, City of Hamilton, and Hamilton Conservation Authority. Suggested potential design changes that could potentially achieve the highlighted City of Hamilton requirements are: a. Storm or Land Development Design changes, i.e., raising land grade/add fill, lower the minimum slope of the road from 0.75 to 0.5 south of Street 'E'. b. WC 5.0 - channel design changes e.g.: widen channel, increase wall height (3:1 ratio), etc. c. Combination of a & b.
3	CITY/EXP	Vol 1	63	Only SWM Facility 1 shows major flow bypass to wet cell. Missing in other two ponds. Will need detailing at detailed design stage.	Acknowledged - detailed design.	NOTED - Comments will be address during detail design				
4	CITY/EXP	Vol 1	63	All SWM Facilities should have erosion protection between inlet forebay and forebay, as well as at all inlet and outlet structures.	Acknowledged - detailed design.	NOTED - Comments will be address during detail design				
5	CITY/EXP	Vol 1	76	The design should verify the impact downstream due to the longer drawdown time in the Pond, which may not be able to handle back to back storms.	Revised drawdown times based on orifice sizing has been included in the submission; drawdown times now range from 27-68 hours which is in line with industry standard of 24-72 hours.	RESOLVED				
6	CITY/EXP	Vol 2	76	Maintenance access within the stormwater blocks shall have a 4.0 m wide road (min). Please ensure that the City's design criteria are met.	Acknowledged.	RESOLVED				
7	CITY/EXP	Vol 2	9	It is unclear how the proposed channel interacts with existing structures. Show existing structures on this exhibit.	Existing structures have been added to the grading plan.	RESOLVED				
8	CITY/EXP	Vol 2	15	Detail the STM connection in Barton Street. How is a PR 1005mm connecting to EX 1000mmx1860mm?	The functional design of the connection of proposed infrastructure to existing will be addressed in support of detailed design.	NOTED - Comments will be address during detail design				
9	CITY/EXP	Vol 2	22	The catchment labels in Storm Drainage Plan (pg. 22) do not appear to match the hydrologic model schematic (32). Matching schematics will assist in HYMO model review.	The storm drainage plan and schematic have been reviewed and updated to reflect latest modelling.	We acknowledge that the model schematics and storm drainage plan have been updated, but there are still some questions that need verification, for example: 1. Sub-catchment 580, with an area of 1,870 ha, depicted in the VOH model schematic (DWG SWM 7, Volume 2 - Pg 28 of 1629) and in the Pond Weighted Imperviousness calculation (Pg 1397, Volume 2 report) as Draining to the SWM Pond 02. However, the Storm Drainage Plan (DWG STM-1, Pg 20 - Volume 2 report) indicates that this area drains to the HY 8 existing storm sewer and ultimately discharges to the Creek not to the SWM Pond 02. 2. Several sub-catchment IDs are not consistent between the VOH model Schematics (DWG SWM 7, Volume 2 - Pg 28 of 1629) and the Storm Drainage Plan (DWG STM-1, Pg 20 -report Vol 2), for example - 5682 ( DWG SWM 7) vs 568 ( DWG STM-1), 5082 vs 508, 5691 vs 569, 5092 vs 509, 5021 vs 502, 5202 vs 520, 5752 vs 575, 2582 vs 528, 6222 vs 622, 6232 vs 623, 6102 vs 610, 6202 vs 620, 6212 vs 621. 3. The area of Subcatchment 619 is not consistent between the VOH model Schematics, please see: (DWG No SWM 7, Vol 2 - Pg 28 of 1629) and the Storm Drainage Plan (DWG STM-1, Pg 20 - Volume 2); 0.25ha ( DWG SWM 7 versus 1.64ha( DWG STM-1). 4. The area of Subcatchment 620/620 is not consistent between the VOH model Schematics, please see (DWG SWM 7, Vol 2 - pg. 28 of 1629) and the Storm Drainage Plan (DWG STM-1, Pg 20 -Volume 2); 1.28ha versus 1.26ha. 5. Several sub-catchments are not part of the model but are shown on the Storm Drainage Plan (DWG STM-1, Pg 20 -report Vol 2). We suggest removing them from the Storm Drainage Plan (DWG STM-1, Pg 20 -Volume 2). For example these are : Catchment - 501,501,602, & 603. 6. We acknowledge that the VOH model, relevant calculations and reports accordingly.	1. An existing ditch on north side of highway 8 directs flows from catchment 580 into pond, as such to be conservative this area has been assumed to be conveyed to the pond. It is anticipated that this will be maintained when Hwy 8 is reconstructed. 2. Naming of the sub-catchments will be revised a part of a future submission. 3. The area in the schematic was a typo, the 1.64 ha on the drainage plan was included in the VO model. 4. The area in the schematic was a typo, the 1.26 ha on the drainage plan was included in the VO model. 5. The drainage area plan can be revised as part of a future submission to exclude lands located outside of Block 1. 6. Materials will be updated as required.	UT to better describe accommodation of area 580. Add not to drainage plan to reduce confusion.	Acknowledged - This will be addressed during the detailed design phase.	
10	CITY/EXP	Vol 2	23	STMMH101 headwall should not be in the proposed channel. Outlet elevation should be above the creek's 2-year design water level.	The headwall has been moved back into the bank and the 2yr water surface elevation is contained in the low flow channel. Therefore, the pond outlet elevation is above the 2 yr WSEL.	1. We acknowledge that the headwall has been moved back to the bank of the creek to keep the pond outlet above the Creek 2-year WSEL. Please show 2-year creek WSEL on Drawing SWM Pond Sections Facility 1 ( DWG SWM-2, Volume - Pg 23) 2. Please show 2-year creek WSEL on Drawing SWM Pond Sections Facility 3 - DWG SWM-6 ( Volume 2 - Pg 27)	We will provide 2 year water surface elevations on the requested drawings.	Acknowledged		
11	CITY/EXP	Vol 2	23	More detail is required on the splitter structure of unlabeled MH before STM.HW1 and STM.HW1A. Please clarify how the major flows will be diverted at STM.MH27 to the pond main cell.	The hydraulics of the flow splitting manhole will be determined at the detailed design stage.	NOTED - Comments will be address during detail design				
12	CITY/EXP	Vol 2	22	Confirm contributing drainage areas listed in Table 6-7 against Vol. 1 pg. 66.	The areas in Table 6-8, formerly Table 6-7, are based on the drainage areas on STM-3. The calculation behind this table is provided in Appendix G.	1. Please note that calculations were provided in Appendix H, not in Appendix G. 2. Inconsistency - Sub-catchment 580, with an area of 1,870 ha, is depicted in the VOH model schematic (DWG SWM 7, Vol 2 - Page 28) and in the Pond Weighted Imperviousness calculation (Pg 1397, Vol 2 report) as draining into the SWM Pond 02. However, the Storm Drainage Plan (Drawing STM-1, Pg 20 - Vol 2 report) indicates that it drains to the HY 8 existing storm sewer and ultimately discharges to the Creek WC-5. Please update relevant area including model and report.	1. Apologies for providing the wrong Appendix name in the responses, references to Appendix H had been updated in the BSS1 report. 2. Please refer to response to comment 9, item 1.	Acknowledged		
13	CITY/EXP	Vol 2	24	The PP Elevation in table is not consistent with the pond sections (pg. 25 - 31).	Table 6-12 has been updated to include the elevation and the provided volume, storage volume is provided in m3.	1. Table 6-12 represents "WC5 Existing and Proposed Flows" and does not include "elevation and volume". 2. Alternatively, we found Table 6-9, which represents flow and the required and provided storage volume for different storm events. 3. We couldn't locate any mention of Permanent Pool Elevation (PPE) in the main body of the report ( Volume 1 ), apart from its depiction in the Pond section drawings (SWM -2, SWM -4 & SWM-6, Volume 2 ) 4. We suggest include a stage-discharge curve, along with the PPE, for each pond within main body of the report	1. Noted. 2. Noted. 3. Table 6-9 will be revised to include the permanent pool elevation. 4. Table 6-9 provides the proposed outflow, provided storage and elevation for each of the storm events. The outlet design for the ponds will be provided as part of the draft plan and detailed design process.	Acknowledged		
14	CITY/EXP	Vol 2	24	Review the drop across inverts in all proposed MHs.	Precise manhole invert drops will be resolved at detailed design.	NOTED - Comments will be address during detail design				
15	CITY/EXP	Vol 2	25	Is it possible to remove STM.MH26?	Precise manhole will be resolved at detailed design.	NOTED - Comments will be address during detail design				
16	CITY/EXP	Vol 2	25, 27	Maintenance access roads are required to provide access to all inlet and outlet structures, and the base of the forebay. Where feasible, two access points to the road allowance are required with a looped access road.	Acknowledged - detailed design.	NOTED - Comments will be address during detail design				
17	CITY/EXP	Vol 2	26	The 100-year WSE of the channel is ~87.61 (pg. 23). The Permanent Pool (PP) elevation is 87.10m. The outfall of the pond and PP elevation needs to be reviewed to ensure backwater from channel does not hinder the function of the SWM Facility. The Permanent Pool elevation should be above the creek 100yr water level.	This matter is to be addressed in conjunction with items 2 and 10 above. It is recommended that impacts of tailwater be ignored in the design of hydraulic control structures.	Please see response of comment number 2 above	SH owes samples	Please see response of comment number 2 above		
18	CITY/EXP	Vol 2	26	Groundwater elevations should be shown on cross sections.	Groundwater elevations have been shown on cross sections. Detailed investigations and channel liner design will be undertaken at detailed design.	Please see response of comment number 2 above	1. Requirements for liners (if determined to be required by the hydro g consultant) will be determined through the draft plan and detailed design process. We are not advocating for a liner at this time. See qualification to this response below.	Acknowledged - This will be addressed during the detailed design phase.		
19	CITY/EXP	Vol 2	26	Review fill and slopes behind the headwalls shown in sections for all SWM Facilities.	Cross sections have been updated to correctly show slopes behind headwalls.	RESOLVED				
20	CITY/EXP	Vol 2	28	The 100 year WSE of the channel is ~87.57m. The Permanent Pool (PP) elevation is 86.0m. The outfall of the pond and PP elevation needs to be reviewed to ensure backwater from channel does not hinder the function of the SWM Facility. The Permanent Pool elevation should be above the	Discussed above.	Please see response of comment number 2 above	Please see responses to comment 2.		Please see response of comment number 2 above	
21	CITY/EXP	Vol 2	29	An easement will be required for emergency overland flow route.	Acknowledged.	NOTED - Comments will be address during detail design				



Study Report: Block 1 Servicing Strategy (1st Draft): Fruitland - Winona Secondary Plan, Block 1, prepared by Urbantech for the City of Hamilton and Hamilton Conservation Authority, First Submission dated May 2022				Second Submission dated May 2024				Compliance with the TOR (to support or modify the June 21st & July 2nd comments)	
STORMWATER MANAGEMENT + SWM MODELLING + WATER BALANCE + LIDS									
ID	COMMENT	REPORT	REFERENCE	COMMENT / RESPONSE	Consultant's Team Response / April 2024		Urbantech	EXPI/COH verification/acceptance (Sept. 12, 2024)	
No.	BY	Volume/Appendix	Page/Section/Tab/e Drawing/Figure	Comments / October 7, 2022	Consultant's Team Response / Date	City / EXP Comments / May 31, 2024	Urbantech Response / June 20, 2024	To Dos 7-2-24	Post June 21st & July 2nd Review
22	CITY/EXP	Vol 2	25, 27	Review the size of the pond outlet pipe (DWG SWM-1: pond outlet 975mm & DWG SWM-3: pond outlet 750mm)	The correct pipe outlet sizes are shown on drawings SWM-1 and SWM-3.	1. For SWM 2, we suggest further verifying the size of the proposed 750mm pipe. The full flow capacity of the proposed 750mm pipe seems to be significantly larger than the maximum discharge rate from the pond, which is 0.328 cms.	The 750mm pipe is the proposed "mechanical spillway" and is sized to be 3 times the size of the 100 year flow. This is consistent with other project requirements from the City of Hamilton.	MH	Acknowledged
23	CITY/EXP	Vol 2	35	Review alignment of 1350mm to make HW2 orientation better.	Acknowledged - detailed design.	NOTED - Comments will be address during detail design			
24	CITY/EXP	Vol 2	36	Confirm STM pipe sizes against STM Sewer Design Sheet (pg. 2599). STM between MH15-MH16 for example.	Pipe sizes have been updated such that the storm sheet matches the drawings.	We acknowledge but please verify "Storm Sewer Design Sheet" for the following: 1. Street B, from 571.3 to MH15 - storm 675mm @ 0.50% and MH15 to MH16 storm 675mm @ 0.50% - (deviates from Storm Drainage Plan- DWG-STM-2). 2. Pond 1 Inlet, M27 to MH28, MH 28 - HW1A (inconsistent with Storm Drainage Plan- DWG-STM-2). 3. Street D - storm sewer sizing calculation is missing in sewer design sheet. 4. Please ensure there is no drainage contribution from existing parkland to the proposed Street C storm sewers. 5. Barton Street, MH 51 to MH 52 (it's unclear why a twin 750mm at 0.35% is proposed). Please review, we believe a single 900mm at 0.35% slope is adequate for conveying 5-year flow. 6. Jones Road, MH 60 to MH 61 (catchment area ID is absent in Design sheet- area 6.77 ha). 7. Gordon Dean Ave, MH 61 to MH 62 - (catchment area ID is missing Design sheet - area 5.30ha). Also, verify the runoff coefficient, the design sheet and drainage plan are inconsistent: 0.73 vs. 0.75. Can we avoid using elliptical pipes? 8. Gordon Dean Ave, MH 62 to MH 63 - Can we refrain from using elliptical pipes? 9. Please verify the runoff coefficient for the storm sewer serving Pond 2 outlet (from MH225 to MH4 via Culvert). The runoff coefficients for CBS74 and CBS26 appear inconsistent with the drainage plan STM-2 (0.75 vs 0.64, as stated on page 21, Volume 2). Additionally, include the 100-year control flow from Pond 2 when sizing the Barton Street storm. Currently, the 100-year control flows from Pond 2 are not included for sizing the Barton Street storm. Please provide a breakdown of the storm sewer leg from MH225 to MH3 to the Culvert.	Acknowledged, the storm sheet will be reviewed and updated as part of a future submission.	Acknowledged - This will be addressed during the detailed design phase.	
25	CITY/EXP	Vol 2	38	Confirm why the alignment of proposed WC-5 culvert under Barton does not match the existing stream alignment.	No improvements are proposed for the Barton Culvert at WCS at this time. The future culvert has been shown	NOTED - Comments will be address during detail design			
26	CITY/EXP	Vol 2	39	Refer to comment on page 38. STM between MH51 and MH52 shown as twin 600mm. Design sheet shows 900mm. Confirm all pipes and update the design sheet.	Pipe sizes have been updated such that the storm sheet matches the drawings.	Please see response of comment number 24 above	Please see responses to comment 24.		Please see response of comment number 24 above
27	CITY/EXP	Vol 2	40	Review hydraulics of invert/cover matching at STM.MH61.	There is a drop in the sewer profile. This will be optimized at detailed design.	NOTED - Comments will be address during detail design			
28	CITY/EXP	Vol 2	41	Barton Street- upsized storm sewer is not shown in a profile or calculations found for upsizing.	We do not understand this comment.	By referring to the Barton Street storm sewer upsizing, we actually meant the twin 750mm pipe between MH51 and MH52. Please see our response in Comment 24 (# 5)	Please see responses to comment 24.		Please see response of comment number 24 above
29	CITY/EXP	2016-2018 Comments		Continue to be reviewed in further submissions to address all relevant items.		RENATA			
30	CITY/EXP	Vol 1	Section 2.2.1 WC 5, page 22	A Manning's n value of 0.04 was used for main low flow channel along the length of the proposed realigned channel. Please justify use of the Manning's value. We recommend that appropriate Manning's roughness coefficients considering overgrown vegetation should be used for the channel modelling. Please also mention the type of flow regime used for HEC-RAS model analysis.	A Manning's of 0.035 was used in accordance the MTO Drainage Management Manual Design Chart 2.01 for an unlined open channel - earth, fairly uniform section with grass, some weeds or dense weeds. A higher Manning's n of 0.08 was used for the overbank to account for future growth which is consistent with the Chart's proposed Manning's for medium to dense vegetation in floodplains adjacent to streams. These values are consistent with the parameters used in the SCUBO modelling provided by the City.	RESOLVED			
31	CITY/EXP	Vol 1	Section 6.2, Page 43 Existing Conditions	It is mentioned that the existing drainage for all three watercourses is illustrated on Drawing STM-1; please provide a table listing catchment area parameters (Catchment ID, areas, LGI, LGP, % imp, Top etc.) of WCS, WCS 2 and WC 6 for catchment illustrated in Drawing STM-1 and also Drawing SWM 7 (Hydrologic Model Schematic, Existing SWM).	A table summarizing all the channel parameters has been added to Appendix G.	1. Most of the comment have been addressed 2. Additional Comments: Please verify the VOH model - Sub-catchment 580, with an area of 1.870 ha, is depicted in the VOH model schematic (DWG SWM 7, Volm 2 - Pg 28) and in the Pond 2 Weighted Imperviousness calculation (Pg 1397, Volm2 report) as draining to the SWM Pond 02. However, the Storm Drainage Plan (DWG STM-1, Pg 20 - Volm 2) indicates that these area drains along HY 8 existing storm sewer and ultimately discharges to the Creek. 3. Please update the model/report and Pond 2 design accordingly	Please refer to response to comment 9, item 1.		Please see response of comment number 9 above
32	CITY/EXP	Vol 1	Section 6.3, page 45 Existing Land Use	Please justify the use of Upland method for time to peak calculations.	Upland method is one of the common methods used for calculating time to peak and is included in the V06 manual and calculates Tp based on catchment slope and ground type. As the City of Hamilton guidelines do not specify a required method for time to peak calculations this method was used as it takes into account the varying land uses within the block as well as the elevation changes due to the	RESOLVED			
33	CITY/EXP	Vol 1	Section 6.4 Proposed Land use, on page 46	It is mentioned that Drawing STM-3 illustrate the total area for the contributing catchments to each SWM pond; please show the drainage boundary of each pond with a legend for pond/drainage boundary on the same plan.	Drawing STM-3 has been updated.	RESOLVED			
34	CITY/EXP	Vol 1	Section 6.5.1, Land East of WCS, on page 47	It is mentioned that SWM ponds 1 and 2 have been sized to over-control the pond discharge flows to accommodate uncontrolled areas; please provide justification why some of areas (catchments 508 and 569) can't be serviced by the pond 1 and don't require onsite SWM. Uncontrolled areas 570 and 567 mentioned in this section are not shown on Drawing STM-3. Areas that can't be serviced by the ponds, an adequate outlet including onsite quantity (allowable release rate, required storage volume) and quality control criteria for each drainage block should be determined and included in the report.	Area 569 is a park block, as such no onsite controls are proposed. Catchment 508 area has been revised to direct all feasible drainage to the pond, the entire catchment is not able to be directed to the pond due to grading constraints. As 508 consists of existing home frontages on Fruitland Road that would not be developed, as one block, no one site storage is proposed.	While we understand that Catchment 508's area has been revised to direct all feasible drainage to the pond, but it is not consist with model/pond design. Sub-catchment 580, with an area of 1.870 ha, depicted in the VOH model schematic (DWG SWM 7, Volume 2 - Pg 28 of 1629) and in the Pond Weighted Imperviousness calculation (Pg 1397, Volume 2 report) as Draining to the SWM Pond 02. However, the Storm Drainage Plan (DWG STM-1, Page 20 - Volume 2 report) indicates that this area drains to the HY 8 existing storm sewer and ultimately discharges to the Creek not to the SWM Pond 02.	Please refer to response to comment 9, item 1.		Please see response of comment number 9 above
35	CITY/EXP	Vol 1	Table 6-11, page 61	Please review and confirm the unit of required storage volume in the table. This table should include total target release rate, ponding elevation for all storm events and provided volume. Inverts of the ponds should be included in the table.	Table 6-12 has been updated to include the elevation and the provided volume, storage volume is provided in m3.	RESOLVED			
36	CITY/EXP	Vol 1	Table 6-12, page 62	Provided total volumes and corresponding WS elevations should be included in the Table. Please mention the total area and flows that have been used for unit release rate calculations for each pond.	Total volumes and WS elevations are have been included in Table 6-12. Table 6-13, formally Table 6-12, has been revised to include the total area and flows used in the unit calculations.	RESOLVED			
37	CITY/EXP	Vol 2	Appendix H1	Storm Sewer Design Sheet, digital page 2601 - the design sheet show total area to HW3 is 14.44ha, however drainage area to HW3 is 14.64ha as per Drawing STM-4 (Storm Drainage Plan Minor System for pipe sizing). Please review and confirm that drainage areas in the design sheet are consistent with the drainage areas on Drawing STM-4. The design sheet should include drainage ID as shown in the Drawing STM-4	The design sheets and drainage plans have been reviewed and updated. Drainage IDs have been added to the storm design sheet.	Please see response of comment number 24 above			Please see response of comment number 24 above
38	CITY/EXP	Vol 2	Appendix H6	SWM Pond Calculations: a. Please clarify how the provided decanting area volumes (923m3 for pond 1, 600 m3 for pond 2 and 435m3 for pond 3 shown on digital page 2630, 2633 and 2636, respectively) have been calculated.	Acknowledged. Will be addressed at draft plan approval.	NOTED - Comments will be address during draft plan approval			
39	CITY/EXP	Vol 2		b. Pond design calculations on digital page 2626, 2631 and 2634 show a more than forebay should not exceed one-third of pond surface area; however no information has been provided; please provide calculations for percentage of forebay area to permanent pool area and forebay volume to permanent pool volume as per MECP criteria (maximum forebay area: 33% of total permanent pool, maximum forebay volume: 20% of total permanent pool).	Acknowledged. Will be addressed at draft plan approval.	NOTED - Comments will be address during draft plan approval			
40	CITY/EXP	Vol 1 & Vol 2		c. Pond drainage area shown on the digital pages 2628, 2631 and 2634 are not consistent with the drainage area shown on Table 6-4, page 46 and total drainage areas to HW as in the Storm Sewer Design Sheet.	Acknowledged. Will be addressed at draft plan approval.	NOTED - Comments will be address during draft plan approval			
41	CITY/EXP			d. Please also provide calculation for minimum forebay bottom width as per MECP criteria.	Acknowledged. Will be addressed at draft plan approval.	NOTED - Comments will be address during draft plan approval			
42	CITY/EXP			e. A velocity check should be made using the entire forebay cross-sectional area to ensure that the average velocity in the forebay is less than, or equal to, 0.15 m/s which is empirically recognized as the maximum permissible velocity before which erosion will occur in a channel. (MOECC, 2003).	Acknowledged. Will be addressed at draft plan approval.	NOTED - Comments will be address during draft plan approval			
43	CITY/EXP	Vol 2		f. Pond Weighted Imperviousness: The table on digital page 2625 shows area of Catchment 568 is 1.86 ha will drain to Pond 2, however Drawing STM-3 show the drainage area is 0.53ha which drains to the WCS; please clarify.	568 has been renamed area 580 on STM-3. The pond weighted impervious table has been updated accordingly.	1. Not clear - Sub-catchment 580, with an area of 1.870 ha, is depicted in the VOH model schematic (DWG SWM 7, Volm 2 - Page 28) and in the Pond Weighted Imperviousness calculation (Pg 1397, Volm2) as draining to SWM pond 02. However, the Storm Drainage Plan (DWG STM-1, Page 20 - Volm 2) indicates that it drains along HY 8 existing storm sewer and ultimately discharges to the Creek not to the SWM pond 02. 2. Please update the Model/report and Pond 2 design accordingly	Please refer to response to comment 9, item 1.		Please see response of comment number 9 above
	CITY/EXP		Drawing STM-3	<b>Storm Drainage Plan, for Hydrologic Model:</b>					

Study Report: Block 1 Servicing Strategy (1st Draft): Fruitland - Winona Secondary Plan, Block 1, prepared by Urbantech for the City of Hamilton and Hamilton Conservation Authority, First Submission dated May 2022				Second Submission dated May 2024		Compliance with the TOR (to support or modify the June 21st & July 2nd comments)			
STORMWATER MANAGEMENT + SWM MODELLING + WATER BALANCE + LIDS									
ID	COMMENT	REPORT	REFERENCE	COMMENT / RESPONSE	Consultant's Team Response / April 2024	Urbantech	EXPICOH verification/acceptance (Sept. 12, 2024)		
No.	BY	Volume/Appendix	Page/Section/Tab/e Drawing/Figure	Comments / October 7, 2022	Consultant's Team Response / Date	City / EXP Comments / May 31, 2024	Urbantech Response / June 20, 2024		
				To Dos 7-2-24	Post June 21st & July 2nd Review				
44	CITY/EXP			a. Please review and confirm appropriate channel location from constructability perspective so that there will be no impacts on the existing houses fronting Fruitland Road and existing building on Grand Olympia. Please note that Fruitland - Winona (SCUBE) Sub-watershed Master Plan recommends WC # 5 realignment from Steewood Park Dr to Barton St in order to gain some development land. However, Block Servicing study considers this realignment from existing culvert on Fruitland Rd to Barton St. Please review all applicable CA and Provincial AC/regulations including MECA document to determine the process to be followed for a realignment on multiple privately owned lands, and of those who are not participating in this Block Servicing study.	The block study recommends an optimal location for the channel, but does not address real estate implications to non-participating land owners or interim conditions needed to mitigate non-participants. Through draft planning, the extents to which the channel may be constructed and the final placement will be resolved by the land owners.	1. The proposed realignment of the WC#5 is highly dependent on consolidated land parcels. The landownership has not been fully addressed in the presentation of the creek realignment/floodplain management scenarios. In fact, the Consultant's response to COH/EXP comment #44 (SWM) indicates that this assessment is being deferred to future stages of approvals. In the previous consultations and comments, the CA/COH/EXP expressed their concerns related to the creek transitions from the proposed to existing conditions. Please demonstrate feasibility of the creek realignment under anticipated landownership scenarios, potential impacts on the existing properties along Fruitland Road (floodplain limits), as well as the potential impacts on the adjacent Block#1 lands and associated infrastructure. 2. Proposed Watercourse WC5 is shown crossing private property. Has the developer group obtained permission/ownership of the land where the WC5 corridor encroaches onto private property? If not, how can the watercourse be constructed? 3. Where the proposed WC5 corridor crosses private property, will an easement in favour of the City be provided? If ownership is required, and the developer group is unable to obtain ownership, then the proposed WC5 corridor alignment will have to be shifted to not encroach onto private property. 4. We recommend including a clear statement in the main body of the report to demonstrate that there are no adverse impacts on the existing GO property resulting from the realignment of Creek WC5 and the development of proposed Block 2. We suggest generating a cross-section along the Grand Olympia property and including this section within the HEC RAS model, integrating the realignment of Creek WC-5. This will clearly illustrate whether the GO property is affected by the realignment of WC-5 Creek or by the creek's 100-year high water level.	See response below.	HCA/City to comment.	
45	CITY/EXP			b. Please describe and justify the basis of delineating the boundary of each catchment area.	Drainage areas have been based on the anticipated grading and sewer plan for the block as well as unique land use due to variable runoff coefficients. Catchments will be delineated further during draft plan approval.	NOTED - Comments will be address during draft plan approval			
46	CITY/EXP			c. Pond 3 catchment area (catchment ID 626, area 0.53ha) is smaller than the pond footprint; please review.	Pond Catchment area has been updated.	RESOLVED			
47	CITY/EXP			d. The plan shows that drainage from upstream land will convey to pond 1 through private land downstream (Street C). Joint use agreement will be required to for the conveyance.	Street C will be dedicated as a public right of way along with a block for the pond outfall and overland flow route.	RESOLVED			
48	CITY/EXP			e. Pond locations should be consistent with the secondary plan	The secondary plan provides the general locations for the stormwater ponds. The block plan further refines the locations based on more detailed information including proposed drainage areas and detailed grading.	NOTED - Comments will be address during draft plan approval			
49	CITY/EXP	Vol 2	Drawing STM-4 (Pg. 23), SWM-6 (Pg. 30)	Storm Drainage Plan, for pipe sizing: As per the current design, 100yr ponding will extend to the storm sewer on Jones Road as 100year operating level at pond 3 is 87.50m; 100yr ponding should not extend to the storm sewer on Jones Road.	The hydraulic grade line imposed by the 100yr ponding level will flood out the upstream storm sewer. In support of detailed design the hydraulic grade line in the storm sewer will be studied in accordance with the City of Hamilton.	NOTED - Comments will be address during detail design			
50	CITY/EXP	Vol 2	Drawing SWM-1 (SWM Pond Plan - Facility 1, Pg. 25)	Plan shows pond access through private land (Street C); pond should be access through public land or an adequate easement will be required. Street C should have adequate capacity to convey 100 year uncontrolled overland flow to the pond 1.	The connection from Street C to the pond will be dedicated as a block along with a block for the pond outfall and overland flow route. It will be appropriately sized to contain the overland flow and municipal sewers, minimum 9m as	NOTED - Comments will be address during detail design			
51	CITY/EXP	Vol 2	Drawing SWM-1 (Pg. 25), SWM-3 (Pg. 27) & SWM-5 (Pg. 29) - SWM Pond Plan;	For adequate block and storm sewer to Pond 1, storm sewer avenue to Pond 2 and Jones Street to Pond 3 should be provided for storm sewer easement and overland flow conveyance. We require that at detail design stage, a total capture inlet will be considered at the low point of the immediate upstream of these blocks to capture 100yr flow, an easement for 100yr overland flow conveyance from the roads to the pond wet cells is still required. 100 year flows from all upstream drainage areas should be conveyed overland through road conveyance to the ponds; please confirm the road conveyance capacity for 100 year flow.	Appropriately sized blocks will be dedicated where needed to connect pond blocks to public right of way. This will be resolved at the draft plan stage.	NOTED - Comments will be address at the draft plan stage			
52	CITY/EXP		Drawings SWM-2 SWM-4 & SWM 6 (SWM Pond Sections)	a. As per City's current practice the top of pond perimeter berm elevation shall be established at a minimum 0.3 m above the maximum water elevation on the emergency spillway; please confirm. Further discussion is required for the proposed emergency spillway sizing.	Noted. A minimum 0.3m freeboard will be provided for the pond perimeter berm. This will be detailed at draft plan stage.	NOTED - Comments will be address at the draft plan stage			
53	CITY/EXP			b. Pond 2 should have a mechanical emergency spillway from the pond to receiving watercourse/outlet, as flooding on an arterial road (Barton street) is not permitted per City's	A mechanical spillway will be designed to convey 2 times the anticipated 100yr discharge from the pond.	Please see response of comment number 2 above	Please see responses to comment 2.		
54	CITY/EXP			c. Pond 3 outlet through other land to the east should be documented.	Land assembly as it relates to Pond 3 and its outlet will be addressed at the detailed design stage.	NOTED - Comments will be address during detail design			
55	CITY/EXP	Drawing - Property Boundaries		Please provide a drawing overlying pond boundary on the property fabric to identify the land from individual property required for the ponds.	Proposed design has been added to the land ownership drawing, Figure 4.	RESOLVED			
56	CITY/EXP		WCS	Maintenance access provisions are required throughout the length of the watercourse, and in particular at the pond outlet to the WC. The details of which are outlined in the City's Comprehensive development guidelines, and the reference documents contained within it. Serviceability can be addressed by provision of local roads to adequately service and/or not hinder future serviceability.	The watercourse design provides for an access road along the east side of the channel.	RESOLVED			
57	CITY/EXP			We confirmed that the approach should clarify that it is likely that a continuous maintenance/gravel access road to the watercourse will not likely be needed, but rather access and maintenance provisions at key points.	In conjunction with draft plan approval, the precise channel access points can be determined if the road is not to be continuous.	NOTED - Comments will be address at the draft plan stage			
58	CITY/EXP			Maintenance access provisions are required throughout the length of the watercourse, and in particular at the pond outlet to the WC. The details of which are outlined in the City's Comprehensive development guidelines, and the reference documents contained within it.	Addressed in item 56.	RESOLVED			
59	CITY/EXP			As per the City's requirements, serviceability of the local roads, public or private, should be addressed. A statement should be made in the report that requires to adequately service the properties without hindering future serviceability.	Consideration has been given to accommodate the servicing needs of all lands within the block.	Acknowledged. To be verified as per related comments.			
60	HCA			Confirmation of Agreement of Critical Properties to the Drainage and Stormwater Management Plans: The proposed stormwater management includes features and creek realignments on property not currently part of the land ownership group undertaking the Block 1 Block Servicing Study. This includes properties at the downstream end of the proposed development (near Barton Street), whose lack of participation may require significant alterations to the designs in the future. To be of optimal value, it should be confirmed that the land ownership group undertaking the Block 1 Block Servicing Study has consulted with key property owners and that agreement to the proposed drainage and stormwater management plans is expected.	The intent of the block plan is provide a comprehensive functional design of engineering works irrespective of real estate implementation obstacles. It is acknowledged that there are unresolved land assembly issues to be addressed at the draft plan and detailed design stages.		To be discussed w/city/HCA		
61	HCA			Requested Stacked Storm Assessments due to Prolonged Drawdown Times from Stormwater Management Ponds: The stormwater management pond drawdown times are significantly greater than guidelines. Additional assessment is requested of the potential impacts due to this prolonged drawdown period, using an assessment of stacked storms. Where the drawdown time exceeds 72 hours, HCA recommends to design stormwater management ponds for the 2-year stacked storm over the next 72 hours in addition to the 100-year storm.	Revised drawdown times based on orifice sizing have been included in the submission; drawdown times now range from 27-68 hours.				
62	HCA			Confirmation that Site Control is Viable in Identified Areas: Please confirm whether the stormwater management ponds designs have assumed controlled or uncontrolled runoff from the various Uncontrolled Development Areas. If controlled runoff has been assumed, it is requested that these areas be reviewed to assure the viability of providing onsite stormwater management.	Areas designated as uncontrolled have been modelled as such in the V06 modelling and the ponds have been sized to account for said uncontrolled flows.				
Hydrologic/Hydraulic Models									
63	CITY/EXP	OTTHYMO		More information is required on how reservoir stage-storage-discharge curves were developed.	During draft planning, the stage-storage discharge curves will be further refined based on detailed grading for the ponds as well as the use of orifices.	NOTED - Comments will be address at the draft plan stage			
64	CITY/EXP	OTTHYMO		The uncontrolled areas do not appear to be represented in the model.	All drainage areas shown on drawing STM-1 and STM-3 are within the V06 model.	Please see response of comment number 9 above	Please see response of comment number 9 above		
65	CITY/EXP	PCSWMM		Future submissions should demonstrate the performance of the ponds particularly the submerged inlet and splitter structures.	Acknowledged. Will be addressed at draft plan/detailed design.	NOTED - Comments will be address during draft plan/detail design			
66	CITY/EXP	Table 2-2, Table 2-5, Table 2-7 and Table 2-9		Please include Node numbers from Hydrologic model for corresponding Flow Node locations in respective tables.	Tables 2-2 and 2-3 have been updated to include the NHYD numbers from the hydrology modelling.	RESOLVED			
67	CITY/EXP	Appendix G		Hydrologic and Hydraulic Analysis: Please provide HEC-RAS model geometric data schematic in this appendix.	HECRAS cross sections have been included in Appendix G.	Acknowledged. The effort and use of the SCUBE model is also recognized. To allow for completion of our review, please refer to the high-level and other related comments.			
68	HCA			Request for the Report to include Model Development, Parameterization & Calibration Details: A new hydrologic model was developed for the Block 1 assessment, in order to support the design. It is asked that the report provide full details regarding this modeling, including model development information, catchment parameterization, and model calibration.	The approved SCUBE hydrology modelling was received on January 9th 2023 which was used to support the design as approved with the City. The model was updated to reflect the Block 1 conditions.	We acknowledge current updates and change in the modelling approach.	UT to provide parameters per last meeting.		
69	HCA			Comparison of Peak Flows to the SCUBE Subwatershed Study & Block 2 Study: As part of additional model validation, it is requested that a comparison be included of peak flows and flood levels at key locations between the current study versus SCUBE Subwatershed Study (Aqualor Beech 2013) and Block 2 Study (Aqualor Beech 2016).	The approved SCUBE hydrology modelling was received on January 9th 2023 which was used to support the design as approved with the City. The model was updated to reflect the Block 1 conditions.				
70	HCA			Justification for Unexpected Findings Related to Peak Flow Changes: Please provide justification for the following unexpected findings related to peak flow changes:					
71	HCA			a. For Watercourse 5 – There was a much larger increase in peaks flows between Barton Street and Arvin Avenue, compared to between Fruitland Road and Barton Street.	The approved SCUBE hydrology modelling was received on January 9th 2023 which was used to support the design.				
72	HCA			b. For Watercourse 6 – There was a much larger increase in peaks flows between Barton Street and CPR, compared to between Highway 8 and Barton Street.	The approved SCUBE hydrology modelling was received on January 9th 2023 which was used to support the design.				
73	HCA			Final Hydrology and Hydraulics Modelling Files to be Provided: Once the study is completed, please provide a digital copy of the finalized versions of all modelling files, including output files, for future reference.	Modelling files have been provided as part of the submission.				
Onsite Water Balance + LIDs									

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STORMWATER MANAGEMENT + SWM MODELLING + WATER BALANCE + LIDs									
ID	COMMENT	REPORT	REFERENCE	COMMENT / RESPONSE	Consultant's Team Response / April 2024	Urbantech	EXPICOH verification/acceptance (Sept. 12, 2024)		
No.	BY	Volume/Appendix	Page/Section/Table Drawing/Figure	Comments / October 7, 2022	Consultant's Team Response / Date	City / EXP Comments / May 31, 2024	Urbantech Response / June 20, 2024	To Dos 7-2-24	Post June 21st & July 2nd Review
74	CITY/EXP		Sec. 6.9	Report refers to the infiltration deficit between the pre- and post-development (without mitigation measures) as 160,986 m3/yr. It is not clear how and where on site this water volume is to be mitigated. Please address.	LIDs will be implemented at the individual site or subdivision level and will be addressed at draft plan.	The infiltration deficit between the pre- and post-development stages (without mitigation measures) is noted as 160,986 m3/yr. We acknowledge that this issue will be addressed during the detailed design of the subdivision. However, we suggest including a paragraph in the main body of the report detailing the applicable Low Impact Development (LID) features that may be considered during the detailed design to mitigate the deficit volume of 160,986 m3/yr. Additionally, outline any constraints, such as high groundwater elevation or in-situ soil permeability, that may hinder from compensating for the deficit water balance volume.	Section 6.8.2 of the BSS outlines possible LID features that could be implemented. As referenced in this section of the report, Drawing LID-1 shows portions of the property where infiltration will not be feasible due to high groundwater.	Retention vs infiltration. Best efforts in infiltration. Applicability of practices. Filtration and retention in lieu of infiltration.	Acknowledged. However, we anticipate that more details will be provided during the detailed design phase.
75	HCA			Incorporation of LID measures should be considered in greater detail at the time of development of individual blocks/sites.	Acknowledged. Will be addressed at draft plan/detailed design.				
76	HCA			For areas which are unable to be serviced by the three Stormwater Management ponds, lot-level source controls are proposed to be used to provide the necessary water quality, erosion and flood control. The SCUBE Subwatershed Study also made recommendation for LID BMPs to be considered in a future Servicing Assessment. Section 8.6.2.1 details the recommended LID BMPs to be considered implemented during the next stage of design. It is recommended that groundwater levels be monitored during the pre-construction and construction periods, given the potential for groundwater levels to be higher than those recorded previously. Higher groundwater levels would potentially have an impact on water balance, infiltration, LID design, building/foundation construction, etc. Also, this monitoring will assess the amount of natural seasonal fluctuation and the effect of construction on the groundwater levels at the property. During construction, it is recommended that any dewatering required for construction of basements or utility trenches be measured in order to assess the effect of dewatering.	Appropriate groundwater and geotechnical reporting will be undertaken in support of draft plan design.				
77	CITY/EXP		Table 6-10, Table 6-11		Erosion Control -SCUBA Target 1. Referring to Table 6-10 of the report (Volume 1), for Pond 1: The erosion control rate of 0.70 L/ha exceeded the SCUBA Target Rate of 0.60 L/ha. Please review. 2. Referring to Table 6-10 of the report (Volume 1), for Pond 3: The 100-year release rate of 43.60 L/ha exceeded the SCUBA Target Rate of 40.60 L/ha. Please review. 3. Also, please check the numbers in Table 6-11 of the same report. For example, in Table 6-10, for Pond 1, the SCUBA Target for Erosion Control is stated as 0.60 L/ha for an area of 34.26 ha, which equals 20.56 L/sec. However, Table 6-11 shows 25 L/sec. Please review.	1. The erosion threshold was established based on a site specific erosion assessment undertaken by GEO Morphix as required by the City, refer to BSS report section 6.7.3.2. 2. This is correct, as also shown in this table a significantly smaller area is being directed to Pond 3. Additionally, as shown in table 6-11 the release rate from Pond 3 is 415 L/s less than SCUBE, and modelling indicated no change in downstream flows as a result. 3. All for the SCUBE values for L/Sha, m3/ha, L/s and m3 in Table 6-11, were copied directly from SCUBE Table 5-2.	UT to document SCUBE math matter for bullet 3. Asterix at table. We not relying on SCUBE anyways.	Acknowledged. However, we expect that a more detailed explanation will be provided during the detailed design phase.	
78	CITY/EXP		Section 6.5.4		In Section 6.5.4 of Volume 1, it is stated that "... 1) a 0.90x1.80 culvert that will outlet towards WC6. 2) A new twin 600mm storm sewer on Barton Street that also outlets to WC6. ...". However, upon reviewing the drainage plan (DWG STM-2, Pg 19, Volm 2) and the Storm Sewer Design Sheet (Pa 1393, Volume 2), we did not find the above-mentioned culverts or sewers.	The materials will be reviewed and updated.			Acknowledged.
79	CITY/EXP		Table 6-9		There is a discrepancy between the main body of the report and the drawings. For instance, in Table 6.9 of the report, for Pond 1, the 100-year water level is stated as 88.72m, whereas in DWG SWM-2, it is 88.50m. Similarly, for Pond 2, the 100-year water level is listed as 87.32m in the report, but in DWG SWM-4, it is 87.50m. Additionally, for Pond 3, the 100-year water level is indicated as 87.28m in the report, while in DWG SWM-6, it is 87.50m.	The materials will be reviewed and updated.			Acknowledged.
ISSUE/Discussion									
80				Channel Liner.		References to a channel lining will be removed from the BSS. The final channel design will be reviewed with the project soils engineer as it relates to groundwater interaction.			Acknowledged.
81				New Item Drainage Area 610-HCA		Area 610 from SCUBE has been found to concentrate south of Barton Street as opposed to the CNR. This is based on an Urbantech Review of existing drainage patterns and infrastructure. This amendment to SCUBE has been presented in the BSS modeling.			Acknowledged.
82				Parameterization Tables-HCA		Urbantech agreed to provide parameterization tables of the entire SCUBE model where BSS1 is located. This will provide for easier review by future plan reviewers.			Acknowledged.
83				Future Studies. Table. HCA/City		HCA requested that a table be included in the BSS of "future studies". It has been acknowledged that during draft plan and design approvals, refinements to current studies or new studies may be needed to support draft plans. Urbantech agreed to including a table in BSS1 outlining future studies. This will be added to Section 8.			Acknowledged.
84				FP-3 -review drop at street B, coordinate with Geomorphix. City		City Requested that UT review the profile of WCS with GEO Morphix with a view to removing an abrupt elevation change up of Street B. Urbantech to resolve with GEO Morphix.			Acknowledged.
85				FP-4 / Fluvial-flows-City		UT to coordinate with GEO Morphix about channel built in shale. City identified a concern about transition between over burden and shale. Urbantech will discuss this matter with Geomorphix and update the BSS findings if necessary.			Acknowledged.
86				This is a continuation of item 44 above. Both City and HCA reinforced concerns about the implementation of the WCS improvements as it relates to real estate. HCA expressed a concern about permitting logistics and the desire to permit the creek improvements in meaningful sections.		The owners acknowledge that there are real estate obstacles to implementing the entire channelization from Barton to Fruitland. These obstacles are: - Grand Olympia - Holdouts North of Street B where natural Channel may need to be maintained, and - South of the Benemar lands to Fruitland Road. It is proposed to update the implementation portion of the Study to present a fall back conceptual design in the event that real estate matters cannot be over come as follows: - Do-nothing or a piped approach within the Grand Olympia lands. These will be considered interim - A design concept to install the permanent works from the City lands to the south of Benemar with the integration of the existing condition in the vicinity of the holdout. This will accomplish permanent improvement for 60% of the creek improvements between Barton and Fruitland which is a meaningful amount of the Creek to permit per HCA interests. In support of draft plan approvals, the minugia of the above fall back works will be fully detailed including needed changes to land plans and hydraulics of the creek. The owners acknowledge that it is their responsibility to assemble the lands needed for the complete channelization and that the channel location may need to be moved to lands controlled by the developers. Land assembly will play itself out over time and draft plans will be developed that speak to the real estate realities.	MH	Review/address in the context of all applicable comments (floodplain management, grading/servicing, fluvial-geomorphology)	
87									
88									A phasing and implementation plan to be developed.

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FLOODPLAIN MANAGEMENT + HYDRAULIC MODELS + HYDRAULIC CAPACITY OF THE CREEK CROSSINGS									
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1	City / EXP	Vol 2	10	Channel Sections. Channel sections should also include existing structures.	Existing structures have been added to channel sections	Existing structures are NOT in the existing and proposed run. Only in ultimate and "with ponds" model.	Please note that the existing and proposed "rip" scenario is to determine riparian storage which is calculated with no structures were included in the modelling.	add readme files for clarity about scenarios	
2	City / EXP	Vol 2	12	Existing structures should be added to the exhibits.	Existing structures have been added to FP-1 and FP-2				
3	City / EXP			Fluvial geomorphology review to be addressed prior to final approval of the floodplain modifications.	Acknowledged.				
4	City / EXP	2016-2018 Comments	2730	Previous Comment 2. Any culvert crossing Barton Street needs to be designed with the emergency overflow from the ponds in mind. Should these weirs activate, they should not flow over Barton Street.	Culvert crossings are not proposed. The future culvert at the proposed channel has been sized to convey the 100 yr storm without pressurization. At detailed design and in consultation with the City, the culvert size can be modified to convey additional flows	* The ultimate model shows Barton overtopping in a 5 year. * With ponds does not seem to overtop. * No EX or PR structures.	Acknowledged.		
5	City / EXP	HEC-RAS Model		In future submissions, please provide the surface that the XS were cut from and the floodlines are mapped against to assist in review.	Terrain files for the existing and proposed condition for Block 1. Cross sections for the lands outside of Block 1 have not been modified from the SCUBE model as it is the best available	No "terrain" or inundation polygons provided.	Apologies, this can be provided.		
6	City / EXP	HEC-RAS Model	EX conditions (WC05)	Review XS1439.675. Confirm that there is a levee/high point at 117.26m. Confirm if topography supports high point.	Topography has been reviewed and highpoint has been removed.	Acknowledged.			
7	City / EXP	HEC-RAS Model	EX conditions (WC05)	XS1320.692 does not appear to represent the parking lot or building at Grand Olympia. Confirm the topography.	Topography has been reviewed and cross section elevations shown is consistent with survey for the area.	Acknowledged.			
8	City / EXP	HEC-RAS Model	EX conditions	Most cross sections have levees. Review their function and remove if they are not necessary.	All cross sections outside of Block 1 were from the SCUBE model and are considered to be the best available information/approach for those cross sections. Cross sections within Block 1 have been reviewed and modified.	* Still many XS with levees. Particularly where the XS do not contain the floodplain.	Levees have been included where there are spots with high points to ensure that the water does not show flooding in adjacent areas prior to overtopping the high point. No changes were made to the modelling outside of Block 1.	use term ineffective flow. Levees mean ineffective flows. This is not official FP mapping which will eventually correct modeling techniques. This applies to WC6.	
9	City / EXP	HEC-RAS Model	EX conditions (WC05)	XS918.3739 - XS518.7136 do not contain the 100 year Water Surface Elevation (WSE). Consider extending cross section to contain floodplain per HEC-RAS manual.	The cross sections are located outside of Block 1 and were developed as part of SCUBE. If the SCUBE terrain file were to be provided the the cross sections could be extended.	See comment 8.	This cross section is located outside of Block 1, as indicated in the meeting on June 10, HCA does not expect Urbantech to update the modelling outside of Block 1.		
10	City / EXP	HEC-RAS Model	EX conditions (WC05)	Review the Junction at QEW:J1. XS170 does not contain the WSE.	The cross sections are located outside of Block 1 and were developed as part of SCUBE. If the SCUBE terrain file were to be provided the the cross sections could be extended.	See comment 8.	Refer to response to comment 9.		
11	City / EXP	HEC-RAS Model	EX conditions (WC06)	Confirm the need for a levee in XS2096.869.	The cross sections are located outside of Block 1 and were developed as part of SCUBE. If the SCUBE terrain file were to be provided the the cross sections could be extended.	Response does not address comment.	Within WC6 only where there are spots with high points to ensure that the water does not show flooding in adjacent areas prior to overtopping the high point. No changes were made to the modelling outside of Block 1.		
12	City / EXP	HEC-RAS Model	EX conditions (WC06)	Were the cross points in this reach "cleaned"? The XS geometry appear to be very simple. For example, in XS1785.033 there is a 40m section that is flat which is unlikely in a wooded section. Please confirm geometry against surface.	The cross sections are located outside of Block 1 and were developed as part of SCUBE. If the SCUBE terrain file were to be provided the the cross sections could be extended.	Response does not address comment.	Cross section was not cleaned and was developed based on available topography, the cross section has been revised such that the flat spot is not included.		
13	City / EXP	HEC-RAS Model	EX conditions (WC06)	Review or justify the levees in XS1501.817.	The cross sections are located outside of Block 1 and were developed as part of SCUBE. If the SCUBE terrain file were to be provided the the cross sections could be extended.	Response does not address comment.	Refer to response to comment 9.		
14	City / EXP	HEC-RAS Model	EX conditions (WC06)	Confirm the building in XS1501.817 is flooded in the 100year. Are there any other structures that see repetitive flooding and are these being mitigated?	The cross sections are located outside of Block 1 and were developed as part of SCUBE. If the SCUBE terrain file were to be provided the the cross sections could be extended.	Response does not address comment.	Refer to response to comment 9.		
15	City / EXP	HEC-RAS Model	EX conditions (WC06)	There are two (2) ninety degree bends in the channel between XS1334.030 and XS1037.318. The downstream overbank reach lengths do not appear to account for the bends. Consider adjusting or adding XS to account for the bends.	The cross sections are located outside of Block 1 and were developed as part of SCUBE. If the SCUBE terrain file were to be provided the the cross sections could be extended.	Response does not address comment.	Refer to response to comment 9.		
16	City / EXP	HEC-RAS Model	EX conditions (WC06)	Review left side of XS730.3979. Does flow actually enter the swale on the other side of the road?	The cross sections are located outside of Block 1 and were developed as part of SCUBE. If the SCUBE terrain file were to be provided the the cross sections could be extended.	Response does not address comment.	Refer to response to comment 9.		
17	City / EXP	HEC-RAS Model	EX conditions (WC06)	XS502.0329 - XS480 doe not contain the WSE.	The cross sections are located outside of Block 1 and were developed as part of SCUBE. If the SCUBE terrain file were to be provided the the cross sections could be extended.		Refer to response to comment 9.		
18	City / EXP	HEC-RAS Model	PR conditions	Review geometry file. Project opens with hTab errors. Reset to defaults for review.	Geometry files has been resaved. This error occurs when a different version of the model is used than what the model was original created with, but does not have an effect on the results.	Acknowledged.	N/A		
19	City / EXP	HEC-RAS Model	PR conditions	The cross sections do not appear to be meeting the top width of 40m and bottom width of 23m.	Cross sections have been revised based on the latest channel configuration.	Acknowledged, but appears to be a much smaller cross section.	N/A		
20	City / EXP	HEC-RAS Model	PR conditions	It is not clear from the model or exhibits how the new channel will interact with existing structures. For example, the two buildings in XS2006.337 have ~23m between them. How will the proposed channel squeeze between the structures?	This cross section is located outside of Block 1 and is not affected from the pre to post condition.	XS2044.707 is drawn on top of two structures with 11m of space between them. The nominal top width of the channel is 30m. The structures are not shown in EX or PR models. Not sure how this section is NOT affected because there is new channel being proposed.	It is acknowledged that there are existing structures located within the floodplain at this cross section, the HECRAS model shows the ultimate channel configuration.	UT to coorrect buildings are in ownership.	

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FLOODPLAIN MANAGEMENT + HYDRAULIC MODELS + HYDRAULIC CAPACITY OF THE CREEK CROSSINGS								
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21	City / EXP	HEC-RAS Model	PR conditions (WC05)	Explain the use of a levee in XS2388.964.	All cross sections outside of Block 1 were from the SCUBE model and are considered to be the best available information/approach for those cross sections.	Even though it is outside of Block 1, some consideration needs to be given to fixing glaring errors in the model.	Refer to response to comment 9.	
22	City / EXP	HEC-RAS Model	PR conditions (WC05)	Please review the XS around XS1394.04. The right side of cross sections show a deep hole Please confirm.	Cross section has been reviewed and modified.	Acknowledged.	N/A	
23	City / EXP	HEC-RAS Model	PR conditions (WC05)	Explain why XS1394.04 is interpolated.	The comment in cross section is based on the proposed channel configuration. References to interpolation have been removed.	Acknowledged.	N/A	
24	City / EXP	HEC-RAS Model	PR conditions (WC05)	Confirm if structures in XS918.3739 see repetitive flooding in larger events.	XS918.3739 is located outside of Block 1, and the proposed 100-year floodplain does not exceed existing conditions.	HCA comments related to portions of the model outside of Block 1.	Refer to response to comment 9.	
25	City / EXP	HEC-RAS Model	PR conditions (WC05)	XS918.3739 - XS665 do not contain the flow.	The cross sections are located outside of Block 1 and were developed as part of SCUBE. If the SCUBE terrain file were to be provided the the cross sections could be extended.	HCA comments related to portions of the model outside of Block 1.	Refer to response to comment 9.	
26	City / EXP	HEC-RAS Model	PR conditions (WC06)	Explain the levee in XS2096.869.	All cross sections outside of Block 1 were from the SCUBE model and are considered to be the best available information/approach for those cross sections.	HCA comments related to portions of the model outside of Block 1.	Refer to response to comment 9.	
27	City / EXP	HEC-RAS Model	PR conditions (WC05)	Review Structure 1094. Does it have a swale on top?	The cross section are located outside of Block 1 and was developed as part of SCUBE, current geometry is assumed to be correct.	HCA comments related to portions of the model outside of Block 1.	Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC05)	Levees and XS's that do not contain flow.	Levees and XS's that do not contain flow.		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC05)		Review structure 655 culvert in profile.		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC05)		Profile shows 2240.61 WC5-7 shows overtopping in the 100 yr.		This is correct, no changes are proposed to the existing culvert.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC05)		Profile shows 1307.692 5-6 Crossing Barton overtops in the 100 yr.		Acknowledged, 1307.692 overtops in the without pond scenario.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC05)		XS 1071.48 needs ineffective flow area to the left.		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC05)		XS 1316.508 does not contain floodplain.		Section 1316.508 will be reviewed and extended.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC05)		XS 1291.617 needs ineffective flow area.		1291.617 ineffective flow areas have been provided.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC05)		XS 1071.48 needs ineffective flow area.		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC05)		XS 951.8970 needs I.F. area		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC05)		Review XS 942.8887		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC05)		XS931 needs I.F. area		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC05)		XS 918.3739 and downstream does not contain floodplain.		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		Levees in XS upstream of Barton St. Why?		Levee is in the model to ensure that the flows reach the point in the cross section prior to showing water entering the lower areas to the east and west.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 1414.879 needs I.F. areas.		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 947.3374 does not contain flow.		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 910.4732 does not contain flow.		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 730.3979 needs I.F. areas		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 634.0483 does not contain flow.		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 586.5527 needs I.F. areas		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 654.4214 needs review		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 533.8168 - 480 do not contain flow.		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 350 needs I.F. area		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 280 does not contain flow.		Refer to response to comment 9.	
	City / EXP	HEC-RAS Model	WC56 - BSS1 with ponds		Similar geometry to Ultimate. Same comments as ultimate.			
	City / EXP	HEC-RAS Model	Flows		Some narrative about the change in flows for each run should would be useful (or see the hydrology report)		Section 2.2.1.1 and 2.2.2.4 in the BSS1 document outline the differences in flows between the two	
28	HCA		General	Confirmation that Development is Expected to Result in Negligible Impacts on Flooding & Erosion		Levees and XS's that do not contain flow.	Sections within Block 1 will be reviewed to ensure no unnecessary levees are included and that flow is contained within all sections.	
29	HCA			1. Detailed Review that the Proposed Land Use Impervious Values are Consistent with the Fruitland Winona Secondary Plan:		Review structure 655 culvert in profile.	Refer to response to comment 9.	



Study Report: Block 1 Servicing Strategy (1st Draft): Fruitland - Winona Secondary Plan, Block 1, prepared by Urbantech for the City of Hamilton and Hamilton Conservation Authority, First Submission dated May 2022					Second Submission dated May 2024		Compliance with the TOR (to support or modify the June 21st & July 2nd comments)	
FLOODPLAIN MANAGEMENT + HYDRAULIC MODELS + HYDRAULIC CAPACITY OF THE CREEK CROSSINGS								
ID	COMMENT	REPORT	REFERENCE	COMMENT / RESPONSE				EXP verification/acceptance
No.	BY	Volume/Appendix	Page/Section/Table Drawing/Figure No.	City / HCA/ EXP Comments / October 21, 2022	Consultant's Team Response / April 2024	City / EXP Comments / May 31, 2024	Urabantech Response / June 20, 2024	Post June 21st & July 10th Review
30	HCA			a. The ultimate development land use conditions used to determine official floodplain mapping are based on the SCUBE Subwatershed Study (Aquafor Beech 2013) and Fruitland Winona Secondary Plan. It is therefore essential that the proposed land use impervious values be consistent with these documents.	As requested by HCA in the email correspondence dated May 12th, 2023, the following scenarios have been prepared for the floodplain mapping: Scenario 1 – For all lands, including the proposed development lands - Ultimate development land uses that are consistent with the currently adopted Official Plan, without any flow reductions from Storm Water Management facilities (SWMF)  Scenario 2 – For the proposed development lands - Proposed land uses and percent imperviousness, accounting for flow reductions from Storm Water Management facilities (SWMF). For all lands other than the proposed development lands - Ultimate development land uses that are consistent with the currently adopted Official Plan, without any flow reductions from Storm Water Management facilities.	Profile shows 2240.61 WC5-7 shows overtopping in the 100 yr.	This is correct, no changes are proposed to the existing culvert.	
31	HCA			b. Currently proposed land use impervious values appear to be considerably different from the SCUBE Subwatershed Study. It is requested that the report provide detailed review confirming that the proposed development is fully consistent with the SCUBE Subwatershed Study and Fruitland Winona Secondary Plan.	Refer to response above.	Profile shows 1307.692 5-6 Crossing Barton overtops in the 100 yr.	Acknowledged, 1307.692 overtops in the without pond scenario.	
32	HCA			2. Requested Erosion Threshold Analysis for Critical Downstream Reaches: It is requested that the erosion threshold analysis be extended to include a focus on critical watercourse reaches downstream of the proposed development. This focus is due to the fact that proposed stormwater management may result in prolonged elevated flows from the development area (compared to existing conditions), which may increase erosion potential downstream.	The erosion threshold was determined for a the most erosion-sensitive channel section downstream of the pond outlet and within the development lands. The erosion threshold was determined from detailed survey data but was also compared rationally to the unitary values of other proximal thresholds, which suggests that a conservative value was determined. Maintaining upstream bias to the pond outlet is also preferable, as extending the analysis further downstream inherently makes abstracting the potential impacts of the pond from external sources more difficult. Further, the channel within the development lands appears to have been subject to the least amount of historical modification, and as such, the channel geometry is expected to best reflect the underlying flow regime of the watercourse system. We therefore do not foresee that extending the analysis further downstream would provide additional value, nor is it expected to change the initial finding of the analysis.	XS 1071.48 needs ineffective flow area to the left.	Refer to response to comment 9.	
33	HCA			3. HCA Currently Does Not Support Accounting for Flow Attenuation within Proposed Stormwater Management Features for Official Floodplain Mapping: HCA staff currently do not support official floodplain mapping that accounts for controlled outflows from stormwater management features, even for areas such as this where the regulatory event is the 100-year design storm. HCA staff have consistently supported floodplain mapping assessments based on uncontrolled and ultimate development runoff. Consideration should be given to revising the provided preliminary floodplain mapping and initial determination of flood hazards.	As outlined in the HCA email correspondence dated May 12th, 2023, HCA is willing to consider the use of proposed SWM ponds to mitigate potential increases in downstream FPM.	XS 1316.508 does not contain floodplain.	Section 1316.508 will be reviewed and extended.	
34	HCA			4. Floodplain Mapping Updates at Subsequent Detailed Design Stages:		XS 1291.617 needs ineffective flow area.	1291.617 ineffective flow areas have been provided.	
35	HCA			a. HCA staff would like to re-iterate that the approach undertaken is appropriate for a preliminary determination of flood hazards and related development constraints within the Block 1 site. However, it is not considered official floodplain mapping and is not in accordance with HCA Floodplain Mapping standards.	Noted, the scope of this study was to use the current model provided by the City of Hamilton, as agreed to with the City and HCA.	XS 1071.48 needs ineffective flow area.	Refer to response to comment 9.	
36	HCA			b. An ongoing HCA study to update official floodplain mapping for this area will eventually supersede associated floodplain estimations from the Block 1 study. It is HCA staff's expectation at this time that any changes as a result of this work will be minor in nature and would result in at most small revisions to the flood hazard or development constraints determined as part of the Block 1 study.	Noted, the scope of this study was to use the current model provided by the City of Hamilton, as agreed to with the City and HCA.	XS 951.8970 needs I.F. area	Refer to response to comment 9.	
37	HCA			c. The status of floodplain mapping and determination of applicable flood hazard limits will need to be reviewed at subsequent detailed design stages at the time of any application for development.	Noted, the scope of this study was to use the current model provided by the City of Hamilton, as agreed to with the City and HCA.	Review XS 942.8887	Refer to response to comment 9.	
38	HCA			5. Inconsistency in Watercourse 6 Floodplain Mapping Between Current Study and Block 2 study: For Watercourse 6, any considerable differences between the flood levels developed by the Block 1 and Block 2 (Aquafor Beech 2018) studies will be addressed at subsequent detailed design stages, in conjunction with any required alterations to preliminary flood hazard limits (and development constraints) based on finalized findings of HCA's Floodplain Mapping Updates project or other available information at the time of an	Approved hydrology and HECRAS modelling for WC 6 was provided on January 9th, 2024, it is noted that HCA's Floodplain Mapping will be the final floodplain.	XS931 needs I.F. area	Refer to response to comment 9.	
39	HCA		WC5	6. Confirmation That Riparian Storage Assessment Included Full Floodplain: The Watercourse 5 channel realignment and design could potentially alter existing flood storage between Highway 8 and Barton Street, thus affecting flooding conditions downstream of Barton Street. To evaluate this, the proponent undertook a Riparian Storage assessment. This assessment found that the proposed channel storage volume is greater than the existing channel storage volume. To ensure that HCA's understanding is correct, please confirm our expectations that by "channel" you are referring to the full floodplain and not just the main channel.	The riparian storage is based on the full floodplain, including both the overbanks and the main channel. Section 2.2.1 of the report has been updated for clarity.	XS 918.3739 and downstream does not contain floodplain.	Refer to response to comment 9.	
40			HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		Levees in XS upstream of Barton St.Why?	Levees were used where there are spots with high points to ensure that the water does not show flooding in adjacent lower areas prior to overtopping the high point.	
41			HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 1414.879 needs I.F.areas.	Refer to response to comment 9.	
42			HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 947.3374 does not contain flow.	Refer to response to comment 9.	



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FLOODPLAIN MANAGEMENT + HYDRAULIC MODELS + HYDRAULIC CAPACITY OF THE CREEK CROSSINGS							
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43			HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 910.4732 does not contain flow.	Refer to response to comment 9.
44			HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 730.3979 needs I.F. areas	Refer to response to comment 9.
45			HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 634.0483 does not contain flow.	Refer to response to comment 9.
46			HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 586.5527 needs I.F. areas	Refer to response to comment 9.
47			HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 654.4214 needs review	Refer to response to comment 9.
48			HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 533.8168 - 480 do not contain flow.	Refer to response to comment 9.
49			HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 350 needs I.F. area	Refer to response to comment 9.
50			HEC-RAS Model	5\$6 BSS1 Ultimate (WC06)		XS 280 does not contain flow.	Refer to response to comment 9.
51			HEC-RAS Model	WC56 - BSS1 with ponds		Similar geometry to Ultimate. Same comments as ultimate.	Refer to response to comment 9.
52			HEC-RAS Model	Flows		Some narrative about the change in flows for each run should be useful (or see the hydrology report)	Section 2.2.1.1 and 2.2.2.4 in the BSS1 document outline the differences in flows between the two
53						There are inconsistencies between the main body of the report and the Floodplain Map (DWG FF-1 & FF-2). For example: 1. The HEC-RAS cross-section numbers shown in Table 2.2 & 2.3 (Report Volume 1) indicate Storm XS-2388.964/NYHD 101 at Barton, whereas Floodplain Map DWG FF-2 depicts Storm XS-2388.964 at Fruitland. 2. The HEC-RAS culvert cross-section numbers for Fruitland & Barton Street shown in Table 2.1 (Report Volume 1) are not consistent with the depiction in the Floodplain Map (DWG FF-1 & FF-2).	1. Table 2.2 and 2.3 show the flow inputs into the HECRAS model, flows are inputted into the model upstream. Therefore the flows associated with Barton were added to the model upstream at Fruitland Road. This was the approach that had been used in the SCUBE model.  2. In Table 2.1, cross section the Fruitland crossing 2440.61 should actually be 2240.61, this can be updated. Crossings are not currently shown on the floodplain mapping.
54						The 100-year flood elevations for WC5 – 5 depicted in Floodplain Map DWG FP-2 do not align with the elevation provided in Table 2-4, Summary of WC5 HEC-RAS Model Results (Proposed Condition), within the main body of the report.	Acknowledged, FP-2 will be revised.
55						The 100-year flood elevations and HEC RAS river station numbers for WC– 6 depicted in the Floodplain Map DWG FP-2 do not align with the data provided in Table 2-9, Summary of WC6 HEC-RAS Model Results (Proposed Conditions), within the main body of the report.	Acknowledged, FP-2 will be revised.
56	Exp/City		TOR				
57	Exp/City		TOR				Please verify if any local flooding is occurring at 688 Barton Street (private property) and provide remediation measures if needed.
58	Exp/City		TOR				Please verify if any local flooding is occurring at 728 Barton Street (private property) and provide remediation measures if needed.
59	Exp/City	VOL1	GRD-1/FP plans				Address the area / creek located South-West of Fruitland Rd at HYW8. Show floodplain limits for both, existing and proposed conditions.

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No.	BY	Volume/ Appendix	Page/Section/Table Drawing/Figure No.	HCA Comments / October 21, 2022	Consultant's Team Response / April 2024	City / EXP Comments / May 15, 2024
Watercourse 5 <b>Staging and Assessments Related to the Proposed Realignment of Watercourse 5:</b>						
1	HCA			The report notes the City of Hamilton Watercourse 5 Class EA (2007) identifies realignment and channelization as the preferred alternative. It is HCA staff's understanding that this Class EA study was not finalized and that this is not the identified preferred alternative from the draft study. HCA suggests the statements in this section in relation to the Class EA should be reviewed and revised.	Acknowledged.	Refer to the high level/planning comments.
2	HCA			Notwithstanding the above, the potential relocation of Watercourse 5 between Sherwood Park Road and Barton Street was identified in the SCUBE Phase 3 Implementation report (Aquafor Beech, May 2013). HCA staff understand the proposed realignment of Watercourse 5 identified through the SCUBE study was intended to facilitate development/increase developable area east of creek, and to provide floodplain and stormwater servicing benefits. No realignment of the watercourse upstream of Sherwood Park Road was contemplated through SCUBE given natural heritage features and constraints in this area.	Acknowledged.	
3	HCA			HCA understands the objective of the realignment proposed through SCUBE was to provide a stable, naturalized stream, including a minimum 15m wide VPZ along each side of creek, that provides warmwater fish habitat and has the capacity to convey flood flows without impacting the adjacent roads or development lands. The Block 1 report proposes realignment and channelization of the entire reach of Watercourse 5 through the entire Block. Further comment/rationale should be provided in the report for the proposed approach and extension of the realigned creek south of Sherwood Park Road. HCA staff suggest it should also be clarified that natural channel design principles will be required. It may be helpful to illustrate this conceptually, along with adjacent VPZ/natural areas and restoration areas.	Conceptual channel drawings are provided in the second submission. The existing channel is morphologically limited with homogenous aquatic habitat. The proposed realignment provides a wide range of hydroperiods and flow conditions within the channel to improve geomorphic and ecological habitat conditions for warmwater fish species. The channel realignment extends from Fruitland Road to Barton Street to allow for a seamless tie in at the road culverts. The existing channel within this area provides limited habitat and ecological function.	
4	HCA			HCA has concerns regarding the proposed design and approach to the realignment of Watercourse 5. Staff note it is not clear that all recommendations from the fluvial geomorphological report (Appendix E) have been incorporated into the preliminary design in the Block 1 report completed by Urbantech. Further, in reviewing the fluvial geomorphological report, it's not clear to staff to what extent ecological criteria were used in determining the recommended design.	Conceptual channel drawings are provided in the second submission to provide a visualization of the proposed design. Objectives of the design are provided in Section 6, which provide description of the proposed design and the improvements to the ecological habitat. Habitat features included in the design have been added to the brief and details are provided in Section 6.4.	
			Watercourse 5	<b>Additional detail design work will be required to ensure the following assessments have been adequately completed to support the proposed realignment of Watercourse 5:</b>		
6	HCA			a. Updated (as required) hydraulic impact assessment to evaluate potential impacts of the proposed works on peak flows, water levels, floodplain lines and erosion potential	Acknowledged. Will be addressed at detailed design.	
7	HCA			b. Natural channel design, including main channel meander, riffle / pool sequencing, low flow channel capacity design, etc.	Conceptual natural channel design drawings provided with second submission for WC5. This is covered in the drawings, which include long-profile, planform, cross-sections, details, and an associated design brief discussing the technical considerations including bankfull channel capacity.	

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				HCA Comments / October 21, 2022	Consultant's Team Response / April 2024	
8	HCA			c. Identification of design measures to avoid/mitigate the potential negative effects of the proposed stream relocation and changes to the existing hydrologic regime on existing natural heritage features and functions	This is outlined in the technical design brief. The design proposed will restore the physical form of the channel including planform and in-channel characteristics; ensure channel stability and function during low flow periods; create low-flow channel that accommodates the bankfull discharge to improve the function of the channel corridor and increase interactions with the floodplain; create a floodplain that includes interconnected wet meadow and linear wetland features of variable depth, shape, and hydroperiod; and provide a mix of coarse and fine sediment sources throughout the low-flow	
9	HCA			d. Input to incorporate aquatic habitat recommendations	The design proposed riffle pool sequences which allow for a more diverse habitat compared to existing conditions. Increasing the morphological and sedimentological diversity of the channel allows for a an increase diversity of habitat for resident fish species. Woody riparian plantings are also proposed along the banks to provide shading and temperature regulation.	
10	HCA			e. Riparian corridor characteristics. Staff note that earlier natural heritage assessment work completed for the Block identified the potential for wetland enhancement and creation along Watercourse 5 as part of the proposed realignment and naturalization of this feature. HCA notes there is some discussion in the fluvial geomorphological report regarding this, which should be incorporated into the design proposed in the block study report	Wetland creation and enhancement are provided on the conceptual design drawings.	
11	HCA			f. Planting and Restoration Plans	Planting and restoration plans will be provided at detailed design.	
12	HCA			g. Aquatic ecology and wildlife passage	Aquatic ecology detail has been added to the design report. The channel was designed to ensure fish passage and provide a range of habitats to support the life cycle of resident fish species.	
13	HCA			h. Monitoring plan/program. The fluvial geomorphology report does not currently provide any recommendations for monitoring time frames	Monitoring is recommended for 3 years following channel construction. The report ha been updated to include the monitoring time frame.	
14	HCA			i. Transitions to existing upstream and downstream channel configurations	The conceptual channel design is propsoed to tie-in to culverts which allows for seamless transitions to upstream and downstream reaches.	
15	HCA			j. Staging / Phasing of Watercourse 5.0 re-alignment, with respect to staging / phasing of site development		

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16	HCA			With respect to channel design and staging, HCA has previously commented that a comprehensive approach to the design and realignment of Watercourse 5 would be required. In reviewing the report, staff note the realignment of the watercourse is proposed in stages, given constraints associated with current land ownership and development timeframes. HCA suggests such an approach is problematic from an ecological perspective and should not be supported. HCA has previously noted construction of the entire Watercourse 5 channel should occur prior to development to allow the channel to stabilize. Additional assessment work may be required through the block study to further advance the design for Watercourse 5.	HCA's recommendation that a comprehensive approach be undertaken have been identified in Section 8.1 of the report which recommends that said report be developed through further consultation between HCA and the developers at the draft plan approval stage.	
17	HCA			The report notes that Phase 1 of development is anticipated to include the proposed channelization of Watercourse 5 from Barton Street to Street B. In reviewing the land ownership map provided, HCA notes that the landowner(s) at the downstream (Barton St) section of the creek are not part of the current group supporting the Block 1 study. Without participation of all affected land owners, a comprehensive/coordinated approach to realignment of the creek does not seem possible. This issue requires further consideration in the Block study report.	The intent of the block plan is provide a comprehensive functional design of engineering works irrespective of real estate implementation obstacles. It is acknowledged that there are unresolved land assembly issues to be addressed at the draft plan and detailed design stages.	
18	HCA			Confirmation that the Existing Culvert Crossing of Watercourse 5 on Grand Olympia Property was included in the Assessments: It would be appreciated if confirmation was provided that the existing culvert crossing of Watercourse 5 on the Grand Olympia property has been accounted for. It was not clear to HCA staff from the report or drawings.	The existing culvert in the Grand Olympia property was included in the modelling.	
				<b>Corridor Sizing</b>		
19	HCA			HCA requests further clarification regarding any ecological principals that were used in the determination of the Watercourse 5 channel corridor, or if the approach was entirely empirical. Staff suggest design safety factors should account for potential lack of future channel maintenance and ecological activities such as debris dams and beaver activity.	The channel corridor was sized to address the erosion hazard associated with a constructed channel. Given the channel is design to be generally stable it is unlikely that significant migration will occur. A 6 m erosion access easment is also provided a the top of bank on the south side if emergency repairs are required.	
				<b>Erosion Hazard Limit (Meander Belt)</b>		
20	HCA		WC6	Watercourse 6 Alignment Verification:		
21	HCA			The meander belt allowance may define the development constraint limit for some areas adjacent to Watercourse 6. This may include some reaches where the main channel geometry and creek alignment were previously unverified due to site access limitations.	Hazard delineation for watercourse 6 has been provided in a separate report.	
22	HCA			HCA staff would like to confirm that the additional topographical information provided by HCA was sufficient to adequately define the main channel geometry and creek alignment in these areas, as this information has the potential to alter the meander belt extents and thus the development constraints limits.	Field observations were completed on a section of watercourse 6, which provided adequate information on geometry and alignment to determine the meander belt width for this section of creek.	
23	HCA			If the additional topographical information provided by HCA was not sufficient to adequately define the main channel geometry and creek alignment, additional site survey is expected to be required.	Field observations were completed on a section of watercourse 6, which provided adequate information on geometry and alignment to determine the meander belt width for this section of creek.	
	HCA		WC5 & WC6	<b>Meander Belt Delineation</b>		
24	HCA			The block study report has provided an updated erosion hazard (meander belt) assessment and delineation for Watercourse 5, based on work completed by Geo Morphix in 2022 (Appendix E). In reviewing the submitted materials it's not clear that the erosion hazard for Watercourse 6 is discussed/included. HCA staff note earlier work by Parish Geomorphic had defined the erosion hazard for both Watercourse 5 and 6. Discussion regarding the Watercourse 6 erosion hazard should be included and illustrated in supporting figures.	Hazard delineation for watercourse 6 has been provided in a separate report.	

Study Report: Block 1 Servicing Strategy (1st Draft): Fruitland - Winona Secondary Plan, Block 1, prepared by Urbantech for the City of Hamilton and Hamilton Conservation Authority,  
First Submission dated May 2022

Second Submission dated May 2024

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25	HCA			Discussion and delineation of the erosion hazard for Watercourse 5 and 6 should include consideration of a <b>6m erosion access allowance</b> .	The design brief and subsequent memo defines the meander belt width for Watercourse 5 and 6.	
26	HCA			For both Watercourse 5 and 6, HCA has previously noted the development constraint limit should be based on the combined greatest extent of the erosion hazard limit, floodplain limit and ecological buffer/VPZ. Hazard and natural heritage limits should be reflected on the appropriate figure(s) in the final report.	The proposed channel block for WC5 was designed based on the greatest governing constraints. As it relates to WC6, only the meander belt has been confirmed. Other constraints will be subject to further study and utilized to define the appropriate corridor	

**GEOTECHNICAL**

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				City / EXP Comments / October 21, 2022	Consultant's Team Response / April 2024	
No.	BY	Volume/ Appendix	Page/Section/Table Drawing/Figure No.			City / EXP Comments / May 15, 2024
1	CITY/EXP			No geotechnical investigation report was provided to EXP for review and a geotechnical investigation will be required to facilitate the design and construction.	Acknowledged. Will be addressed at darft plan / detailed design.	No new comments at this time.
2	CITY/EXP			Based on the limited borehole information provided in the AMEC hydrogeological report, publicly available geological/geotechnical data, and EXP's experience in the project vicinity, the native soils are generally expected to consist of stiff to hard silty clay/clayey silt overlying shallow bedrock. The bedrock in the area consists of Queenston Shale and is anticipated to be encountered at depths ranging from about 1 to 3 m below existing grades.	Acknowledged.	
3	CITY/EXP			No significant geotechnical concerns were identified at this time. The shale is typically highly weathered near the surface and can be excavated using conventional excavators equipped with rock teeth. The shale becomes more sound with depth (typically about 2 m below rock surface, but coring and sampling would be required to confirm this) and can contain limestone lenses, requiring the use of rippers and/or pneumatic hammers. This will result in more costly excavations for stormwater ponds, services, and basements.	Acknowledged. Will be addressed at darft plan / detailed design.	
4	CITY/EXP			Significant grade raises are planned in areas of the site and this additional load can result in consolidation settlement of the underlying clay layer which could impact the construction schedule; while this is not expected to be of significant concern at this site given the condition of the clay, additional boreholes and testing would be required to confirm this.	Acknowledged. Will be addressed at darft plan / detailed design.	
5	CITY/EXP			The use of synthetic or compacted clay liners should be anticipated for the stormwater ponds.	Acknowledged. Will be addressed at darft plan / detailed design.	
6	CITY/EXP			No support issues for services founded in native soils or bedrock are expected. Low to mid-rise structures with conventional shallow footing foundations supported on the native soils or engineered fill are feasible. High rise construction is also possible in the sound shale, below the highly weathered rock. The seismic site classification is considered Site Class C or better.	Acknowledged. Will be addressed at darft plan / detailed design.	



Study Report: Block Servicing Strategy: Fruitland - Winona Secondary Plan, Block 1, prepared by Urbantech for the City of Hamilton and Hamilton Conservation Authority,						Second Submission dated May 2024	
TRANSPORTATION							
ID	REPORT	REFERENCE	COMMENT / RESPONSE			REFERENCE	
No.	Volume / Appendix	Page/Section/Table Drawing/Figure No.	CITY / EXP Comments / October 21, 2022	Consultant's Team Response / April 2024		Page/Section/Table Drawing/Figure No.	City / EXP Comments / May 15, 2024
<b>EXP</b>							
1		Secondary Plan - Urbantech: Page 71; TIS report - Paradigm	Under the Traffic and Transportation section, the description of the development says: "The development concept is expected to be built-out in two phases by Year 2027; the first phase is expected to be built-out between Year 2023 and Year 2026 and generally includes the lands north of the southerly Street 'C' connection to Gordon Dean Ave. The second phase for the remaining lands is expected to be built-out between Year 2025 and Year 2027." (Page 71) a) Please provide some descriptions to the horizon years that the traffic study is looking ahead to assess the impacts in the future. b) Please revise the text and the remaining of the report to include Phase I, Phase II (build-out year), and 5-years post build-out. c) Even though report says there are two horizons, all site traffic has been assigned at 2027 horizon and carried through. 2027 and 2032 horizons are not reasonable as that would assume Phase 1 is built out in 2022 and Phase 2 is built out in 2027. d) Incremental impacts by horizon are not properly assessed, identified or outlined and mitigation measures not provided (other than to say City is responsible). e) Strategic staging and phasing missing.	Descriptions of anticipated full build-out year and horizon years are provided in Section 3 and Section 4.1 of the December 2023 TIS report.		Section 4.8	In Section 4.8 the remedial measures do not work for the intersection of Fruitland Road and Barton Street in 2036. Please include additional measures they could alleviate the delay and capacity issues experienced in the AM and PM peaks.
2		Secondary Plan - Urbantech: Page 73; TIS report - Paradigm	Can you provide a summary of the traffic operation / performance for each of the analysis year, and identify how does the traffic results trigger the mitigative measures shown in the list? When compared to Pages iv and v, in the TIS report produced by Paradigm, the remedial measures are not consistent.	Please refer to Section 4.5, 4.6, 4.7 of the December 2023 TIS report for future background and total traffic operation results.  Please refer to Table 4.14 (in Section 4.7) for a summary of the identified critical movements under 2031 and 2036 total traffic conditions and the corresponding remedial measures to mitigate/improve the critical movements.		Section 4.7	The City does not want to provide dual left turn lanes as they move towards Vision Zero. Is there an alternative solution that could be done to avoid having more than 300 plus vehicles making a left turn within the network.
3		Page ii	Executive Summary: the second bullet refers to Collector 'B'. Please clarify whether it is Collector or Street.	We have used "Collector B" consistently throughout the report.		General	Some of the references are not sited correctly. Please make sure any web links can be accessed by copying them correctly.
4		Page iii	Executive Summary: In the previous page, it is mentioned that the site will be developed in two phases. In the Site Trip Generation, no mention was made regarding the two construction phase. Please revise the text and the remaining of the report to include Phase I, Phase II (build-out year), and 5-years post build-out.	The anticipated full build-out of Block 1 is 2031 and Block 1 will be constructed over the years without a defined phase plan. Therefore, no phases were included in the analysis and report.			Resolved
5		Page iii	Executive Summary: this section of the report does not mention what years are the horizon years. Please revise accordingly.	A sentence explaining horizon years (2023, 2031, and 2036) was added in Conclusion on page ii of the December 2023 TIS report.			Resolved
6		Page iv	Executive Summary: purpose of the Sensitivity Analysis was not described in this Section of the report. Please revise accordingly.	Comment is not applicable for this submission. Sensitivity analysis was removed based on comment 42 and 43.			Resolved
7		Page viii	Table of Content, Table 4.7 to Table 5.2, Please clarify the difference between the two '2032 total traffic analysis'.	Comment is not applicable for this submission. Sensitivity analysis was removed based on comment 42 and 43.			Resolved
8		Page 1	Introduction: Can you describe the land development that is being proposed in Block 1 lands in the first paragraph?	Brief description of Block 1 land uses is provided in the first paragraph of Introduction of the December 2023 TIS report..			Resolved
9		Section 2.5 Figures 2.6 & 2.7	Show the existing traffic within the study area. However, "0" volume and arrows are shown at the proposed intersection. Please remove the arrows and zeros to only show the existing traffic volumes.	"0" volumes and arrows were removed from existing traffic volumes. See Figure 2.5 and 2.6 of the December 2023 TIS report..			Resolved

10	Section 2.5	<p>a) Report used base year 2021 when it should have been updated to 2022 since report was prepared in April 2022.</p> <p>b) Some counts date to 2017 (report says: "was like the 2017 data")</p> <p>c) Was 2017 and 2021 data provided for the intersection referenced above?</p> <p>d) Why did they only mention 2017 as being "like" when they also used 2018 and 2020 data - was this approved?</p> <p>e) Used a variety of growth rates from the Highway 8 EA (dated 2020), please clarify.</p> <p>f) Please select one average growth rate for the area.</p>	2017 and 2018 traffic data were not used in this submission. Base year (2023) traffic volumes were estimated by applying an average annum growth rate (2.0%) to 2021 and 2022 traffic counts. The average growth rate was provided by City of Hamilton staff. See Section 2.5 of the December 2023 TIS report.	Resolved
11	Section 2.6	<p>Traffic Operations: please include all City requirements for traffic operation analysis to include HCM delay threshold, Synchro modelling inputs, lane widths, saturation flow rate, peak hour factor (PHF), etc.</p> <p>a) Used Synchro 10 with HCM 2000. Should have used Synchro 11 (released Feb 11, 2022).</p> <p>b) Incorrectly stated critical threshold for unsignalized intersection as LOS E or F when it should also include LOS D as per City TIS guidelines.</p> <p>c) Did not identify that TIS guidelines state signalized intersections with a v/c ratio of 0.85 or greater should be identified.</p> <p>d) The guidance indicates that "Peak hour factor (PHF) is to be 0.92 unless a calculation based on actual traffic counts demonstrates another value is more appropriate." Please revise the Synchro settings or provide assumptions made to the study.</p> <p>e) Please indicate, in the report, the saturation flow used in this study.</p>	Traffic operational analysis followed the City Traffic Impact Study Guidelines in terms of Synchro parameters and critical movements criteria. All Synchro analyses were reconducted using Synchro 11. See Section 2.6 of the December 2023 TIS report.	Resolved
12	Section 3.0	<p>This comment aligns with the 1st comment:</p> <p>a) Development Phasing / Build-out Years;</p> <p>b) Development is expected to occur in two phases: Phase 1 between 2023 and 2026; Phase 2 between 2025 and 2027. Need to adjust horizon years;</p> <p>c) Development stats should be broken down by phase / horizon years, but they were all grouped together.</p>	The anticipated full build-out of Block 1 is 2031 and Block 1 will be constructed over the years without a defined phase plan. Therefore, no phases were included in the analysis and report.	Resolved
13	Section 3.1	<p>Description: "The concept plan proposes three new roads: It seems like Collector 'B' and Street 'B' may be the same (An east / west road that extends easterly from Sherwood Park Road into Block 2 to the east of the site)"</p> <p>In the Secondary Plan, the roadway is identified as Collector 'B'. Please revise the Site Concept Plan to show 'Collector B'.</p> <p>The report refers to Collector 'B' and Figure 3.1 says Street 'B' and Collector 'B'. Please clarify whether it is Collector or Street and revise text and figures accordingly.</p>	The Secondary Plan, figures, texts have been revised to use "Collector B" consistently throughout the December 2023 TIS report.	Resolved
14	Table 3.1	Please update the Table to show both Phases of construction and a description of the various Land uses.	No defined phase plan for Block 1. Table 3.1 in Section 3.1 of the December 2023 TIS report summarizes the proposed development statistics within Block 1	Resolved
15	Section 3.2	<p>For the Trip Generation, the report says 10th edition trip generation manual rates were utilized - should have been 11th edition.</p> <p>Trip Generation is incorrect for the following reasons:</p> <p>a) Used 10th edition rates;</p> <p>b) Used equation rates for residential uses when average should have been used since number of units exceeds range of rates for use of equation;</p> <p>c) They assumed a 40% reduction in school trips to account for internal capture; however, not reflected in calculations (only showed end result). This is incorrect since trip generation inherently accounts for internal capture and alternative modes (walking / cycling);</p> <p>d) Should have used equation rates for shopping center trips since all criteria for their uses were met; and</p> <p>e) Underestimated trips by 330 in the AM and 293 in the PM.</p>	<p>Trip generation was estimated for each TAZ in Block 1 based on development statistics using ITE 11th edition data.</p> <p>Equation rates were used for residential land uses because the number of units for each TAZ falls within the range for using the equations and the R square value exceeds 0.75.</p> <p>For a conservative approach, 0% reduction was assumed for school trips.</p> <p>Average trip rates were used for commercial land uses because commercial GLA is not within the GLA range.</p> <p>Section 3.3 of the December 2023 TIS report documents the assumptions made</p>	Resolved
16		<p>a) Please indicate what was the driving factor behind the 40% reduction in trips.</p> <p>b) Was an internal capture evaluation conducted?</p> <p>c) Please show the analysis and results.</p>	We have changed the trip reduction for school trips to 0%.	Resolved
17		<p>The report specified that no adjustments were made for pass-by trips as all commercial driveways are assumed to be located between study area intersections.</p> <p>From the City's TIS Guidelines, Pass-by Trips represent intermediate stops on a trip already on the road network, i.e. a motorist stopping into a service station on their route to/from work.</p> <p>a) We may assume that the proposed trips for this study are destination trips.</p> <p>b) Please revise the report to show the correct definition.</p>	Correct pass-by trip definition is added in Section 3.3 of the December 2023 TIS report. For a conservative approach, we assumed all commercial trips are new trips.	Resolved

18			Please update the Table to show both Phases of construction for each Land use.	No defined phase plan for Block 1. Table 3.2 in Section 3.3 of the December 2023 TIS report summarizes trip generation for Block 1.		Resolved
19		Table 3.2	Please verify the numbers or units shown under the column of variable (600 units) and provide the numbers of students as the input to the trip generation equation. Please provide the school trip reduction assumption and analysis.	The number of students were provided in Table 3.2. We have assumed trip reduction for school trips is 0% (for a conservative approach).		Resolved
20		Table 3.3	<p>For the Trip Distribution, the report did not note what assumptions were made regarding street network and what was in place when (Gordon Dean, Street B and Street C) in assignment.</p> <p>a) The City's guidelines specifies that Trip distribution assumptions should be supported by TTS and the Existing/anticipated travel patterns. In the report the distribution used TTS without considering the existing traffic patterns.</p> <p>b) Appendix D does not provide clear details and methodology used to arrive to the proposed distribution.</p> <p>c) The trip distribution to/from South through Fruitland Road is shown as 0% in the table, Please explain in greater details that there will be no site generated trips assigned to/from the south.</p> <p>d) As Jones Road is another gateway for the site traffic going to/from north and south directions, Can you provide more assumptions to include that?</p> <p>e) On Highway No. 8, the traffic volume from/to east is not too different from the west. However there is a great difference between the values.</p> <p>f) The study assumed that the entire street network was in place for 2032 horizon. Please correct.</p> <p>g) Outbound volumes are higher than trip generation (163 in the AM and 229 in the PM); therefore, all future traffic forecasts are incorrect.</p> <p>h) Please revise the directional distribution to consider the existing travel patterns.</p>	<p>Trip distribution was repopulated based on TTS data as well as existing travel patterns.</p> <p>Appendix F contains the trip generation, trip distribution, and trip assignment for each TAZ within Block 1.</p> <p>Trips to/from south via Fruitland Road/Regalview Drive is eastimated to be approximately 5%.</p> <p>Trips were assigned to/from the north via Jones Road. Trips were not assigned to/from the south via Jones Road due to a discontinued road connection.</p> <p>Trip distribution to/from the east and west via Highway 8 is more balanced with the revised trip distribution.</p> <p>It was assumed Gordon Dean Avenue and Collector B will be in place under future background conditions, and Street C will be constructed under future total conditions.</p> <p>Site traffic were assigned using the updated trip distribution. Inbound/outbound volumes are consistent with trip generation estimates (slight differences are due to rounding).</p>		Resolved
21		Figures 3.2 & 3.3	Please update Figure 3.2 and Figure 3.3 to include the updated trip generation and the directional distribution of traffic.	See Figure 3.3 to 3.6 of the December 2023 TIS report.		Resolved
22		Figures 4.1 to 4.8	Please update Figure 4.1 to Figure 4.8 to include the updated trip generation and the directional distribution of traffic.	See Figure 4.9 to 4.20 of the December 2023 TIS report.		Resolved
23		Section 4	Figures 4.1, 4.2, 4.5, and 4.6 show the background traffic within the study area. However, "0" volume and arrows are shown at the proposed intersection. Please remove the arrows and zeros to only show the projected traffic volumes.	See Figure 4.9 to 4.12 of the December 2023 TIS report.		Resolved
24			For future traffic conditions, assumed all surrounding road network improvements (Barton & Hwy 8) were in place for future horizons of 2027 and 2032. Did not clearly state if any changes were assumed to study area left-turn lane storage lengths based on EAs, etc. or if they were to be confirmed via EA.	Section 3.2 and Section 4.2.1 of the December 2023 TIS report summarizes all the proposed road network improvements. Table 4.2 summarized the proposed intersection traffic control and stroage lengths adopted from background studies.		Resolved
25		Section 4.1	<p>a) It seems like the projected traffic volumes include only expected year of build-out and 5-years post build-out. Please remove the arrows and zeros to only show the projected traffic volumes.</p> <p>b) Based in the initial assessment, there are two Phases of construction. Please revise the text and the remaining of the report to include Phase I, Phase II (build-out year), and 5-years post build-out.</p> <p>c) 2027 assumes Phase 1 will be built-out in 2022 which is not going to happen. It is not clearly stated exactly what is going to be built out at Phase 1 and Phase 2. Assumed Block 2 will be fully developed at 2027 - is this reasonable?</p>	No defined phase plan for Block 1 and the anticipated full build-out year is 2031. Future background and total traffic forecasts were regenerated for horizons 2031 and 2036.		Resolved
26		Page 24, Section 2.6	Based on City of Hamilton's TIS guideline, the analysis must highlight unsignalized intersections or movements where Level of Service, based on average delay per vehicle or individual movements is LOS "D" or greater. Please follow the City's criteria for the level of service assessment.	All analysis results tables have highlighted critical movements identified based on the City TIS guidelines.		Resolved

27	Section 4.2.1	Background Operations 2027: a) Study used Synchro 10 with HCM 2000. Revise study to use Synchro 11 (released Feb 11, 2022). b) Did not identify that Fruitland and Barton is forecast to operate with an overall v/c of 0.85 during the PM peak hour at 2027. c) Did not provide analysis for integral roads (Gordon Dean, etc.), only external road connections. Please provide analysis for internal roads.	Background analyses were conducted using Synchro 11. Updated background analyses included Gordon Dean Avenue and Collector B, and internal intersections were assessed.  See Section 4.5 of the December 2023 TIS report.	Resolved
28	Section 4.2.2	Under the summary of total traffic operations, the critical movements have been identified with the comparison to the background traffic operation, for example, at Barton Street and Fruitland Road: "It is reiterated that under background conditions, the 95 <sup>th</sup> percentile queue length is forecast to exceed the current available storage length by approximately 16m during the PM peak hour." Can you elaborate what may trigger the excessive queue for these critical movements?	Section 4.6 of the December 2023 TIS report includes the additional critical movements triggered by site-generated traffic.	Resolved
29		Total Operations 2027: a) Used Synchro 10 with HCM 2000. Revise study to use Synchro 11 (released Feb 11, 2022). b) Did not identify that Barton and Fruitland overall intersection operations have a v/c > 1 during both peaks (1.21 and 1.47 respectively to be exact). Identify locations with v/c>1. c) Did not give any justification on use of only two-way stop control on all internal intersections (Gordon Dean & Street C, Collector B & Street C, etc.). Please justify. d) Did not identify that Hwy 8 & Fruitland is forecast to have an overall intersection v/c of 1.04 (threshold for critical value is 0.85). Please correct.	All operational analyses were reconducted using Synchro 11. We have identified and discussed all critical movements. See Section 4.6 of the December 2023 TIS report.  Table 4.1 summarizes the proposed intersection traffic control and storage lengths at study area intersections based on related background studies or assumptions.	Resolved
30	Section 3.6.1	TIS Guidelines specifies that for large developments that will be phased in over time, the trip generation table should identify each significant phase separately.	No defined phase plan for Block 1. Therefore, trip generation was estimated based on full build-out of Block 1.	Resolved
31	Section 4.3.1	Background Operations 2032: a) Used Synchro 10 with HCM 2000. Revise study to use Synchro 11 (released Feb 11, 2022). b) Did not identify that Barton and Fruitland overall intersection operations are forecast to have a v/c of 0.97 (threshold for critical value is 0.85). Please correct.	See Section 4.5 of the December 2023 TIS report.	Resolved
32	Section 4.3.2, Table 4.7, Table 4.8	Please reformat the tables in Section 4 to be consistent with Table 4.1 / Table 4.2	Results tables were repopulated and consistent format was used.	Resolved
33	Section 4.3.2	Please provide clarifications to the below: "Table 4.7 and Table 4.8 summarize the level of service conditions for the AM and PM peak hours, respectively. Increases in delay and queueing are expected from the addition of the site-generated traffic. The following additional critical movements are caused by site generated traffic: " For 2032 horizon year, it is understood that the add-on of traffic should be the growth to the background traffic while the site generated traffic should remain the same as the build-out year	This comment is no longer applicable as analyses were redone and report structure changed. Future operations were documented based on future background and future total operations, rather than by years.	Resolved
34		Total Operations 2032: a) Used Synchro 10 with HCM 2000. Revise study to use Synchro 11 (released Feb 11, 2022). b) Did not identify that Barton and Fruitland overall intersection operations have v/c >1 during both peaks (1.46 and 1.84 respectively to be exact). Please correct. c) Did not give any justification on use of only two-way stop control on all internal intersections (Gordon Dean & Street C, Collector B & Street C, etc.). Please update. d) Did not identify that Hwy 8 & Fruitland is forecast to have an overall intersection v/c of 1.26 (threshold for critical values is 0.85). Please update.	All operational analyses were reconducted using Synchro 11. We have identified and discussed all critical movements. See Section 4.6 of the December 2023 TIS report.  Table 4.1 summarizes the proposed intersection traffic control and storage lengths at study area intersections based on related background studies or assumptions.	Resolved
35	Section 5.1	It is understood that the left-turn warrant assessment has been performed at all potential locations and, a lane configuration diagram is provided to include all proposed future intersections and demonstrate which segment are being assessed. a) The eastbound left-turn lane on Highway No.8 at Jones Road is existing, Please revise the diagram. b) Left turn warrants should be broken down by horizon, but since all site traffic was assigned at 2027, incremental left-turn lane storage lengths are not correct and warrants should be updated	Left-turn lane warrant analysis was not conducted in this submission. Future lane configurations were consistent with what was proposed in background studies.  See Table 4.1 of the December 2023 TIS report for a summary of intersection traffic control and exclusive lane storage lengths.	Resolved
36	Section 5.2	Traffic Control Signals: a) Why did they run warrants when all unsignalized intersections were forecasted to operate with acceptable levels of service? Please justify. b) Also used OTM warrants when our guidelines clearly state that Hamilton Signal warrant is to be used. Please update.	Signal warrant analysis was conducted for unsignalized intersections with reported poor operational performance. See Section 4.7 of the December 2023 TIS report.  The City TIS guidelines requires Hamilton Signal warrant sheets to be used; however, 8-hour traffic data was not available, only peak hour traffic forecasts were available. We used OTM Book 12 – Traffic Signals, using Justification 7 for	Resolved



37		<p>"The study area intersection operational analysis followed the same methodology used for 2032 total conditions. Figure 5.1 illustrates the remedial measures identified above. In addition, signal timings have been optimized."</p> <p>The rationale for the intersection operational analysis should be consistent through all years' analysis, please revise to show the same methodology.</p> <p>Also, Figure 5.1, Please revise the figure to reflect the remedial measures only, the green arrows show all the future proposed movements but not the remedial measures indicated in this section.</p>	<p>As noted at the beginning of Section 4.6 of the December 2023 TIS report, "operational analyses were undertaken using the same methodology, parameters, lane arrangements, and traffic control devices as in the analysis of background conditions".</p> <p>Figure 4.2 illustrates the proposed road network and Table 4.14 summarizes the additional remedial measures beyond future planned road network improvements.</p>		Resolved
38		Can you provide a summary of the traffic operation / performance for each of the analysis year, and identify how does the traffic results trigger the mitigative measures shown in the list?	Table 4.14 of the December 2023 TIS report summarizes the critical movements during each peak hour under 2031 and 2036 horizons and their corresponding remedial measures.		Resolved
39	Section 5.3	<p>"The following storage lengths are recommended to accommodate forecast traffic volume."</p> <p>Can you provide a comparison between queue length and storage length proposed in the list in a tabular form?</p>	This comment is no longer applicable to this submission. We adopted proposed storage lengths from related background studies in our future analyses and no major queuing issues were identified.		Resolved
40		<p>Total Traffic Ops with Remedial Measures:</p> <p>a) Barton &amp; Fruitland - did not do a reasonableness check to see if recommended left-turn lane storage lengths can be accommodated without overlapping intersections / driveways, etc.</p> <p>b) Why are internal intersections two-way stop controlled? Warrants for all-way stop control should have been undertaken. Please update.</p> <p>c) At the very least, all-way stop control should have been assumed at Gordon Dean &amp; Collector B (by school / community centre / park). Please update.</p> <p>d) Cannot accept remedial measures since they do not reflect accurate trip generation, horizons or up-to-date analysis tools. Please update.</p>	<p>Section 4.7 of the December 2023 TIS report lists the additional remedial measures to address the forecast increases in traffic.</p> <p>Section 4.11 of the December 2023 TIS report summarizes all recommended road network improvements.</p>		Resolved
41	Section 5.4	<p>Block 1 Roadways - Future Road Characteristics</p> <p>a) Only looked at bike lanes for Gordon Dean as per OTM Book 18. They did not consider MUP or any other active transportation option. Assumed Gordon Dean &amp; Collector B are collector roads and all other will be local roads. Please update.</p> <p>b) Recommended that Gordon Dean is a two-lane road - what is this based on? Does the analysis indicate this? Is it based on future total traffic volumes that are in line with collector roads and typical volumes per hour per lane, etc.? Please update.</p> <p>c) No reasoning provided for two-way stop control on Collector B at Gordon Dean, Fruitland and Jones. Please update.</p> <p>d) Collector C - no reasoning provided for two-way stop control at Gordon Dean and Collector B (also should be STREET C, not collector C). Please update.</p> <p>e) CoH Official Plan not considered within report; especially pertaining to recommended road characteristics (ROW width, etc.). Please update.</p> <p>f) Used TAC guidance for lane widths - should have asked City for preferred/required. Please update.</p> <p>g) Used OTM guidance for bike lane widths - should have asked City for preferred/required. Please update.</p> <p>h) Future ROW width for Fruitland Rd not discussed within report. Please update.</p> <p>i) Recommended road characteristics and ROW widths provided for Gordon Dean, Collector B, Street C and Interior Local Roads. Please update.</p>	<p>See Section 3.2 and Section 4.2.1 of the December 2023 TIS report for the proposed road network improvements.</p> <p>Table 4.1 summarizes the proposed intersection traffic control and storage lengths adopted from related background studies.</p> <p>Collector C was corrected to "Street C" throughout the report.</p> <p>Urban Hamilton Official Plan was referred in terms of road classification and ROW.</p> <p>Future ROW width for Fruitland Road was discussed in Section 4.2.1 of the December 2023 TIS report.</p>		Resolved
42	Section 5.5.1	<p>Sensitivity Analysis - Gordon Dean Ave Extension</p> <p>a) Why are they considering removing Gordon Ave connection to Hwy 8 at full build-out? No reasoning provided within report. Please update.</p> <p>This also leads the reader to believe that they have assumed Gordon Dean to Collector B but that the extension to Hwy 8 would be on an as-needed basis, which they supported the need through the sensitivity analysis.</p> <p>b) Did not identify v/c 1.01 for Hwy 8 at Fruitland in text, or issues with Hwy 8 &amp; Jones Rd (SB left-turn = v/c 1.26 at PM) (threshold for critical values is 0.85). Please clarify.</p>	We have removed Section 5.5.1 in the previous report as Gordon Dean Avenue is planned to connect Barton Street and Highway 8.		Resolved

43		Section 5.5.2	<p>Interim Condition - Gordon Dean Ave Extension says undertaken to determine when Gordon Dean needed to alleviate congestion but then in next sentence is says "Only the intersection affected by the removal of Gordon Dean Ave connection to Hwy 8 were assessed".</p> <p>a) Which is it and why was this analysis undertaken? Is it assuming Only Collector B will be provided at outset?</p> <p>b) What was motivation behind assuming school and retail/commercial constructed but number of residential units is yet to be determined?</p> <p>c) Say about 60% of residential can be constructed, but does not say when we hit 60% - at what phase, number of units, horizon, etc.</p>	We have removed Section 5.5.2 in the previous report.		Resolved
44		General	<p>a) Planning review assumed existing volumes plotted correctly. Report assumed future cycling network as per cycling master plan:</p> <ul style="list-style-type: none"> <li>- Planned bike lane on Fruitland;</li> <li>- Planned multi-use trail on Barton, from Fruitland east to east of Winona;</li> <li>- Planned bike lane on Barton west of Fruitland.</li> </ul> <p>b) Did not undertake full check of background or future total traffic volumes.</p> <p>c) Did not do a deep dive on Synchro.</p> <p>d) Complete streets guidelines were not considered within report.</p> <p>e) CoH Official Plan not considered within report; especially pertaining to recommend road characteristics.</p> <p>f) Future transit needs / service was not considered for Block 1.</p> <p>g) No specific consideration given for school / rec centre and how to best move people to / from this area. Did not discuss sidewalks, ped crossing, etc.</p> <p>h) According to the City's TIS documentation and reporting guidance, did not provide safety considerations, access requirements including visibility check.</p>	<p>See Section 3.2 and Section 4.2.1 of the December 2023 TIS report for the proposed road network improvements.</p> <p>See Section 4.2.2 and Section 4.2.3 for future transit and active transportation infrastructure improvements.</p> <p>City of Hamilton Complete Streets Design Guidelines and City Official Plan are referred in Section 3.2 and Section 4.2.1 of the December 2023 TIS report.</p> <p>See Section 4.10 of the December 2023 TIS report for access review of the preferred road network.</p>		Resolved
45		General	<p>Based on the background information that City has provided, below are the future road improvement alternatives that will correlate with the traffic study implications for the full build-out / future scenarios:</p> <p>a) Road widening on Baron Street: City considers a preferred alternative of 40m ultimate ROW width to accommodate a 4-lane cross-section in Block 1 study area;</p> <p>b) Road widening on Highway 8: City's Hwy 8 EA has included a traffic analysis to require that Hwy 8 west of Fruitland Rd to Dewitt Rd to be a four-lane road, the road profiles and cross-sections are in process;</p> <p>c) Intersection controls throughout for Gordon Dean, with future collector, Barton and Highway 8 have been considered to be signalized; and</p> <p>d) Road narrowing on Fruitland Road: Block 1 SS development group has requested that City to consider narrow the road to e.g. 30 or 26m. City has requested the TIS for Block 1SS to consider that possibility.</p> <p>Please revise the recommendations when considering the updated operation study. Please re-investigate your analysis results and conclusions to reflect the overall network development that would affect the Block 1 study</p>	<p>The listed future road network improvements have been accounted for in future background and total traffic forecasts. See Section 4.2.1 of the December 2023 TIS report.</p> <p>Remedial measures were proposed on top of future network improvements. See Section 4.7 of the December 2023 TIS report. Report figures, tables, and texts were revised accordingly.</p>		Resolved
46		General	<p>Based on Transportation Association of Canada, MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads, we can implement dual left turn lane when the volumes exceed 300 vehicles per hour (vph). The geometric modification is required at the intersection. Please update the report accordingly.</p>	See Section 4.7.1 of the December 2023 TIS report.		Resolved



Study Report: Block 1 Servicing Strategy (1st Draft): Fruitland - Winona Secondary Plan, Block 1, prepared by Urbantech for the City of Hamilton and Hamilton Conservation Authority, First Submission dated May 2022					Second Submission dated May 2024				
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**HYDROGEOLOGY**

ID	COMMENT	REPORT	REFERENCE	COMMENT / RESPONSE					
No.	BY	Volume/ Appendix	Page/Section/Table Drawing/Figure No.	City / EXP Comments / October 21, 2022	Consultant's Team Response / April 2024	City / EXP Comments / May 15, 2024	Urabantech Response / June 20, 2024		
1	CITY/EXP	Vol 2	Appendix B Hydrogeological Investigation Report	The hydrogeological investigation report prepared by Wood Environment & Infrastructure Solutions dated April 2022 has addressed the general guidelines pointed out by the City Memorandum dated August 3, 2022 section 7.4.14.1 xi).	Noted				
				The following points are recommended to include in the hydrogeological report: a. Cross sections of the Site along the north-south and east-west directions. b. In-situ infiltration tests are recommended to assist LID designs on site based on the in-situ percolation tests. c. Further groundwater and surface water measurements prior to construction and during construction to confirm local artesian conditions and delineate areas with high groundwater table. d. Groundwater test results can be compared with the City of Hamilton Sewer Use By-Law in addition to PWQO in order to determine the need of treatment for suitability of discharge to sanitary and/or storm sewers.	Cross sections were produced and have been included in the revised report	Comments a and b are addressed in the WSP HG Report dated March 2024. Please address comments c and d.	Items c and d will be addressed at draft plan and detailed design stage.		
2	HCA			Impacts of Proposed Development on Groundwater: It does not appear that the following 2018 previous comment has been addressed. "Given groundwater levels were recorded close to ground surface in some locations, HCA suggests it would be useful for the report to comment further on the potential for development of the block to impact groundwater flow patterns and groundwater inputs to surface water features downstream of the Block".	Some additional text has been added to the revised report regarding impacts on groundwater inputs to downstream water features	No comments at this time.			

NATURAL HERITAGE

ID	COMMENT	REPORT	REFERENCE	COMMENT / RESPONSE		
No.	BY	Volume/ Appendix	Page/Section/Table Drawing/Figure No.	Comments / October 21, 2022	Consultant's Team Response / April 2024	City / EXP Comments / May 15, 2024
1	City	Volume 1:	Page 1:	It has been noted that a first submission was made to the City and Hamilton Conservation Authority (HCA) August 2017. This submission was prepared by AMEC Foster Wheeler. The statement provided does not note that there has been a change in consultants.	Noted	
2	City		Page 6:	Specific land uses have been identified. The description is missing Natural Open Space, which is associated with Watercourse 6.0. Lands associated with Watercourse 6.0 are still under appeal.	Noted. Update Land Use mapping accordingly.	
3	City		Page 10:	It has been stated "the report also addresses specific concerns raised by City of Hamilton staff...". This does not take into consideration that additional studies were required because the data was outdated (completed in 2015 and 2016; over 5 years old). As with all 3 Block Servicing Strategies, field work information was to be completed via standard City equivalent information in order to expedite development. When completing natural inventories within the City of Hamilton, guidance is provided through specific Council adopted Guidelines (revised March 2015).	Noted. Additional field data collected in 2023 and incorporated into updated report.	
4	City		Page 11:	i. It has been identified that a 15 metre vegetation protection zone (VPZ) is to be provided for the watercourse. It is important to note that this is to be on both sides of the watercourse. This has not been clearly identified.	Noted. Clarified in updated report.	
5	City			ii. It has been identified that 2 wetlands have been identified along Watercourse 6.0 and that the wetlands do not meet the definition of a wetland within the UHOP. There is concern with this analysis since the lands associated with Watercourse 6.0 are still under appeal. This information is to be revised.	Noted. Reference to any features on the 238 Jones Road property were removed from the report.	
6	City			iii. It has been identified that Watercourse 6.0 is a good candidate for relocation. There is concern with this analysis since the lands associated with Watercourse 6.0 are still under appeal.	Noted. Reference to relocation of watercourse 6 removed from report due to ongoing appeal.	
7	City	Volume 2 (Drawings and Figures):	Figure 1 (Site Location Plan):	Lands associated with Watercourse 6.0 are still under appeal. This should be clearly labelled on the figure.	Noted. 238 Jones Road property clearly marked as under appeal.	
8	City		Figure 3 (Development Concept Plan):	It has been identified that the limit of development associated with Watercourse 6.0 is subject to future detailed studies. Since the lands associated with Watercourse 6.0 are still under appeal, the notation is to be revised to include this information.	Noted. Reference to any features on the 238 Jones Road property removed from the report.	
9	City		Figure 5 (Secondary Plan Overlay)	The stormwater management pond east of Jones Road appears to be located within the Vegetation Protection Zone (VPZ) and Linkage (as identified on the FWSP Natural Heritage System Map B.7.4-2. It is important to note that this facility should not impact the features and functions of the Natural Heritage System.	Noted. SWM ponds discussed in updated report.	
10	City			In addition, lands associated with Watercourse 6.0 are still under appeal. These lands have not been clearly labelled.	Noted. 238 Jones Road property clearly marked as under appeal.	
11	City	Volume 2 (Appendix C-Natural Heritage Characterization Report):		Overall, there is concern with the analysis that has been provided. At this time, Natural Heritage Planning staff cannot support/approve the Natural Heritage Characterization Report. The key issues have been identified below. In addition, several technical comments have been identified.	Noted.	
12	City			The focus of Natural Heritage Planning comments will be on the Natural Heritage Characterization Report prepared by Colville Consulting found in Appendix C of Volume 1, however, comments have also been provided on information in Volume 1 and Volume 2.	Noted.	

13	City			a. Relocation of Watercourse 5.0: It has been identified that Watercourse 5.0 will be relocated. As per previous comments (Dec. 6, 2017), there was concern that details (even at a high-level) had not been provided with regards to the relocation of this watercourse (implementation, use of Natural Channel Design). There is concern that this has not been adequately addressed within the revised report.	Noted. High level recommendations for the relocation of Watercourse 5.0 included in report.
14	City			Policy B.7.4.14 n) within the FWSP states “a block servicing strategy shall be used by the City to guide the review of planning applications within the respective Block Servicing Strategy”. Providing high level discussion allow for an understanding of the expectations required at the development stage. As a result, high-level discussions with regards to Natural Channel Design and implementation (including restoration plantings) is to be	Noted. High level discussion included in updated report.
15	City		WC6	b. Lands Associated with Watercourse 6.0: Lands associated with Watercourse 6.0 are still under appeal. This has not been taken into consideration within the report. Information has been included within the report (e.g., relocation of Watercourse 6.0, wetlands do not meet definition) that may have implications on the appeal.	Noted. Reference to relocation of watercourse 6 removed from report due to ongoing appeal.
16	City			c. Proposed Concept Plan: Characterizing the study area is important, however, the information is to be reviewed to determine how the change will impact the features and their functions. Discussions with regards to the proposed Concept Plan are very limited. Missing elements from the discussion include stormwater management, natural channel design (including the width of the Watercourse 5.0 block) and Low impact Development. In addition, a Concept Plan has not been provided within the report. At this time, it is difficult to understand how/if the features and their functions will be impacted by the change in use	Noted. Concept plan and high-level assessment included in updated report.
17	City			d. Impact Assessment: The impact assessment provided is limited. It does not consider the following:	
18	City			i. Impacts on Locally Rare/Uncommon Species: Locally uncommon/rare species have been observed within the study area. These species include Necklace Sedge, Pear Hawthorn, Broad-leaved Frosted Hawthorn, Northern Dewberry and Scarlet Hawthorn. In addition, a provincially vulnerable (S3) species (Hairy Sedge) has been observed. These species have not been taken into consideration since discussion on how development will impact them have not been provided.	Noted. Additional high level discussion regarding locally rare and uncommon species included in updated report.
19	City			ii. Stormwater Management Facilities: A stormwater management facility is proposed adjacent to Watercourse 6.0. It appears that this facility will be located within the VPZ and Linkages. This has not been discussed in detail within the report.	Noted. Additional discussion added to updated report.
20	City			In addition, the impacts of the stormwater management facilities in general have not been discussed within the report.	Noted. Additional discussion added to updated report.
21	City			iii. Grading: In previous comments (Dec. 6, 2017), there was concern that grading was to occur within the 15 metre VPZ. This concern has not been adequately addressed. The impacts of grading on the natural features and functions have not been discussed.	Noted. High level discussion regarding grading in the VPZ discussed in the report.
22	City			e. Mitigation Measures: The mitigation measures provided are limited. A range needs to be explored. This includes:	
23	City			i. Vegetation Protection Zone (VPZ) Planting Plan: A VPZ is to protect Core Areas and their functions from the impacts of the proposed activities that will occur before, during and after construction. Generally, permitted uses within a VPZ shall be limited to low impact uses, such as vegetation restoration, resource management and open space (UHOP Volume 1 policy C.2.5.12). In addition, the VPZ should remain in or be returned to a natural state	Noted. Additional discussion added to updated report.
24	City		WC5	It has been identified that a VPZ of 15 metres will be provided for Watercourse 5.0. It is important to note that this is to be provided on both sides of the watercourse.	Noted.
25	City			In previous comments (Dec. 6, 2017), there was concern that grading was to occur within 10 metres of the staked limits of features. This concern has not been adequately addressed. Grading is not to occur within the VPZ.	Discussion regarding grading in proximity to the VPZ included in updated report.
26	City			In addition, there is concern that a high-level discussion on how the VPZ will be planted has not been provided. As noted above, providing high-level discussions allows for an understanding of the expectations required at the development stage.	Noted. High level discussion included in updated report.

Within the Concept Plan and the Natural Heritage Report, the focus has been on Watercourses 5 and 6. The Concept Plan and Natural Heritage Report does not consider that a Natural Heritage System consisting of Core Areas (i.e. watercourses

27	City			ii. Invasive Species Management: Invasive species have been observed within the study area. There is concern that this has not been considered within the mitigation measures. A high-level discussion on the location these species, removal and monitoring is to be provided. This will provide guidance for future development applications.	Noted. High level discussion included in updated report.
28	City			iii. Locally Rare/Uncommon Species: Locally uncommon/rare species have been observed within the study area. These species include Necklace Sedge, Pear Hawthorn, Broad-leaved Frosted Hawthorn, Northern Dewberry and Scarlet Hawthorn. In addition, a provincially vulnerable (S3) species (Hairy Sedge) has been observed. Measures to mitigate impacts have not been included within the discussion.	Noted. High level discussion included in updated report.
29	City		WC5 & WC6	iv. Restoration Plans: Within the FWSP, restoration areas have been identified along Watercourses 5.0 and 6.0. A Restoration Area has been defined as “ <i>vacant or degraded lands adjacent to Core Areas where natural habitat has been altered, degraded, or destroyed. These areas provide opportunities to enhance and extend habitat of core areas. With proper habitat restoration, Restoration Areas will contribute to the function of the Natural Heritage System</i> ”.	Noted. Restoration area adjacent to Watercourse 6.0 is subject to appeal and not included in the report. Restoration areas adjacent to Watercourse 5.0 discussed in updated report and need to be considered in the context of settlement agreement.
30	City			There is concern that a high-level discussion on the location of restoration areas (as identified in the Secondary Plan and possible new areas) has not been provided. Since the canopy of Green Ash in the hedgerows, forests and wetlands within the study area is declining due to Emerald Ash Borer, these areas should be considered for restoration. It is important to be included this discussion because it will provide guidance that can be applied through specific development applications.	Noted. Restoration areas considered in the context of relocation of Watercourse 5.
31	City		Parkland Areas	Any open watercourse and it's associated setbacks/floodplain adjacent to planned parkland shall not form part of the parkland calculation.	Noted. To be be addressed by others.
32	City		Parkland Areas	Any piped watercourse proposed to run through planned parkland would be considered an encumbrance and would require an easement. We would ask that piped water courses be routed around planned parkland as their presence impacts the development potential of the parkland above and limits how the park can be designed.	Noted. To be be addressed by others.
33	HCA		Figure 2	In reviewing the Natural Heritage Characterization Assessment (Colville Consulting, May 2022), HCA staff suggest Figure 2 is misleading. The title indicates that figure 2 is “all mapped natural heritage features on the subject lands” but indicates only watercourses and significant woodland. The information being shown and its source should be clarified. In addition, there appear to be two shades of green on this figure, yet only one shade in the legend. This should also be clarified.	Noted. Figure clarified in updated report.
34	HCA			HCA would recommend that an access map of where the surveys have occurred over the last 7 years be included in the EIS. It is not clear from the EIS where permission was granted for various surveys and how a lack of access might result in a lack of knowledge in regards to the form and functions of the natural heritage features in this block.	Noted.
35	HCA		Figure 4	The title to Figure 4 is unclear. Figure 4 title is “significant wildlife and vegetation monitoring and observations on the subject lands”. Please clarify the title of this figure as HCA notes there is no vegetation monitoring shown on Figure 4. Additionally, the colours used to depict Barn Swallow and Bobolink are very similar and hard to distinguish. Finally, the Dewberry is the only regionally rare plant species shown, while Appendix A (vascular plant list) indicates there are other locally rare species found on the subject lands.	Noted. Figure clarified in updated report.
36	HCA		Table 2	Please update Table 2 as the surveys for Western Chorus Frog indicate incorrect codes for the Marsh Monitoring Program Protocols. At a call code level of three the number of frogs calling cannot be distinguished and as such it is labelled as a full chorus. Either the table should have codes 2-10 or be a full chorus depending what the field results were at the	Noted. Clarified in updated report.
37	HCA			HCA suggests the report should include a figure which overlays the recommended natural heritage system and associated buffers/VPZs with the concept plan.	Noted. Included on Figure 5..
38	HCA		General	<b>Assessment of Significant Natural Heritage Features</b>	

consisting of Core Areas (i.e., watercourses, significant woodlands, significant wildlife habitat, significant habitat of threatened and endangered species, wetlands), associated vegetation protection zones, linkages and restoration areas has been identified within the Fruitland Winona Secondary Plan. Specifically, there is concern that linkages and restoration areas have not been considered.

39	HCA		Section 4.1.1	Significant Habitat of Endangered and Threatened Species, notes that Barn Swallow were observed foraging above the study area in 2015, 2018, 2019 and 2021. The report indicates that none of the outbuildings were providing nesting habitat for the Barn Swallows and the subject lands only provide opportunistic foraging habitat for this species. This is somewhat contrary to how this species was discussed in the Fruitland-Winona Block 1 Servicing Strategy Environmental Assessment & Natural Heritage System Plan (Dougan and Associates, 2017) which indicated that much of the study area would be category 3 regulated habitat for Barn Swallows. The description in the Dougan report (2017) is more conservative and focuses on species conservation in the larger block plan. HCA would recommend that this rational be used within the block plan and in consultation with MECP	Designation of Barn Swallow modified since comment. Report updated to reflect current management.
40	HCA			The report further indicates that Bobolink are likely breeding within the block 1 study area. Despite this finding further study of how development might impact the habitat of this species across the block study area has been recommended to future assessments. HCA suggests the approach to assessing and planning for the habitat of species of conservation concern, including Bobolink, Barn Swallow and Eastern Meadowlark, requires a more comprehensive approach. Staff recommend that habitat for successional/open country birds should be incorporated into the natural heritage system. HCA would recommend that MECP be engaged to ensure important habitats are conserved for these three species.	Updated breeding bird surveys completed in 2023. Results of surveys incorporated and discuss in report.
41	HCA		Section 4.2.4	Habitats of Species of Conservation Concern considered Significant Wildlife Habitat (SWH) lists the four habitats to be considered as candidate SWH. HCA reviewed this list in comparison to the descriptions in the 7E SWH Criterion tables (Government of Ontario 2015) and recommend that the criteria for Shrub/Early Successional Bird Breeding Habitat be reviewed for this block natural heritage characterization assessment. In reviewing the Colville report, Brown Thrasher, Field Sparrow and Willow Flycatcher were all found on the subject lands in the breeding bird surveys in 2021. These are all indicator species of Shrub/Early successional bird breeding habitat as stated on page 34 of the 7E criterion tables. It is unclear from Appendix C, Breeding Bird Survey results, where these species were observed and if they were observed within the same habitat.	Updated breeding bird surveys completed in 2023. Results of surveys incorporated and discuss in report.
42	HCA		Section 4.6,	Wetlands, notes that wetland habitat has been mapped along Watercourse 6. HCA notes these features may be regulated. HCA also understands there may be on-going appeals concerning lands associated with Watercourse 6. As such, it is recommended the existing natural heritage features, including the identified wetlands, be included in Figure 5, Refined Extent of Natural Heritage Features. HCA also suggests the water balance should consider the presence of these wetland features.	Noted. Reference to any features on the 238 Jones Road property removed from the report.
43	HCA	WC5 & WC6	Section 6.0,	Recommended Core Areas and Natural Heritage System, indicates that Watercourses 5 and 6 as well as the potential habitat for open country birds are significant habitat features. As noted, HCA staff are of the opinion that the significance of this habitat feature for open country birds and Species at Risk should be better defined at this stage in the planning for the development of the block lands. This will allow for habitat mapping across multiple landowners and a more conservative habitat assessment.	Noted.
44	HCA		General	<b>Impact Assessment and Mitigation</b>	
45	HCA			HCA staff suggest the impact analysis and mitigation measures presented in the report are very high level, and that further details regarding the impacts of development and the potential mitigation measures should be provided.	Noted.
46	HCA		WC5	HCA notes a trail is proposed within the creek channel block on the east side of Watercourse 5. HCA suggests trails and infrastructure should be located outside the vegetation protection zone for the realigned creek corridor, and that the creek block remain primarily a natural heritage feature.	Noted.
47	City		WC5	It's our understanding that the WC5 runs adjacent to a proposed park block. Please clarify the basis/source for the above noted trail initiative and confirm if the intend for it to be part of the park block.	Noted. To be be addressed by others.