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220 Arkell Road, Guelph, Draft Plan of Subdivision Submission
D.P. 23T-19002, ZBA OZS19-017

Friday, March 31, 2023

Responses to First Submission Comments received from:

#	C/R	Comment / Response
	City of Guelph - First Submission, Comments dated December 2, 2020 from Jim Hall	
The following comments are provided based on the 1st submission for the above-noted application as it relates to the following document(s) received February 4, 2020: Plans • Draft Plan of Subdivision, prepared by Black, Shoemaker, Robinson and Donaldson Limited, Project No. 16-14-118-00-B, dated December 11, 2019		
Reports • Preliminary Servicing, Grading and Stormwater Management Report, prepared by Stantec Consulting Ltd., Project No. 161423338, dated May 28, 2019 • 2020 Arkell Road, Guelph, ON [Geotechnical Investigation Report], prepared by Stantec Consulting Ltd., Project No. 161423338.801, dated June 11, 2019 • Hydrogeological Assessment, prepared by Stantec Consulting Ltd., Project No. 161423338, dated May 28, 2019 • Transportation Impact Study, prepared by Paradigm Transportation Solutions Limited, Project No. 180099, dated April 2019		
General		
1.0	C	Some comments provided during pre-application discussions (approximately Dec. 2017 – Jan. 2019) remain outstanding, and do not appear to have been addressed in the application submission package. Please review these comments, and include relevant detail as part of the design detail provided in the next submission.
	R	Note the following summary of comments and responses to the email provided by Jim Hall on January 23, 2019
Email City staff have reviewed the resubmitted documents in support of the proposed temporary emergency access road south from the lands, through Block 20 (part of the Arkell Meadows subdivision) to Dawes Avenue. We want to thank you for the time taken to prepare the information, as it has helped us as we considered this request. Although we feel we don't have all of the information necessary to decide (see outstanding comments below), we recommend that you proceed with an application for Draft Plan of Subdivision, should that be the course of action desired by Carson Reid Homes. We strongly feel that, based on the comments we provided and the information you have provided to date, this is the best course of action that will help move this forward and put us in a position to give you a definitive answer. Some of the information we are looking for is better suited to the more detailed reports and plans that would typically accompany a draft plan application, and some of the discussions around the proposed temporary emergency access road would benefit from some of the higher-level review and discussions for the proposed subdivision. To that end, I have appended an updated version of the preliminary comments previously provided, updated to reflect the most recent submission. Please use these as the various documents and plans are prepared for the draft plan application. If you have any questions about the comments, please feel free to contact me directly.		
Following up on your resubmission dated November 6, 2018, City staff met to discuss the revised concept, and we offer the following for your future consideration as you prepare your application for Draft Plan of Subdivision: *The following comments, originally sent December 2017, remain in effect:*		
1.1	C	Staff scoped our review/discussion to just the temporary emergency road connection to Dawes Avenue and your proposal to use the existing City-owned Open Space Block fronting Dawes Avenue. We did not review the remainder of the plan, the remainder of the trail alignment, and don't feel it appropriate to respond to questions outside of this scope. Those items will need to be reviewed comprehensively with supporting impact assessment(s) as part of a complete submission package. Any comments provided outside of this scope are provided for your convenience, and are subject to further review during the application stage.
	R	Note, we are currently in the Application Stage now.

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1.2	C	Staff Support would increase if the road and grading was shifted to the east as much as possible, with leaving a 3 m buffer from lot 12 to the toe of the new slope. This allows the wetland/woodland buffer to be maximized while still considering a temporary road alignment. Please include the approved grading for the Open Space Block, and the adjacent lots of this subdivision, and design the grading/servicing so that the objectives of the adjacent subdivision are not disrupted, and the area (including the Open Space Block and the lands to the north) is adequately and appropriately designed. Please take special note that the current design shows the proposed temporary road crossing an infiltration gallery and related structures; this will have to be redesigned accordingly. Latest proposal does not appear to design for the objectives of the adjacent subdivision (infiltration requirements, drainage patterns, etc.). Additional details are required before staff can support the proposed temporary emergency access road.
	R	As shown on Figure 2 included in the May 2019 Preliminary Servicing Report and revised 2023 Report, the trail alignment was adjusted to the east such that the toe of slope/grading disturbance is 3 m from the Lot 12 property line. The original objective to the grading of the open space was to direct drainage from the front of the Block to the rear where the surface drainage contributed to a rear yard infiltration gallery. This drainage pattern has been preserved, including reorientating the infiltration gallery such to function in the same manner.
1.3	C	It should be noted that it is our expectation that the 10 m wide temporary road allowance would be restored to a 3m wide trail surface, at your client's sole expense, once the temporary access is no longer required. The 7 m restoration area should be planned on the west side and closer to the NHS and the restoration should include consideration for an alley of trees along the trail as well as other vegetation to stabilize, etc. Please include a restoration plan to show the ultimate state of these lands once the temporary emergency access has been removed. Keep City standards for pathways and tree planting in mind while completing this design, and ensure that the restoration plan provided for Block 20 should (at a minimum) reflect the street tree plan for Arkell Meadows Subdivision in terms of number and variety of deciduous/coniferous trees and shrubs. Note that preference is given to indigenous species.
	R	Detailed Restoration Plans to be provided during detail design and a condition of Draft Plan Approval.
1.4	C	The design must include provision for the extension of Dawes Avenue; please show the design under existing conditions (Dawes Ave. cul-de-sac) and with the extension in place. Please note the location of the existing fire hydrant, and the potential relocation of the hydrant when extending Dawes Avenue. This information has not been submitted to date; please include these details in the Draft Plan application package.
	R	Details showing the profile under interim conditions and ultimate conditions of the Dawes Ave extension has been illustrated in the May 2019 Preliminary Servicing Report and revised 2023 Report. These details are shown on Figures 2 and 3. The final placement for the relocation of the existing hydrant to be determined during detail design and coordinated with the adjacent development due to timing.
1.5	C	Given the area constraints, the existing and proposed grades, and the existing design within the 246 Arkell subdivision, please provide additional information on the proposed stormwater management for this area. Preliminary information has been provided, but further details are required before staff can support the proposed temporary emergency access road. Please provide these details in the Draft Plan application package.
	R	The SWM strategy for the subject area is outlined in the May 2019 Preliminary Servicing Report, as well as Revised 2023 Report and identified within proposed Catchment Area #208-1. Details outlining how drainage surface water is managed to the adjacent PSW is outlined in Section 5.6.3 of the aforementioned 2019 Report, now Section 5.7.5 in the 2023 Report.

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The following comments, originally sent July 2018, remain in effect:		
1.6	C	Currently the plan shows a storm sewer pipe located within the proposed park block and within the wetland buffer. All major servicing and utilities must be located outside of the park block and wetland buffer. (Although this comment is on an element outside of our current review scope, we felt it important to note, for your future subdivision design work.) Parks staff have reconfirmed that, in accordance with Section C (ii) of the Local Servicing Policy, the park block must be free and clear of all encumbrances, and Parks would not support including an easement within the park block.
	R	As shown on our Conceptual Servicing Plan C-100 included in our May 2019 Preliminary Servicing Report, the storm sewer has been positioned adjacent to Lot 29 and outside of the area identified for parkland use. The location of the SWM outlet features is a permitted use within the outer 15-30 m wetland buffer.
1.7	C	The proposed temporary access road should be located outside of the proposed neighborhood park block so as to not have any direct impact on construction timing of either the temporary road or park. To this end, please place the temporary emergency access road within a dedicated block, its width sized to accommodate the temporary road and offsets to adjacent private property (based on the current layout, the block would be a minimum of 13m wide). Resubmitted plans show this; comment remains as a reminder as you prepare the draft plan.
	R	The temporary road block has been revised to be 13 m wide as requested.
1.8	C	City standard fencing will be required adjacent to the proposed/existing private properties. Additional fencing will be required adjacent to the temporary emergency access road where the grade slopes away from the road greater than 7% (i.e.. where 3:1 terracing is currently proposed sloping away from the road surface). Details on the required fencing will be discussed at a later stage of your subdivision submission, however please note required fencing on the resubmitted concept plans. Further details of the required fencing will be discussed during engineering review of the application package.
	R	Fencing has been shown on the aforementioned reports figures and drawings. Details regarding the limits of fencing to be finalized during detail design and locations clarified in Draft Plan Conditions.
1.9	C	Note that the temporary access and trail alignment that extends beyond Block 20 must be reviewed comprehensively and supported by an Environmental Impact Study in the future (for 220 Arkell Rd subdivision). Note that the EIS must include a policy analysis to demonstrate conformity with Official Plan policies.
	R	Noted
1.10	C	All grading and other associated works must remain outside the 15m setback from the Provincially Significant Wetland. This must be demonstrated on the grading plan. The level of detail provided in the conceptual grading plan is insufficient to determine whether or not the proposed temporary access road can be constructed without impinging upon the 15m buffer. For example, at the northwest corner of Lot 20, it appears that grading is proposed right up to the 15m buffer and possibly extends into the 15m buffer. It is essential that adequate detail be provided to enable a proper assessment. If it is not possible to achieve the temporary access road outside of the 15m buffer, an Official Plan Amendment would be required.
	R	As outlined in the aforementioned report drawings and figures, the toe of slope proposed for the grading of the temporary access road is designed to match existing grade outside of the inner 15 m wetland setback.
1.11	C	Note that the temporary access and trail alignment that extends beyond Block 20 must be reviewed comprehensively and supported by an Environmental Impact Study in the future (for 220 Arkell Rd subdivision). Environmental planning staff emphasize that the proposed temporary access and trail alignment extending beyond Block 20 must be reviewed comprehensively and supported by an Environmental Impact Study as part of a future 220 Arkell Road subdivision application. At a cursory level, environmental planning staff are concerned with the extent of development and site alteration proposed within the minimum buffer of the Provincially Significant Wetland. Please review permitted use policies 4.1.2.1 and 4.1.3.4.6 in the Official Plan.

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	R	Noted.
The following additional comments are provided based on our review of the resubmitted material:		
1.12	C	Other Wetlands - City staff requested that the limit of the small wetland pocket located to the east of the existing driveway be shown on the plans (refer to Comment 4 of September 10, 2018 meeting notes). Please revise the plans to include this information
	R	The wetland previously situated east of the existing driveway was removed as part of the adjacent Dawes Ave development and was assessed as part of the field program. The GRCA approval excluded this feature as part of the wetland delineation and have since updated their online mapping to exclude this feature as a wetland; therefore, a boundary has not been applied to the current plans.
1.13	C	Future Road Connection to Dawes Avenue - Section B-B should include the Provincially Significant Wetland limit, minimum 30m buffer and 15m buffer to enable a preliminary assessment of potential environmental impacts.
	R	Section B-B included in the Stantec e-mail dated November 6, 2018 was showing the profile of the Storm Sewer outlet to the SWM Facility (SWMF) such to justify the easement width requirements and not relevant to the Future Draws Ave connection.
1.14	C	Changes to Water Balance and Wetland Hydrology - The response to storm water management comments raised by City staff (July 19, 2018) states that a runoff increase of 1 mm/year (4%) is anticipated (i.e. increased from 24 mm/year under current conditions to 25 mm/year under proposed conditions). Environmental planning staff note that the pre-development runoff rate was 17 mm/year. Therefore, a 47% increase in runoff from pre-development conditions is anticipated. Please provide an assessment of potential impacts to wetland hydrology. The response to stormwater management comments raised by City staff states that in the event of overflows from the Arkell Meadows Subdivision, a culvert under the temporary access road would convey water away from the existing subdivision and towards the wetland. Environmental planning are concerned that this may result in a negative impact to the natural heritage system and hydrologic function of the Provincially Significant Wetland. Additional information is required to enable a proper assessment.
	R	1) Refer to Comment No.1.5 response above (reverse culvert to control outlet flows to pre-development and promote ponding/infiltration). 2) As discussed in the *Stantec (2023) Revised Water Balance Calculations in Response to First Submission Comments Draft Plan Application - 220 Arkell Road, City of Guelph, Ontario* , the annual pre- to post-development runoff volume directed to the Torrance Creek Swamp from the Site is projected to increase by 6,075 m^3. The increase in post-development runoff discharged to the Torrance Creek Swamp is expected to raise surface water ponding within the wetland by no more than 0.005 m (5 mm) for a given month. This ponding is also expected to be temporary (i.e., not cumulative from month to month) as the Torrance Creek Swamp is identified to be a groundwater recharge feature (i.e., the runoff entering the wetland is expected to be infiltrated while present within this natural heritage feature). 3) Additional analysis is provided in the EIS Addendum that includes an assessment of wetland sensitivity and a detailed impact analysis.
1.15	C	The design and construction of the trail shall meet the accessibility criteria outlined in the City's Facility Accessibility Design Manual (FADM). The criteria includes maximum running slope on trails to be 5% and the maximum cross slope on trails to be 2%. The trails need to be designed to include minimum 0.6 m. wide mowed grass strips, having a cross slope of 2% away from the trail, longitudinally along both sides of the trail surface. Section 4.5.2 OUTDOOR RECREATIONAL FACILITIES of the FADM outlines the accessibility guidelines for trails. This document can be viewed at the following link: http://guelph.ca/wpcontent/uploads/Guelph_FADM_2015-06-30-FINAL.pdf
	R	The Temporary Road has been designed at slope less than 5%, with a 2% cross slope with 0.6 m mow strip, as shown on the aforementioned plans. Details outlining of the final access and trail grading to be completed during detail design and a condition of Draft Plan Approval.

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1.16	C	Conceptual Park Block Grading - Currently park block grades include slopes ranging between 3.6% – 4.9%. City's Official Plan Policy 7.3.2.4 (v) outlines a criterion that the neighborhood park site contain sufficient table land (approximately 80 per cent of site). Park block layout and grading would need to be revised to be consistent with the policy 7.3.2.4 (v) of the Official Plan regarding table land for a neighborhood park to be 80% of the site and the local service policy as mentioned above.
	R	As shown on the plans included in the aforementioned report, the Park grading has been revised to be less than 3%.
2.0	C	In several sections of the report there are erroneous descriptions of the proposed connection between Street A and Dawes Avenue (through the walkway block and Block 20 in Arkell Meadows Subdivision. Please update the descriptions and assumptions cited: the connection between Street A and Dawes Avenue is not intended nor shall be used as interim, construction or maintenance access to the site from Dawes Avenue. Discussion between the City and the Applicant prior to the formal submission of this application discussed (but did not confirm or approve) use of this area for a temporary emergency access route and walkway block, along with a portion of it as maintenance access to the SWMF, with restoration to a standard walkway block once the eastern road access is connected.
	R	References to the access have been clarified to maintain the terminology as "Temporary Emergency Access Road".
Transportation Planning		
3.0	C	Base year traffic volumes: As per City's Traffic Impact Study guidelines, the 2016 traffic counts used in the TIS study are considered outdated as they were collected over two years ago. City has 2018 traffic counts at the intersection of Arkell Road and Victoria Road that could be used for the base year scenario. Other intersections should be adjusted and smoothed based on these 2018 counts. Please contact City staff (Munshif Muccaram) for details on how to acquire these 2018 counts.
	R	Pre-consultation request submitted to the City on April 18, 2018, suggested the use of 2016 counts for City's Approval. There was no direction against using 2016 counts or to conduct new traffic counts. The 2016 counts were used for consistency, because these counts had been collected at the same time (Oct 5/6, 2016) for all the study area intersections; and they were also used in the background development traffic studies included in this subject (220 Arkell) TIS. Also, Paradigm conducted 2018 (April) traffic counts only at Arkell Road & Victoria Road for a different Client and TIS report. A comparison of 2016 and 2018 Counts at Victoria/Arkell indicates the respective TMCs are very close, with 2016 counts marginally higher for a number of TMCs.
4.0	C	Victoria Park Village Road: This proposed east-west local road is not part of the area road network and it should not be assumed in the study. The subject development could access Victoria Road via Decorso Drive.
	R	What is identified in the TIS as Victoria Park Village Road is in fact Decorso Drive, which is the access connection to Victoria Road for the Victoria Park Village (VPV) Development (former Victoria Park West Golf Club). As can be seen in traffic figures in Section 3 and Section 5, development traffic from both VPV and the subject development (220 Arkell Rd) are assigned to the same Victoria Road connection (i.e. Decorso Drive).
5.0	C	Road widening on Victoria Road from 3 lanes to 4 lanes between MacAlister Boulevard and Clair Road: The TIS study indicates this road widening was identified in the 2018 "Guelph Development Charges Background Study" which is an incorrect interpretation. City has not allocated any capital money for the road widening for this segment of Victoria Road before the year 2031. Victoria Road between MacAlister Boulevard and Clair Road should be assumed to have one northbound through lane under the 2031 future scenario. The traffic simulation and signal warrant analysis must be adjusted accordingly.
	R	DC misinterpretation error is noted and regretted.

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6.0	C	EB dual left-turn lanes at the intersection of Arkell Road and Victoria Road: Transportation Services staff do not support the dual eastbound left-turn lanes at this intersection for the following reasons.
		a) There is only one receiving lane on Victoria Road in the northbound direction for all future scenarios.
		b) The dual eastbound left-turning traffic would require a fully protected signal phasing plan in the eastbound direction on Arkell Road. Moreover, the increased walking distance on Arkell Road as a result of widened pavement would require longer walk time for pedestrians to cross the west leg. These adjustments to the signal timing plan would result in less green time being allocated for traffic flows on Victoria Road, thus impeding the mobility on Victoria Road. The intersection would experience prolonged delays and traffic queues in the north-south direction on Victoria Road.
		c) The increased walk distance on Arkell Road is a safety concerns for pedestrians (especially for students) who want to reach the commercial plaza and bus stops on the south side of Arkell Road.
		d) The TIS recommends a raised center median on Arkell Road to delineate the dual left-turn lanes. This median would force the existing full access to become right- in/right-out only for the commercial plaza.
		e) The road geometry would have to be altered on the east leg of the intersection so as to align with the dual left-turn lane configuration. Road widening would be required from within the Township.
	R	The improvements identified in Section 4 of the TIS for the Victoria/Arkell intersection are suggestions for the City's consideration to address operational issues under existing and future background traffic conditions, independent of the subject development. Based on its own traffic impacts (Section 5 of the TIS), the subject development does not require any external road system modifications.
7.0	C	New traffic signal lights at Decorso Drive and Victoria Road: The signalization at this intersection will be determined upon the full build out of developments in the surrounding area.
	R	Noted.
8.0	C	New traffic lights at the high school driveway and Victoria Road: The signalization at this intersection is required as per the City’s letter to the same consultant with regard to the high school development, dated December 8, 2017.
	R	Noted.
9.0	C	New traffic lights at Colonial Drive and Arkell Road: The signalization at this intersection will be determined upon the full build out of developments in the surrounding area.
	R	Noted.
10.0	C	Synchro simulation: Synchro simulation was carried out with 7 seconds as the minimum green time for Arkell Road in its through and right movement. However, the side street minimum green should be as 10 seconds as per city’s signal timing plan.
	R	Noted.

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Sustainable Transportation		
11.0	C	To increase the pedestrian usability of this subdivision, please consider a 20m ROW with sidewalks on both sides of the street.
	R	Current standard has been proposed and continuation of existing road structure from development lands to the north and matches existing Draft Plan approved road stub. The proposed 17.0 m ROW further minimizes the impact to the Ecological linkage by 3 m vs the 20 m ROW suggested.
12.0	C	Please explore options for connecting the future walkway to the private laneway in Block 32, and for providing a non-vehicle connection from Block 32 to the future ROW to the east.
	R	There is a 3 m grade change from the walkway to the anticipated road network within Block 32. To create a trail connection the slope would be too steep. Preference is to avoid perimeter walkway connections to prevent neighborhood short cutting through private condo developments. Site layout can be updated to support a possible road connection to the east should a future road be extended. It is suggested further details of this Future Multi-Family Block be considered during the Site Plan process.
13.0	C	Ensure Active Transportation connections to adjacent developments are maintained: this can be shown as part of the Draft Plan details with dotted lines and annotations noting proposed and future connections. Additional details can be provided through detail design of the subdivision and during future site plan applications.
	R	Active Transportation connections is not typically shown on Draft Plans. This linework has been added to our Conceptual Lot Grading Plan.
Environmental Assessment		
14.0	C	The qualified person (QP) must submit a “Reliance Letter” to indicate that despite any limitations or qualifications included in the reports, the City is authorized to rely on all information and opinion provided in the reports submitted to the City.
	R	Updated Phase I and II Reports along with a reliance letter has been provided with this submission for your use.
Source Water Protection		
15.0	C	The property is located in a WHPA-B with a vulnerability score of 8. The property is not located in an Issue Contributing Area. Please contact the Project Coordinator to complete a Policy Applicability Review at 226-820-3520 or abby.spielmacher@guelph.ca (http://guelph.ca/wp-content/uploads/SWP_Section59ReviewRequest.docx)
	R	Note that Section 6.4 of Stantec's (2019) *Hydrogeological Assessment* report provides a discussion of Source Water Protection policies as it pertains to the Site. A Section 59 Review has been completed and will be submitted to the Project Coordinator along with this submission to the City.
16.0	C	Note: Ensure that any private water supply or monitoring wells that are no longer in use are abandoned in accordance with O. Reg. 903. In accordance with Grand River Source Protection Policy CG-CW-37, the applicant will need to indicate what DNAPL (if any) or other potentially significant drinking water threats will be stored and/or handled on the property. A Risk Management Plan may need to be developed.
	R	All private water supply and monitoring wells will be decommissioned prior to area grading in accordance with Ministry requirements.

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Waste Water Operations		
17.0	C	Due to high ground water elevation, please wrap all MH's in water proof membrane.
	R	Item to be addressed as part of detailed design, please provide spec to follow or reference in Development Manual. Note most structures are designed with a gasket seal
18.0	C	Add property line MHs to Block 32 and ensure gravity flows to proposed City sewers.
	R	Additional property line MH's have been added for Block 32 on the conceptual plans and will be identified during detail design.
Functional Servicing and Stormwater Management Report		
Water Servicing		
19.0	C	The current water servicing design calls for a single-feed watermain to service the entire subdivision (currently 91 units) until such time as the adjacent lands are developed and watermain looping is available.
	R	Correct. Based on our current analysis
20.0	C	Please note that, based on our review of the city's existing watermain modeling, there is potential for marginal water supply pressures in proposed development under certain conditions such as peak hour demand scenario at locations with elevation greater than 346 m height above mean sea level (AMSL) and average day demand (ADD) scenario at locations with elevation greater than 339 m height AMSL in the existing water system.
	R	The proposed development grades range up to +/-339.8. Concerns to be reviewed with City as this will result in a marginal shortage in psi, (0.7m=1.0 psi) during the average day demand.
21.0	C	Drawing C-100 does not show storm sewers servicing Lots 16-18 and 29-31: what is the servicing strategy for these lots?
	R	As discussed with the City storm service laterals are not proposed similar to development strategy to the north such to avoid filling the site an additional 1.5 m to provide a gravity outlet. Sump pumps will discharge to grade. Section 6.0 of the Revised FSR has been updated to clarify this.
22.0	C	Storm sewers do not have the required depth of cover, as per the DEM. Please update the design.
	R	See response to Comment #21 above.
Stormwater Management		
23.0	C	It appears that the Torrance Creek Sub watershed Study criteria are not being met under the current design. The following are some items noted in the TCSWS:
		a) The site is located within sub watershed drainage areas 105, 106 and 110, in Zone 2.
	R	Agreed, this is noted in the report.
	C	b) An infiltration target of 150 to 200 mm/year is suggested for Zone 2.
	R	Water balance calculations presented in the *Revised Water Balance Calculations in Response to First Submission Comments, Draft Plan Application - 220 Arkell Road, City of Guelph, Ontario* (Stantec, 2023) indicated that the annual pre-development infiltration volume occurring at the Site is 15,433 m^3, for an equivalent recharge rate of 221 mm/year.
	C	c) Existing infiltration levels are to be maintained as part of a stormwater management plan for future development to protect groundwater resources and maintain current hydrologic functions.

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	R	Existing infiltration levels are exceeded on-Site through proposed rooftop galleries and end of pipe infiltration.
	C	d) Preliminary infiltration targets are summarized in Table 6.2.3 of the sub watershed study. These targets should be refined during the development of stormwater management plans through infiltration testing and analysis. Arkell Road to Torrance Creek = 150 to 200 mm/year.
	R	This target has been refined as per the pre-development monthly water balance (*refer to Stantec's (2023) Revised Water Balance Calculations in Response to First Submission Comments, Draft Plan Application - 220 Arkell Road, City of Guelph, Ontario*), which resulted in a 221 mm/yr target for the catchments contributing to the Torrance Creek Swamp.
	C	e) Peak flow control for all design events (post to pre, 2 to 100 year events)
	R	As per Table 5 in the FSR, quantity control is provided for the 2,5, and 100yr events. Any events between (i.e. 10, 25, and 50) are also assumed to meet the target.
	C	f) 24 hour extended detention for 25 mm rainfall event, if necessary (given infiltration levels and water quality requirements)
	R	25 mm, 4 hr Chicago Event has been used to size infiltration faculties as well as confirm drawdown for erosion control requirements. From the latest analysis, the 25 mm event drawdown time is ~30 hrs; therefore meeting the >24 hour requirement. This assumes no infiltration, so in reality most or all of the 25 mm event runoff will be infiltrated.
	C	g) Catchment 106 – flow controlled to pre-development levels for 1:100 – 780m3/ha (volume control)
	R	This value is from the controlled scenario in the original TCSS, which also states that these values "must be confirmed when the actual design procedures are conducted". The design of the proposed SWM pond has been performed to meet the target of controlling flow to pre-development levels. Back calculating for this unit volume control value using the active storage volume during the 100-yr storm divided by the drainage area leads to 825 m³/ha, which is in the same range as the 780 m³/ha outlined in the subwatershed study.
	C	h) Catchment 110 – flow controlled to pre-development levels for 1:100 – 730m3/ha (volume control)
	R	See response to comment above.
	C	i) New development should provide controls against temperature increases.
	R	Infiltration measures on site will reduce temperature as significant portion of runoff to be infiltrated. Thermal impacts are driven by small events (<10mm) and therefore infiltrating the 25mm event (larger volume) will reduce the downstream impact. FSR text has been updated to reflect this.
24.0	C	The dry SWMF is not designed as per DEM or MECP design standards. Please review the design and update accordingly. Some of the design elements that need to be reviewed include (but are not limited to):
	C	a) SWMF design as proposed appears to be a cross between a dry pond and an infiltration basin. The pond should be designed as an infiltration basin (if soil and groundwater conditions permit), or the detention and infiltration elements should be separated.
	R	SWMF has been updated to meet design requirements for a dry SWMF.
	C	b) Report generally lacks the level of SWMF design detail expected at this stage.
	R	Additional details on the SWMF design have been included in the updated FSR and are provided on a stand alone Drawing No. C-410.
	C	c) Forebay design inconsistent with MECP design guidance in Sections 4.62 and 4.65 (not separated from detention cell, too shallow), and design details do not appear to be included in the report (settling, dispersion, width, etc.)
	R	Forebay sizing details have been included in latest submission to meet MECP guidelines.

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	C	d) Forbay bottom elevation is below the indicated seasonal high groundwater table: does the forbay require a clay lining, and would there be buoyancy concerns?
	R	SWMF has been raised and the new forebay bottom is now above the high groundwater table. Provision for a clay liner has been identified for the forebay. The thickness of the liner will be determined during detail design based on soils available and to address buoyancy concerns.
	C	e) Very long drain-down times are anticipated: what is the impact when back-to-back storm events occur?
	R	SWMF design has been updated with drawdown times now more reasonable. Refer to Revised FSR.
25.0	C	The water balance shows an infiltration deficit and a runoff exceedance, but there does not appear to be any discussion of the impacts due to less infiltration (and timing of that infiltration due to the high groundwater), or the capacity of the receiving system to handle the extra runoff without negative effects.
	R	The infiltration strategy and water balance has been updated. There is now an infiltration surplus through rooftop infiltration as well as an end of pipe infiltration gallery. Refer to Stantec's (2023) updated *FSR* and *Revised Water Balance Calculations in Response to First Submission Comments Draft Plan Application - 220 Arkell Road, City of Guelph, Ontario* memo for details on water balance and infiltration strategy, including discussion on reduced post-development runoff surplus to the wetland.
26.0	C	The SWMF outlet design does not appear to have taken into account the type of receiver: as the receiving system is a swamp, and not a creek, drain or other similar system, special care is needed in the design of outflow. See additional comments from Environmental Planning on this matter. Coordination is required between the civil and environmental consultants to ensure the SWMF (and SWM throughout the site) are designed with the receiving system in mind.
	R	Most flows (runoff events up to and including the 25mm event) will be infiltrated when the infiltration gallery is open (non-winter months) and therefore little runoff will be anticipated during these times. Additionally, a surface spreader swale is proposed at the outlet of the SWMF to distribute the runoff in a sheet flow pattern to mimic existing conditions and reduce concentrated flow to the wetland that can cause scour and create channelized flow.
27.0	C	The majority of the intended infiltration for this site has yet to be determined feasible (currently identified in Section 5.7 as to be detailed later). Additional development of the overall site infiltration design and feasibility is required at this time, to ensure SWM criteria can be met. For example, proposed infiltration rates appear to be based on infiltration galleries as shown (in every lot and in many locations within Block 32), however some of these areas will not have adequate separation to the ground water.
	R	Lot Infiltration galleries have all been checked and grades raised where required to ensure 1m separation to groundwater. Details are included in the latest FSR and Conceptual Grading Plan C-400.
28.0	C	The stated SWM criteria includes assessing thermal impacts, but this does not appear to have been considered as part of this study. This will need to be considered now, as mitigating thermal impacts may require SWMF design changes and/or additional lands to accommodate additional infrastructure.
	R	Wording has been added to the FSR. Thermal impacts will be mitigated through the EOP infiltration.
29.0	C	In Section 5.5.1.2, in the description of Catchment 206, it is written “This area accounts for the 10 m wide access to the site from Dawes Avenue, which will eventually be reduced to just a 3 m wide pathway.” Please update the language used here, as the current language could imply more than is intended. We suggest something along the lines of “This area accounts for a portion of the walkway block between Street A and Dawes Avenue.”
	R	Report text updated.

#	C/R	Comment / Response
30.0	C	Section 5.6.1, please clarify the intended SWMF design, as the 2nd paragraph indicates the forebay is designed to achieve enhanced water quality targets, and the 4th paragraph indicates the SWMF will only achieve 60% TSS removal.
	R	SWMF Design and Report has been updated. Dry SWMF will achieve 60% TSS removal as per MECP Guidance.
31.0	C	Section 5.6.1: OGS design discussion indicates that the OGS will be designed to achieve 60% TSS removal. Please review the OGS selection and design to ensure the maximum possible TSS removal based on that technology under ETS testing protocols and anticipated surface loading for the 25mm storm, and apply the anticipated TSS removal or 50%, whichever is lower.
	R	OGS design has been updated to provide 70% TTS removal per ETV particle distribution and testing; however, the lower 50% removal rate was used in overall determination.
32.0	C	To assist with the review, please include a table of inlet/outlet flow rates at key transition points in the SWMF design under various storms. For example, flow at inlet to OGS, inlet of forebay, inlet to detention pond, inlet and outlet of the orifice (outlet of detention pond), at outlet of overflow weir, etc.
	R	Flow has been provided into and out of the SWMF for the various design storms in the FSR, with more detailed flows present in the modelling files included in the appended material. The flow into the forebay and into the main pond will be the same. Flow through the OGS will be the same as flow into the SWMF for up to the 5-yr event, while all storms greater than the storm sewer capacity will flow into the forebay/SWMF via overland flow.
33.0	C	Please add the 25mm storm to Table 5.
	R	25 mm event has been added to Analysis and Report.
34.0	C	Table 5, line item 1 shows a footnote, but this footnote is not found in the report.
	R	The footnote label is shown as an error, there should be no footnote. Report updated.
35.0	C	In Section 5.6.3 and on Figure 10, it is suggested that there is an existing culvert along the rear property line of Block 20, Arkell Meadows Subdivision, with a reverse slope, and the subsequent drainage design for this area is based on this premise. Our records show a CB in this location with a CB lead along the rear property line to infiltration galleries. Please verify. Additional detail is needed for this area, including additional detail on the servicing and grading plans.
	R	Previously noted as Figure 10, now Figure 9 and the remaining plans have been updated to reflect only one proposed culvert to convey drainage east of the proposed Temporary Access to the wetland to the west. The inverts of this culvert remain the same such to promote ponding above the infiltration CB within Block 20 of the adjacent development, but allowing an opportunity to spill to the wetland as required. It was confirmed that there is no existing culvert in this location.
36.0	C	Section 5.7.3: why was a 10mm storm event chosen for extended detention and infiltration? As noted above, Torrance Creek Sub watershed Study criteria identify minimum infiltration targets, and also specifies maintaining pre-development infiltration rates, plus the extended detention of the 25mm storm event.
	R	The 10 mm event was previously used for infiltration sizing in the EOP facility and thermal mitigation. The design has since been updated to use the 25 mm event to design infiltration as well as erosion control (extended detention drawdown).

#	C/R	Comment / Response
37.0	C	In-situ infiltration testing is required, as per the DEM. Infiltration rates cannot be determined based on laboratory or particle size distribution results. Please perform in- situ testing as per the DEM and update the findings accordingly.
	R	In-situ infiltration testing is anticipated to be performed at design depth at the infiltration gallery locations to confirm infiltration rates during detail design. Note that in-situ infiltration testing of surficial soils (~0.55 m BGS) completed near MW101-22, MW102-22, MW103-22, MW104-22, MW105-22, and MW106-22 was completed in May 2022 and noted in the water balance assessment to justify our proposed infiltration strategy.
Drawing C-400 Conceptual Grading Plan		
38.0	C	Is a culvert needed under the pathway at the northwest side of the SWMF? Drainage arrows and information in the report indicate the area north of the pond drains to the west, but the conceptual grading information indicates it will not get there, but will spill into the lots to the north.
	R	Culvert and drainage slopes added to clarify drainage pattern
39.0	C	Please label the slope within the SWMF differently than the other 3:1 indicated slopes (based on other submitted information indicating the SWMF slope sides are shallower).
	R	Pond sloping has been adjusted per City of Guelph DEM, labels provided on Grading Plan
40.0	C	Please note that the combined maintenance access and public pathway must be design as per the current DEM; please update the design accordingly
	R	The maintenance access / public pathway has been adjusted to provide 6:1 slope on both sides of the pathway and 0.6 m mow strip per the DEM
41.0	C	Report and plans show the majority of Block 33 draining to the northeast, however the conceptual servicing and grading plans show this block has no drainage outlet. How is this drainage being managed?
	R	Future outlet configuration has been added.
Hydrogeological Assessment		
42.0	C	Engineering echoes comments provided by Environmental Planning for this report.
	R	Noted.
Geotechnical Investigation		
43.0	C	Groundwater levels were monitored in 2017 and 2018; please include an update to at least December 2020 as part of the next submission.
	R	Groundwater level monitoring data is only available for BH02-17 and BH04-17 from April 13, 2017 to May 9, 2018 as presented in the Hydrogeological Assessment report (dated May 28, 2019). For BH01-17 and BH03-17, groundwater level monitoring data is available up to April 10, 2019. However, the data collected to date covers two spring freshet periods at BH02-17 and BH04-17 (i.e., 2017 and 2018), and three spring freshet periods at BH01-17 and BH03-17 (2017, 2018, and 2019). We also note additional monitoring wells were installed in May 2022 to support our Water Balance assessment complete with updated hydrographs. As such, Stantec is confident that the high groundwater table condition has been captured / established at the Site for detail design purposes.