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Public

City of Hamilton
71 Main Street West
Hamilton, Ontario
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Re: Costco Stoney Creek Parking Lot Expansion (Forum Lands) – Functional Servicing Brief

Dear Sir,

WSP Canada Inc. has prepared this Functional Servicing Brief in support of the Site Plan Approval application for the proposed Costco parking lot expansion on the vacant parcel immediately north of the existing Costco lands at 1330 South Service Road, Stoney Creek. The proposed development consists of a parking lot expansion on approximately 0.88 ha of land and has been designed to integrate with the existing municipal infrastructure and previously approved stormwater management facilities serving the Costco site.

1.0 Existing Conditions

The subject property is a 0.88 ha vacant parcel located immediately north of the existing Costco Wholesale Warehouse property at 1330 South Service Road. The lands are bounded by vacant development lands to the north, existing commercial development to the east, the existing Costco property to the south, and Vince Mazza Way to the west. The site is currently undeveloped and generally flat with some material stock piles, with existing ground elevations that range between approximately 83.8m+/- and 86.8m+/- . No buildings, sanitary services, or stormwater management facilities currently exist on the subject parcel. An existing watermain was identified within the subject property during the topographic survey. Discussions with the adjacent landowner indicate that the watermain does not belong to, nor serve, the adjacent property. While the operational status of the watermain has not been confirmed, it is proposed to be removed as part of the site development works.



2.0 Grading and Drainage

The proposed grading design has been developed to provide positive drainage throughout the parking expansion, while maintaining compatibility with adjacent properties and existing Costco lands. Site grades direct runoff toward the onsite catch basins and convey to infrastructure for infiltration and storm attenuation, before discharging to the existing drainage infrastructure within the existing Costco property.

Grading along the property boundaries will tie into existing elevations, with side slopes generally limited to a maximum of 3:1 if required. There is a minor exception to the northern limit, where 3:1 slope onto the adjacent land is required to match existing ground. However, our client has coordinated with the development to the north to accept the required sloping with the high point ridges on the property line.

To accommodate existing drainage conditions along the eastern property boundary, a drainage swale is proposed along the eastern limit of the parking expansion. The proposed development will continue to accept and convey the boundary drainage currently received from the adjacent easterly lands. The swale will convey runoff northward along the property line before transitioning eastward and discharging to the existing CB1 catch basin located on the adjacent property. Minor grading works and swale improvements are required on the easterly parcel to establish a positive drainage path to CB1. To facilitate drainage conveyance, a portion of the existing curb adjacent to CB1 will be removed and replaced with depressed curb, allowing runoff within the proposed swale to enter the existing catch basin. The client is currently coordinating these proposed works with the adjacent eastern landowner. Based on the analysis completed to date, no significant adverse stormwater management impacts to the easterly property are anticipated as a result of the proposed grading and drainage modifications. The drainage area tributary to the proposed boundary swale is minor, approximately 0.02 ha, and therefore represents only a small contribution to the adjacent property's existing drainage system. Additional details and supporting analysis are provided within the Stormwater Management Report submitted under separate cover.

3.0 Emergency Overland Flow Routing

The grading plan generally preserves the intent of the major overland flow system. The parking lot expansion will direct majority of the emergency overland flow towards Vince Mazza Way. The emergency flow will then continue north along Vince Mazza Way to the existing culvert under the highway as per existing conditions. A small portion of the site boundary drains southward toward the existing Costco property, where runoff is directed to the established emergency overland flow route and spill point associated with the existing Costco development.



Proposed ponding areas and grading are designed to convey emergency flows to Vince Mazza Way and the existing Costco development's overland flow path, preventing adverse impacts to adjacent lands.

Regarding the eastern drainage swale, the drainage area is minor at approximately 0.02 ha. Emergency overland flows associated with the swale will be conveyed by the adjacent easterly property's established overland flow route through the existing parking field and driveway entrance toward South Service Road. Flows will ultimately discharge to the existing MTO drainage culvert, consistent with existing drainage conditions. Given the limited tributary drainage area and the use of an existing major drainage pathway, no significant impacts to the existing emergency overland flow are anticipated.

4.0 Water and Sanitary Servicing

No new municipal watermain infrastructure is required to support the proposed parking lot expansion. The development does not introduce additional building area or sanitary wastewater generation, and therefore no modifications or extensions to the existing sanitary servicing system are required.

5.0 Stormwater Management Summary

Stormwater management for the proposed parking lot expansion is addressed in the Stormwater Management Design Brief under separate cover. The design incorporates underground storage chambers, surface ponding, an oil/grit separator, and a bioswale to provide water quantity, water quality, and water balance control. The proposed system controls post-development runoff to the allowable release rate, provides the required infiltration volume, and satisfies the applicable City of Hamilton and Hamilton Conservation Authority stormwater management criteria

The proposed stormwater management strategy has been designed to conform with the existing Winona Crossing stormwater management framework. Key components are summarized below:

- **Runoff Quantity Control** – The proposed stormwater management system has been designed to control post-development runoff rates in accordance with the approved servicing criteria for the Winona Crossing development. Underground storage chambers ADS StormTech MC-3500 and surface ponding (limited to maximum 0.3m depth) are proposed to attenuate runoff and manage peak storm flows.
- **Water Quality Treatment** – Runoff from the parking expansion will receive water quality treatment through an OGS and isolator row at the underground storage chamber.

- Water Balance / Infiltration – A bioswale is proposed to provide infiltration and water balance control.
- Major Storm Management – The proposed grading and drainage design incorporates emergency overland flow routes to safely convey runoff during major storm events while maintaining compatibility with the existing drainage system.

6.0 Conclusion

Based on the proposed grading, drainage, and stormwater management measures, the parking lot expansion can be adequately serviced. No new watermain or sanitary sewer works are required. The proposed stormwater management facilities can provide quality, and quantity controls, and the emergency overland flow system has been designed to direct flows to locations without adverse impacts to neighbouring properties.

Sincerely,


Norris Wong
Project Manager
CC:

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