

MEMORANDUM

DATE: June 21, 2013

TO: Jill Thacher, City Planner
Alison Heatley, Senior Project Engineer

FROM: Troy Baughman, P.E., Project Manager
Public Services Area – Systems Planning

RE: Glendale Condominiums Site Plan
Sanitary Sewer Capacity Analysis
File No. SP13-010

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The City's hydraulic model was used to analyze the impacts to the downstream sanitary sewer system as a result of the proposed development.

Analysis Findings:

Trunkline Sewer System: Capacity constraints during wet weather events have been identified in the trunkline sewers downstream from this development. Therefore, in accordance with the Development Sewage Flow Offset Mitigation Program, footing drains must be disconnected to offset the proposed flow generated by this development (as well as a 20% system recovery factor). These footing drain disconnections must be performed within the Liberty-Washington or High Level sewersheds upstream of where the development flows connect to the High Level trunkline (intersection of First Street and Washington Street; MH ID 71-70467). **This condition shall be included in the Site Development Agreement for this project.**

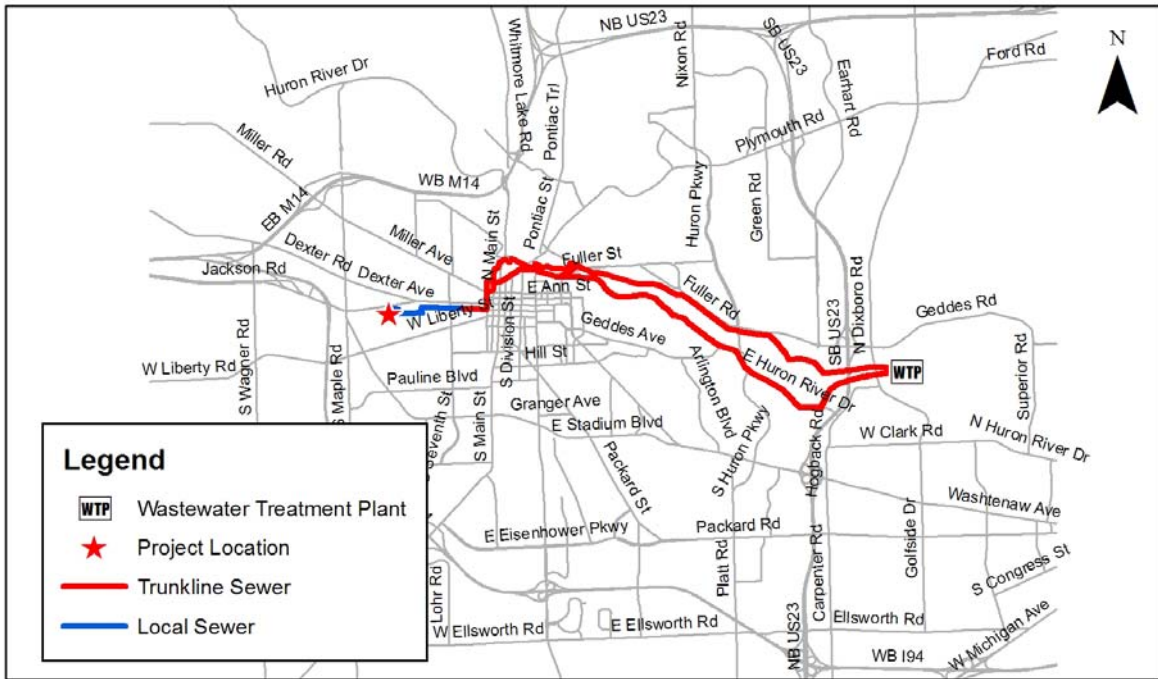
Local Sewer System: Results from the hydraulic modeling indicate sufficient capacity exists in the downstream local sanitary sewer system to support the proposed development.

Background & Modeling Results:

The proposed development is located at the northwest corner of Glendale Drive and Charlton Avenue within the Liberty-Washington sewershed. Figure 1 shows a map of the downstream sanitary sewer system based on the proposed connection to the City's existing sanitary sewer system at the intersection of Glendale Drive and Abbott Avenue.

The sanitary sewer mitigation calculations submitted by the petitioner indicate the increase in average daily flow for this development will be 4,900 gpd. A peaking factor of 4 was used to convert the average flow to a design peak flow of 19,600 gpd (0.03 cfs) which was used in this analysis.

Figure 1 – Sanitary Sewer Map



The results from the model simulation are shown in Table 1 below. The data shown includes the number of pipe segments where the modeled flows exceeded the City’s criteria for conveyance capacity, including the number of pipe segments in the downstream sewer system where the calculated flows exceed 90% of the sewer design capacity, and the number of sewer pipes where the expected surcharging exceeds 1 foot above the crown of the pipe.

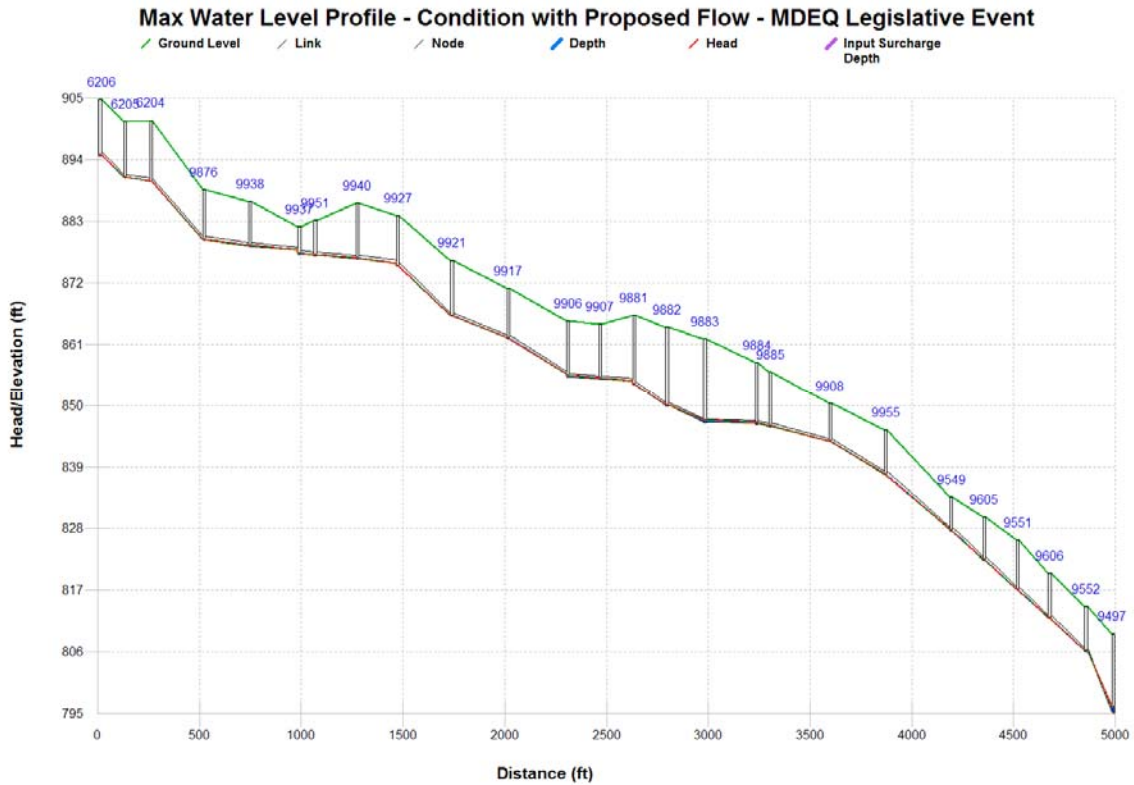
Table 1 – Number of Pipes with Modeled Flows Exceeding Capacity Criteria

	Pre-Development Conditions		With Development Flows	
	Conveyance > 90%	Surcharge > 1'	Conveyance > 90%	Surcharge > 1'
Local Sewers	0	0	0	0
Trunk Sewers	12	7	14	7

As indicated in Table 1, capacity constraints during wet weather events have been identified in the trunkline sewers downstream from this development. Therefore, in accordance with the Development Sewage Flow Offset Mitigation Program, footing drains must be disconnected to offset the proposed flow generated by this development (as well as a 20% system recovery factor). These footing drain disconnections must be performed within the Liberty-Washington or High Level sewersheds upstream of where the development flows connect to the High Level trunkline (intersection of First Street and Washington Street; MH ID 71-70467). This condition shall be included in the Site Development Agreement for this project.

For the local sewer system, sufficient capacity exists to support the additional flows generated by this development. Figure 2 below shows the pipe profile and modeled hydraulic gradient level for the local sewer system with the additional flow proposed by this development.

Figure 2 – Local Sewer System Profile and Modeling Results



TB: (Z:\Projects\Glendale\Sanitary Model\Glendale_sanitary01.doc)

cc: Cresson S. Slotten, P.E., Manager (via Email)
 Anne Warrow, P.E., Project Manager (via Email)
 Jay Zawacki, CDM (via Email)