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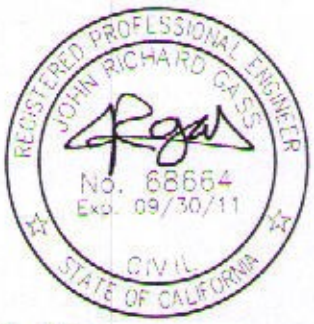

Sewer System Analysis

Date: November 10, 2009

For: City of Ontario
Municipal Utilities Agency
Ontario, CA

By: John R. Gass, P.E.
Project Manager
Hunsaker & Associates Irvine, Inc.

Project: **Tract 18460**

Hunsaker & Associates Irvine, Inc. (H&A) is pleased to submit the Sewer System Analysis for Tract 18460. This analysis has been prepared to describe the proposed impacts to the existing sewer system Riverside Drive downstream of the project. The aforementioned project is a proposed 41.0 acre mixed use development consisting of 7.7 acres of high density residential and 33.3 commercial development. The project lies within the jurisdiction of the City of Ontario and their standards have been used for this report.

This evaluation is based on the information located within the City of Ontario Old Model Colony Sewer Master Plan (SMP), dated April 2008. The SMP included the subject property within the sewer system hydraulic analysis; however the SMP included the entire 41.0 acres as commercial development. The subsequent discussion will identify the proposed impacts to the existing sewer system in Riverside Drive.

Project Location

The mixed use project Tract 18460 is located in the City of Ontario and is bounded by Riverside Drive to the south, Milliken Avenue to the east, and State Route 60 to the north.

Summary of Findings

1. The proposed land use change to the project will increase the estimated ultimate condition sewer flows in the existing sewer mains in Riverside Drive as identified in the SMP. The ultimate Average Dry Weather Flow (ADWF) from the project was estimated to be 0.0820 mgd in the SMP and is proposed to be 0.0974 mgd. ***The flow increased by 0.0154 mgd***. The subsequent items will discuss the estimated impacts.

2. The SMP identified the hydraulic deficiencies in the existing sewer system during Pear Dry Weather Flows (PDWF) on Table 7-1 and Figure 7-1. The only downstream reach identified as being deficient was reach no. 39 and was calculated to have an ultimate ADWF of 0.2901 mgd. With the additional flow added to this reach, the ADWF increased to 0.3055 mgd and the PDWF increased to 0.6718 mgd. ***The new sewer flow represents an increase of approximately 5%.***

3. The SMP identified reach 39 as a 10-inch pipe at 0.32% with a calculated PDWF d/D of 0.67. With the additional flow added to this reach the resulting d/D would be 0.70. H&A believes that the estimated sewer flow for this reach falls under acceptable ranges within safe operation parameters of the sewer system; however, The SMP recommended upsizing the sewer reach to 12-inch. Based on the calculated flows in the SMP the calculated d/D in the 12-

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inch pipe would change from approximately 0.49 (with SMP flows) to 0.51 (with the proposed flows from Tract 18460). ***No upsizing will be required with the additional flows from the project.***

We sincerely trust these calculations will provide sufficient evidence that the proposed changes to the land use within the proposed Tract 18460 will have insignificant impacts to the existing sewer system in Riverside Drive as identified in the City of Ontario Old Model Colony Sewer Master Plan. Please contact me at (949) 768-2579 if you have any questions.

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