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Memorandum

To: Corey Andrews
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Date: July 2, 2015

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Subject: AAT Solana 101 Mixed Use Project – Sewer Study Peer Review

Background

The City of Solana Beach is redeveloping a site that consists of approximately 2 acres and is located north of Dahlia Drive between Sierra Avenue and Highway 101. The proposed land use includes mixed use, including 2 and 3 story commercial office space, retail and restaurant space, and multi-family residential space. Also proposed is a 2-story underground parking structure.

A study titled *Coast 101 Mixed Use Project – Sewer Study*, was prepared by Stuart Engineering in 2012, to determine the impact of the proposed development to the existing wastewater collection system. This technical memorandum serves to provide a summary of the review performed by the Atkins team of the sewer study. The study was reviewed to evaluate the methodology implemented to determine the projected flows, adequacy of sewer system that is to serve the proposed development and verify its compliance with the City design standards and or other applicable requirements.

Existing Sewer System

The project site previously consisted of an occupied trailer park, 2 single family residences, and commercial properties. Based on the information presented in Appendix A of the sewer study, it appears the site is served by the existing wastewater collection system that includes approximately 620 feet of 6-inch, 1,040 feet of 8-inch, and 1,095 feet of 10-inch sewer main. The analysis also indicates that wastewater flows generated from the project site drain in a southerly and westerly direction into the 8- and 10-inch wastewater pipelines located along Dahlia Drive and S. Sierra Avenue, respectively.

Based on the hydraulic analysis, it is proposed that all flows generated by the new development will drain westerly to the existing 10-inch wastewater pipeline located along S. Sierra Avenue.

Sewer Design Criteria

The design criteria used in preparation of the above referenced sewer study included the most current version of the Water Agency Standards (WAS) at the time the study was prepared, including Section 4.2, Sewer Planning, which was dated September 7, 2004. Since the study

was prepared, Section 4.2 of the WAS has been updated, with the latest version dated July 28, 2014.

Based on the review of the more current version of the WAS and the criteria used in the study, it appears the criteria remain consistent and applicable. Unit generation factors are in accordance with the factors included in Table 4-2-1 for both commercial and residential uses and the proposed land uses for the project. Peaking factors also remain unchanged and applicable.

Wastewater Flow Projections

The hydraulic analysis incorporates the projected flows for the proposed project based on the land use type. Sewer generation factors used to project flows for each land use type are in accordance with the recommended factors used in the current WAS design guidelines per category.

Overall, it is estimated that approximately 8,219 gallons per day (gpd) of wastewater flows will be generated by the project and proposed land use type. This is an increase of approximately 2,890 gpd from the existing 5,329 gpd flows based on the previous land use type. The projected flows are less than 0.01 million gallons per day (MGD). Based on Figure 4-2-1 of the WAS guidelines, a peaking factor of 3.5 is applied to the estimated flows. This results in an estimated peak flow of 0.03 MGD.

Hydraulic Analysis

A hydraulic analysis was performed based on the estimated flows for the proposed project to determine the adequacy of the existing wastewater system. The analysis incorporated feature data pertaining to the existing system including pipe diameter, slopes, and depth.

Based on the review of the hydraulic analysis results, it appears that the proposed project will have minimal impact on the existing wastewater collection system. Depth-of-flow to diameter ratios (d/D) for each pipeline segment and minimum cleaning velocities remaining unchanged. With implementation of the proposed project, the existing system will operate within the required design requirements.

Conclusion

Review of the *Coast 101 Mixed Use Project – Sewer Study*, prepared in 2012, which evaluated the impact of the proposed development to the existing wastewater collection system, remains applicable for the currently planned improvements. Though the WAS standards and criteria have been updated since the study was prepared, the planning criteria used to determine the projected wastewater flows remain applicable. The design criteria used to determine the adequacy of the system to accommodate the projected flows is in compliance with the standards. The projected flows are within the parameters used to evaluate the suitability of the sewer system.

In the event that alternative improvements or revisions to the project site are considered, it is recommended the sewer study be reevaluated to establish the potential impact to the wastewater collection system and determine if the proposed alternatives or revisions are consistent with applicable standards.