



Atkins North America, Inc.  
3570 Carmel Mountain Road, Suite 300  
San Diego, California 92130

Telephone: +1.858.874.1810  
Fax: +1.858.259.0741

[www.atkinsglobal.com/northamerica](http://www.atkinsglobal.com/northamerica)

## Memorandum

**To:** Corey Andrews  
City of Solana Beach

**Date:** July 17, 2015

**From:** Ann Bechtel, PE, CFM  
Senior Project Manager, Water  
Resources  
[ann.bechtel@atkinsglobal.com](mailto:ann.bechtel@atkinsglobal.com)  
858.514.1026

**Atkins Proj No:** 100043888

**Subject:** AAT Solana 101 Mixed Use Project – Water Quality/Drainage Report Peer Reviews

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### Introduction

Atkins conducted a peer review of the Water Quality Technical Report (WQTR) and Drainage Report prepared by Stuart Engineering (May 2014) for the AAT Solana 101 Mixed-Use Project. The reports were reviewed to confirm that they follow the City's guidelines, to check the methodologies and assumptions used in the analyses, to verify basin delineation and hydrology and hydraulic calculations, to substantiate that mitigation alternatives and design alternatives are feasible, and confirm that findings are clearly documented and contain necessary supporting data. Findings and recommendations are discussed in the following memorandum.

### Summary of Findings and Recommendations

#### **Conformance with City Guidelines**

- The project is a Priority Development Project that is NOT exempt from hydromodification. The WQTR states that the proposed project is exempt from hydromodification. Please refer to the County SUSMP (2012), Chapter 1. The peak flow for the northeasterly portion of the project would increase, therefore the project is not exempt and requires detention (as provided in the Drainage Report). Please make sure that the WQTR and the Drainage Report are consistent.

#### **Methodologies and Assumptions, Basin Delineation, Hydrology and Hydraulic Calculations**

- In the WQTR, post-project total impervious area is listed as 14,338 square feet in the City of Solana Beach Stormwater Checklist for Standard Projects. The pre-project impervious area is listed as 50,000 square feet. It is unclear how the impervious area was determined and seems infeasible that the impervious area decreases by such a large amount.
- In the Drainage Report, the project land use classifications between existing and proposed conditions should be consistent with actual conditions. In Appendix A in the CIVILCADD/CIVILDESIGN Engineering Software output for Existing Conditions 50-year flowrate analysis, "General Industrial, High Density Residential, and Medium Density Residential" were chosen as the land use classifications for each area. In the existing

condition, please confirm that land classified as general industrial, high density residential, and medium density residential are appropriate. Please revise each NRCS Element, as shown in Table 3-1 "Runoff Coefficients for Urban Areas," to more closely portray the land use. High-Density residential of 43.0 DU/A seems high for the existing mobile home park. Confirm the proposed condition is consistent with the project description. Refer to report redlines shown in the CivilD Analysis in Appendix A of the Drainage Report. Please provide land use on drainage exhibits and update land use classifications as needed.

- The project area reported is inconsistent throughout multiple areas of both the WQTR and Drainage Reports. The "Sierra Avenue & Dahlia Drive Drainage Exhibit" in the WQTR and the "Rational Method Work Maps" in the Drainage Report comparing existing and proposed conditions show the project area split up as follows: 0.8 acres, 0.46 acres, 0.16 acres, 0.65 acres, summing to 2.07 acres; and 0.96 acres, 0.06 acres, 0.63 acres, and 0.42 acres, also summing to 2.07 acres. On page 1 of both reports and in the Stormwater Checklist in the WQTR, the project area is listed as 1.9 acres (83,025 ft<sup>2</sup>). The proposed exhibit does not show drainage path. It should be revised.
- In the Drainage Report, the NRCS Web Soil Survey is different than the reference provided in Appendix A of the County of San Diego 2003 Hydrology Manual. The Hydrologic Soil Group check determined that Soil Type B is present on the project site. Please refer to the image below for NRCS Web Soil Survey research. Soil Type B was also concluded from the San Diego County 2013 Hydrology Manual Appendix A. The Soil Map in the Drainage Report is inadequate. Please provide a color map in Appendix A to confirm Soil Type A. Runoff coefficients need to be adjusted for the change in Soil Type from 'A' to 'B'.

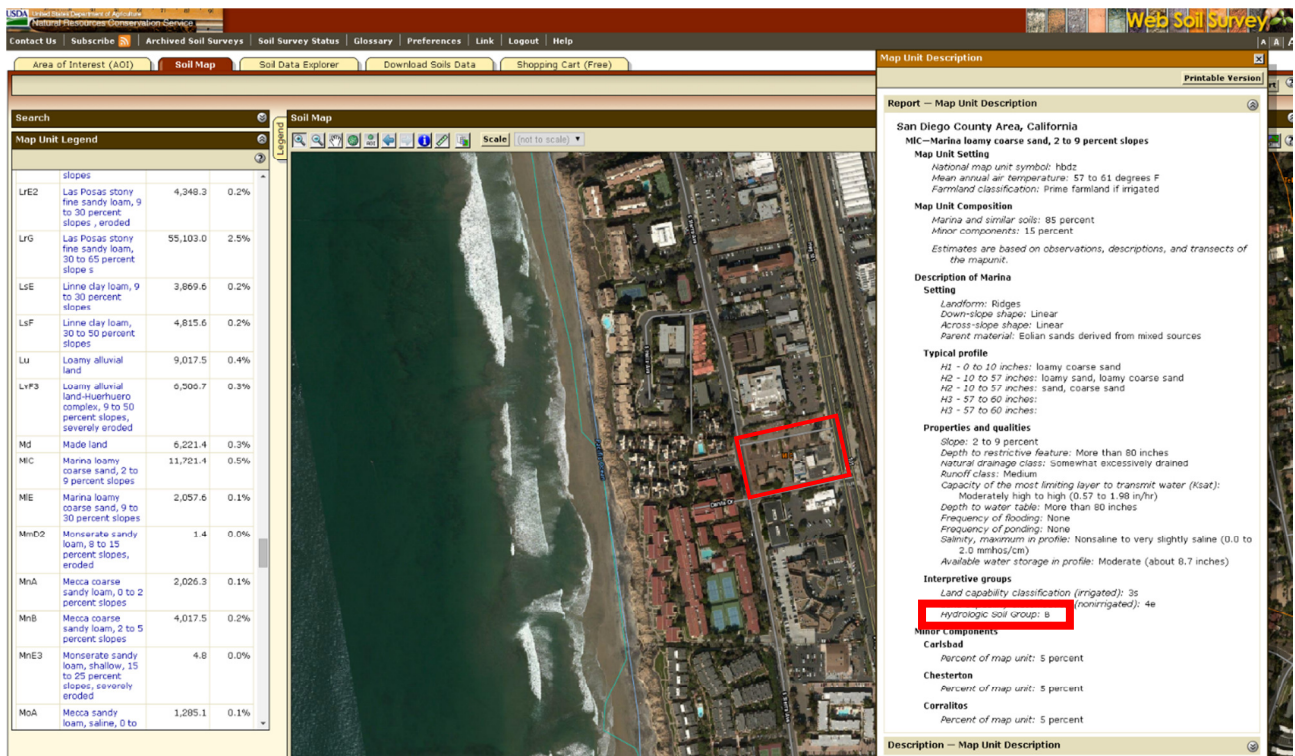


Figure 1. NRCS Web Soil Survey

- The 100-year, 24-hour precipitation value should be 3.9 inches instead of 4.0 inches. Check if use of channel flow is best for analysis where gutter flow is occurring.

### **Mitigation and Design Alternatives**

- Mitigation and design alternatives cannot be reviewed at this time due to land use classification inconsistencies.
- In the WQTR, the anticipated results of the water quality post-construction were not discussed. Include the site expected impacts and the causes. On page 3 of the WQTR, discuss Low Impact Development (LID) flow-through planter sizing and flows (targeted water quality runoff amount).

### **Documentation and Supporting Data**

- Please provide more detailed project descriptions in both reports. Explain the existing and proposed conditions.
- In the WQTR Stormwater Checklist, a signature is needed on Page 5.
- Please provide land use on drainage delineation exhibits (in addition to the acreages provided for each drainage basin). Also, fix overland flow path line type to simplify identification by providing arrows for flow direction and differentiating it more from dashed lines used for right of way.