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SEWER SYSTEM ANALYSIS FOR THE FOX POINT FARMS PROJECT

March 20, 2020

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FOR THE
FOX POINT FARMS PROJECT**

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**Prepared by:
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1080-001

Nolen Communities
1680 N. Coast Highway, #51
Encinitas, CA 92024

Attention: Sean Kilkenny, Project Manager

Subject: Sewer System Analysis for Fox Point Farms

INTRODUCTION

This letter-report provides a sewer system analysis for the Fox Point Farms project in the City of Encinitas. This report will evaluate sewer service to the project with recommended required onsite facilities to serve the project.

PROJECT OVERVIEW

The Fox Point Farms project is located in the City of Encinitas at the northwest corner of Quail Gardens Drive and Leucadia Boulevard. The property has been used as a plant nursery historically. Figure 1 presents a vicinity map showing the subject property.

\\ARTIC\DWG\1080001\FPF_FIGURE-1_VM.DWG 01-03-20 14:50:52 LAYOUT: LAYOUT1

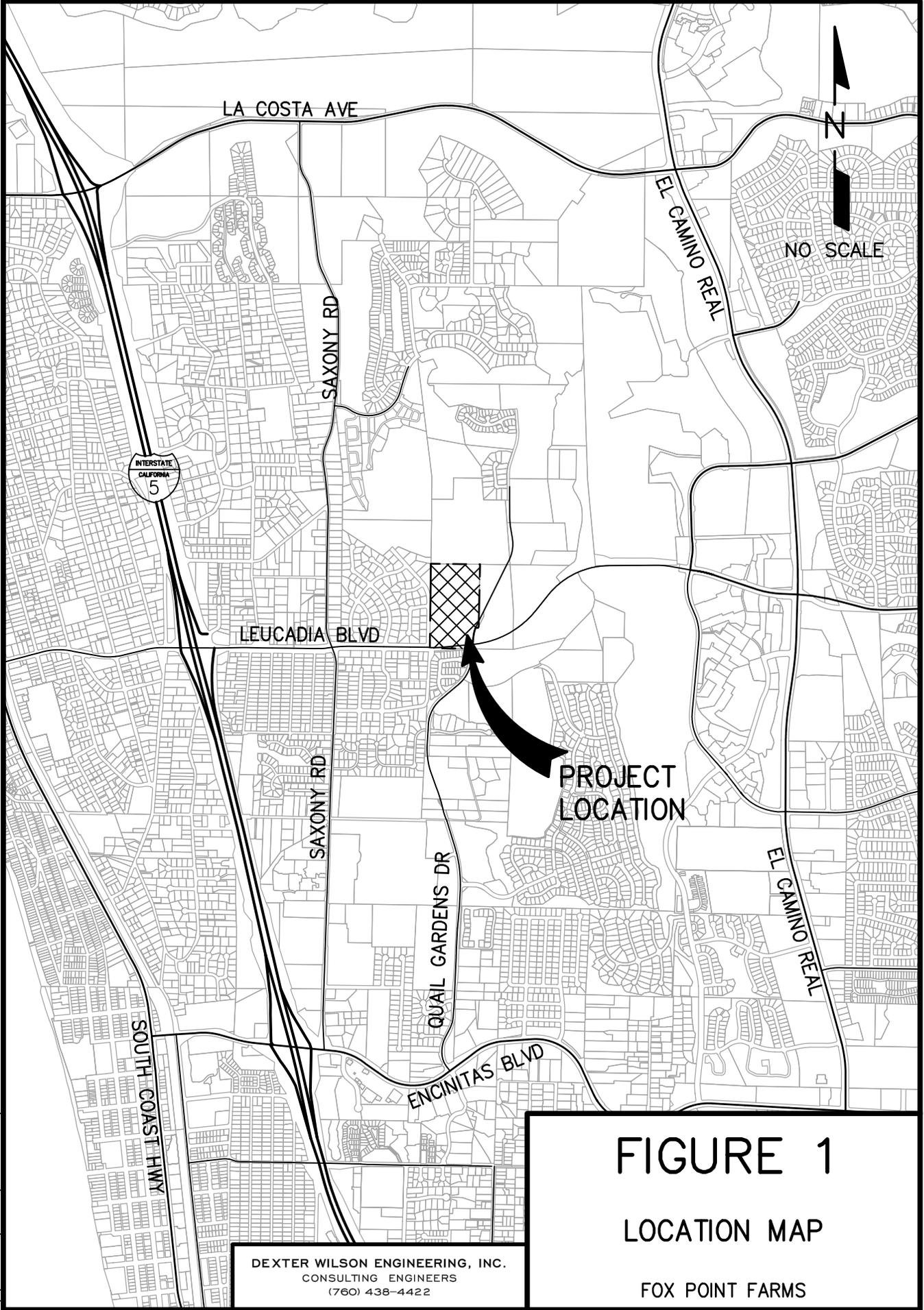


FIGURE 1

LOCATION MAP

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FOX POINT FARMS

DEVELOPMENT PLAN

The Fox Point Farms project is approximately 21.5 gross acres and plans to develop the site into a mix of residential and non-residential uses. Residential uses would include apartments, bungalows, carriage units, and townhomes totaling 250 units. Non-residential uses would include 5.5 acres of agricultural fields, a 10,000 square foot recreation center, 3,500 square foot restaurant, and 3,000 square foot barn. Access to the site will be from a driveway off Quail Gardens Drive on the east and a driveway from Sidonia Street to the west.

TOPOGRAPHY

The existing topography on the property ranges in elevation from a low of approximately 300 feet to a high of approximately 320 feet. The topography generally increases from south to north.

SEWER SERVICE

Sewer service to the Fox Point Farms project will be provided by the City of Encinitas. The project is situated at the very north end of the District service area within the Encinitas Sanitary Division service area. Flows from this area are eventually conveyed to the Encinitas Trunk Sewer line located south of the project in Encinitas Boulevard.

PLANNING CRITERIA

Sewer system planning criteria are based on the criteria provided in the 2009 City of Encinitas Engineering Design Manual and April 2011 Master Plan Update. The pertinent criteria applicable to this study are summarized in Table 1 below.

TABLE 1 PLANNING CRITERIA SUMMARY		
Description	Criteria	Source
SF Residential Sewer Flow (EDU)	280 gpd/unit	2009 Engineering Design Manual
Commercial Sewer Flow, 1 st 1,000 SF	1.2 EDU	2009 Engineering Design Manual
Commercial Sewer Flow, Each Additional 1,000 SF or Fraction Thereof	0.7 EDU	2009 Engineering Design Manual
MF Residential Sewer Flow	196 gpd/unit	2009 Engineering Design Manual
Peak Dry Weather Flow Factor (Q in CFS)	$Q_{PK} = 2.64 \times (Q_{AVG})^{0.905}$	2009 Engineering Design Manual
Minimum Pipe Diameter	8"	2010 Master Plan
Minimum Velocity at Peak Flow	2.0 Ft/s	2010 Master Plan
Manning's Roughness Coefficient	0.013	2010 Master Plan
Maximum Depth-to-Diameter Ratio, 12" and Smaller	0.50	2010 Master Plan
Maximum Depth-to-Diameter Ratio, Larger than 12"	0.75	2010 Master Plan

PROJECTED SEWER FLOWS

Based on the criteria presented above, Table 2 summarizes the projected average sewer flows for the Fox Point Farms project for the area proposed to be served the City system. The projected peak flow for the project is 177,290 gpd (123 gpm).

TABLE 2 FOX POINT FARMS PROJECTED SEWER FLOWS			
Land Use	Quantity	Demand Factor	Average Demand, gpd
MF Residential	250 units	196 gpd/unit	49,000
Recreation Center	10,000 SF	1.2 EDU/1 st 1,000 SF 0.7 EDU/Ea. Add'l 1,000 SF	2,100
Restaurant	3,500 SF	1.2 EDU/1 st 1,000 SF 0.7 EDU/Ea. Add'l 1,000 SF	1,120
Barn	3,000 SF	1.2 EDU/1 st 1,000 SF 0.7 EDU/Ea. Add'l 1,000 SF	730
Agricultural	5.5 ac	0 gpd/ac	0
TOTAL			52,950

EXISTING SEWER FACILITIES

The existing City of Encinitas sewer system in the vicinity of the project consists of gravity sewer pipelines. There is an 8-inch gravity sewer line in Quail Gardens Drive along the east side of the project. This sewer line conveys flow south to Leucadia Boulevard and then west. There is also an existing 8-inch sewer line onsite that conveys flow south to Leucadia Boulevard. Flow is then conveyed west in Leucadia Boulevard and south from Leucadia Boulevard where it crosses Interstate 5 and eventually connects to the Encinitas Trunk Sewer in Encinitas Boulevard. The Encinitas Trunk Sewer conveys flow west to the Moonlight Beach Pump Station. This pump station conveys flow north for treatment and disposal. There is an existing 8-inch sewer line in Sidonia Street that serves the existing

tract to the west and conveys flows to the Leucadia Wastewater District. The location of existing sewer facilities and sewer service area boundaries in the vicinity of the project are shown on Figure 2.

PROPOSED SEWER SYSTEM

The entire project is within the City of Encinitas for sewer service and all development on the site will sewer to the existing City sewer collection system in Leucadia Boulevard. The project flows will be conveyed to Sidonia Street at the approximate location of the secondary access point, and then will be conveyed southerly to a point of connection to the existing City sewer system in Leucadia Boulevard. Figure 2 provides the proposed sewer system for the project.

Offsite Impacts

While the estimated flows from the project are relatively low, an evaluation of downstream capacity in the existing City system will be required. This evaluation is typically done by the agencies by adding flows to their overall hydraulic model and evaluating impacts.

Thank you for the opportunity to work on this project. If you have any questions on the content of this report, please let us know.

Dexter Wilson Engineering, Inc.



Stephen M. Nielsen, P.E.

SMN:ps

Attachment(s)

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