Ventura County
Watershed Protection District

SILVER STRAND DRAIN - SAN NICOLAS PUMP STATION
LOW FLOW DIVERSION

FINAL OPERATIONAL PROTOCOL

August 2016

1 INTRODUCTION

This protocol outlines procedures to be followed by operators of the Silver Strand Drain - San Nicolas Pump Station (also known as San Nicolas Pump Station) for diversion of low flows generated within the Silver Strand community from the storm drain system, and into the sanitary sewer system operated by the Channel Islands Beach Community Services District (CIBCSD) for off-site treatment and disposal. The Ventura County Watershed Protection District (VCWPD) Operations and Maintenance (O&M) Division is in charge of operations and maintenance of San Nicolas Pump Station.

Non-stormwater low flows (also known as nuisance flows) from the Silver Strand community were determined to be the source of beach water quality issues at Kiddie Beach. This is documented in Resolution No. 2007-017 “Harbor Beaches of Ventura County Bacteria Total Maximum Daily Load” (Bacteria TMDL) and adopted by the Los Angeles Regional Water Quality Control Board (RWQCB) in November 2007. The diversion of low flows allows to meet RWQCB requirements.

The RWQCB defined low flows as any nuisance flows generated during non-wet days. Further, a wet day was defined as a day with 0.1-inch or more of rain and the three days following the rain event.

This protocol provides O&M procedures and thresholds for when to shut off and turn back on the San Nicolas diversion pump.

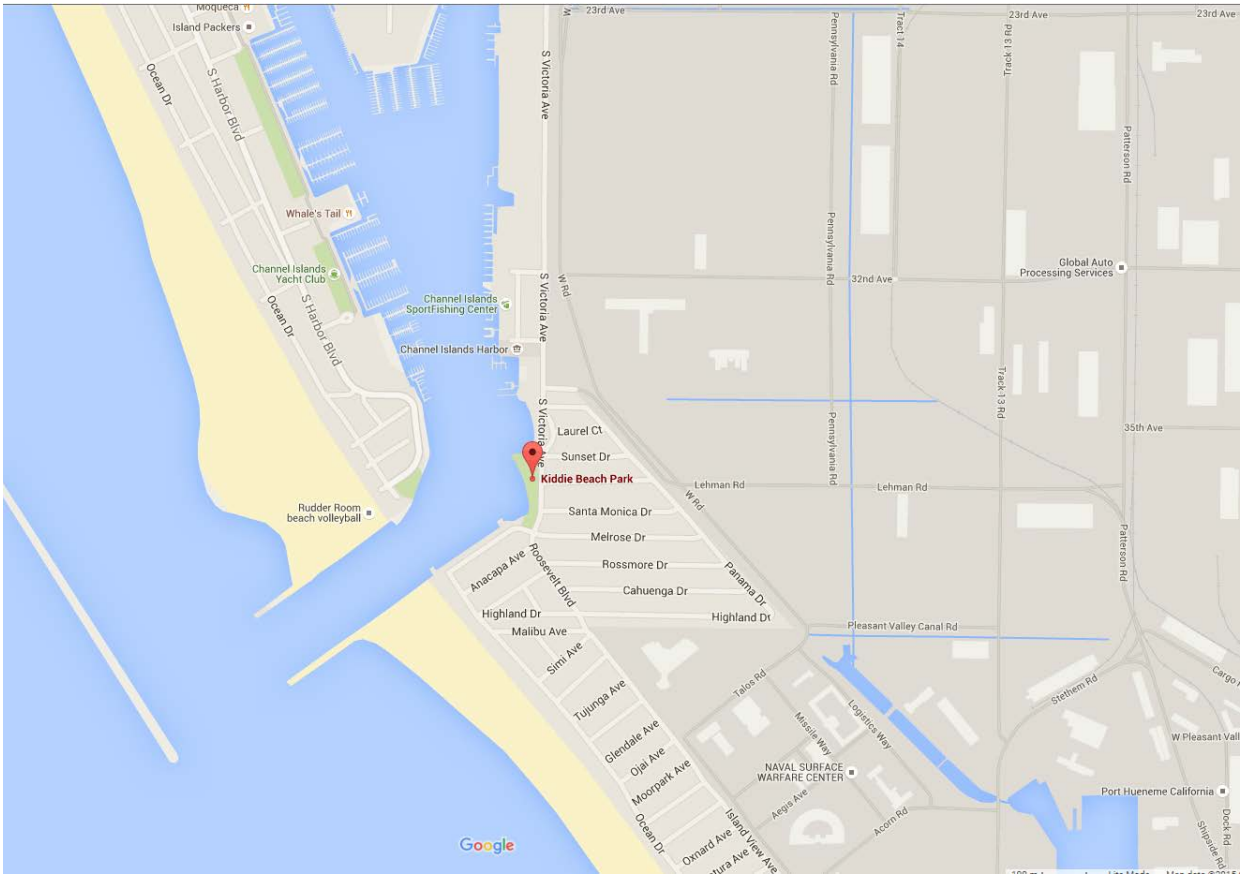
1.1 Location of the Station

The San Nicolas Pump Station is located in the Channel Islands Harbor near the Silver Strand area of the County of Ventura. The station is on the corner of South Victoria Avenue and San Nicolas, outside a beach park known as Channel Islands Harbor Beach Park or Kiddie Beach Park (see Figure 1).

1.2 Operational Summary

The main pumps and the sump pump discharge directly to the Channel Islands Harbor. The diversion chopper pump discharges to the CIBCSD sanitary sewer system. The 5 HP/120-220 GPM diversion pump is set to “auto” to ensure low flows are diverted to the sewer until turned off either manually by O&M staff or automatically. The diversion pump typically operates at a less than maximum GPM as the undersized length and diameter of pipe downstream of the pump restrict it.

Figure 1. Kiddie Beach Park Location Map



The system is equipped with a Siemens Sitrans F M MAG 5000/6000 meter which was calibrated on 11/24/2014 and installed on 01/13/2015. This meter needs to be maintained at all times for the purpose of flow calculation and waste water billing. Calibration should be performed every three (3) years in accordance with calibration procedures (Appendix A). The next calibration is due on 11/2017. If any problems are encountered, the meter will be fixed as soon as possible and CIBCSD will be notified. The designated CIBCSD staff will have access to the meter to take readings for billing purposes.

1.3 O&M Division Contacts

Primary Contact → Bill DuFrain (805) 320-5971 (cell)
Secondary Contact → Dave McCarthy (805) 320-5970 (cell)
Emergency Contact → John Lagomarsino (805) 443-4503 (cell)

1.4 CIBCSD Contacts

Jared Bouchard (805) 985 6021 office

2 OPERATIONAL PROCEDURES

The following are operational practices for the San Nicolas Pump Station to divert low flows from the Silver Strand area. Diversion of the low flows will reduce water pollution at the Kiddie Beach Park and meet RWQCB requirements. The following procedures describe steps to be taken in order to operate the pump station at its operational efficiency and achieve compliance with Resolution No. 2007-017 "Harbor Beaches of Ventura County Bacteria Total Maximum Daily Load" (Bacteria TMDL).

2.1 Diversion Pump Shut Off

Shut off time of the diversion pump is the most critical part of the Bacteria TMDL compliance. Bacteria TMDL compliance for dry weather during summer and winter months is required until at least 0.1 inches of rain has fallen within a 24 hour period and on any dry day after three days following the rain event. **Prematurely turning off the diversion pump may result in non-compliance.**

The sewer diversion pump will be shut off automatically (based on information provided by the dedicated rain gauge) **as soon as 0.1 inch of precipitation is recorded within a continuous 24 hours period**.

O&M staff will monitor the SCADA system off-site and visit the site periodically and prior to rain events (if greater than 50% chance of 0.25 inch of precipitation or more) to verify proper operation. In addition, the designated CIBCSD staff will have access to SCADA and the pump station to verify proper operation as needed. The CIBCSD staff will inform one of the O&M Division Contacts (Section 1.3 above) prior to site visit at the San Nicolas Pump Station.

2.2 Turning Diversion Pump Back On

It is paramount that the San Nicolas diversion pump is turned back on **not later than three (3) days or 72 hours after the rain event** or as soon as the low flow of less than 0.1 inches precipitation within 24 hours is registered by the San Nicolas Pump Station precipitation gauge to ensure Bacteria TMDL compliance. To avoid any incidental high

flows due to unexpected circumstances, the pump will be turned back on 24 hours after the precipitation gauge registration is confirmed.

O&M staff will monitor the San Nicolas Pump Station precipitation gauge and SCADA system to verify proper operations. O&M staff will conduct a site visit to ensure that the diversion pump is back on not later than three (3) days after a rain event.

2.3 Manual Diversion Pump Turning Off and Turning Back On Procedures

In an event that the automated system including the San Nicolas Pump Station precipitation gauge and SCADA are not working properly, O&M staff will monitor storm predictions. Storm forecasting procedures are found in Section 2.4. The San Nicolas Diversion Pump will be turned off manually if the weather forecast has a **50% chance of 0.25 inch or more of precipitation.** The diversion pump will **be turned back on not later than three (3) days after the rain event**.

2.4 Storm Forecasting

Manual diversion pump shutoff will rely upon storm predictions based on both chance of precipitation as well as depth. This is similar to methodologies utilized by the State Water Resources Control Board (SWRCB) for monitoring and stormwater sampling under the National Pollutant Discharge Elimination System (NPDES) Permits. Weather forecast updates are provided by the National Oceanic and Atmospheric Administration (NOAA). The website www.StormPOP.com was created to read NOAA forecasts every couple hours and report notifications to users accordingly. It reads NOAA reports for pre-defined zip codes and notifies the user of % chance of rainfall. The user is notified once the predefined % chance threshold it reached so they may look at the NOAA report (Figure 2) and identify the depth of rain anticipated with that % chance of rain.

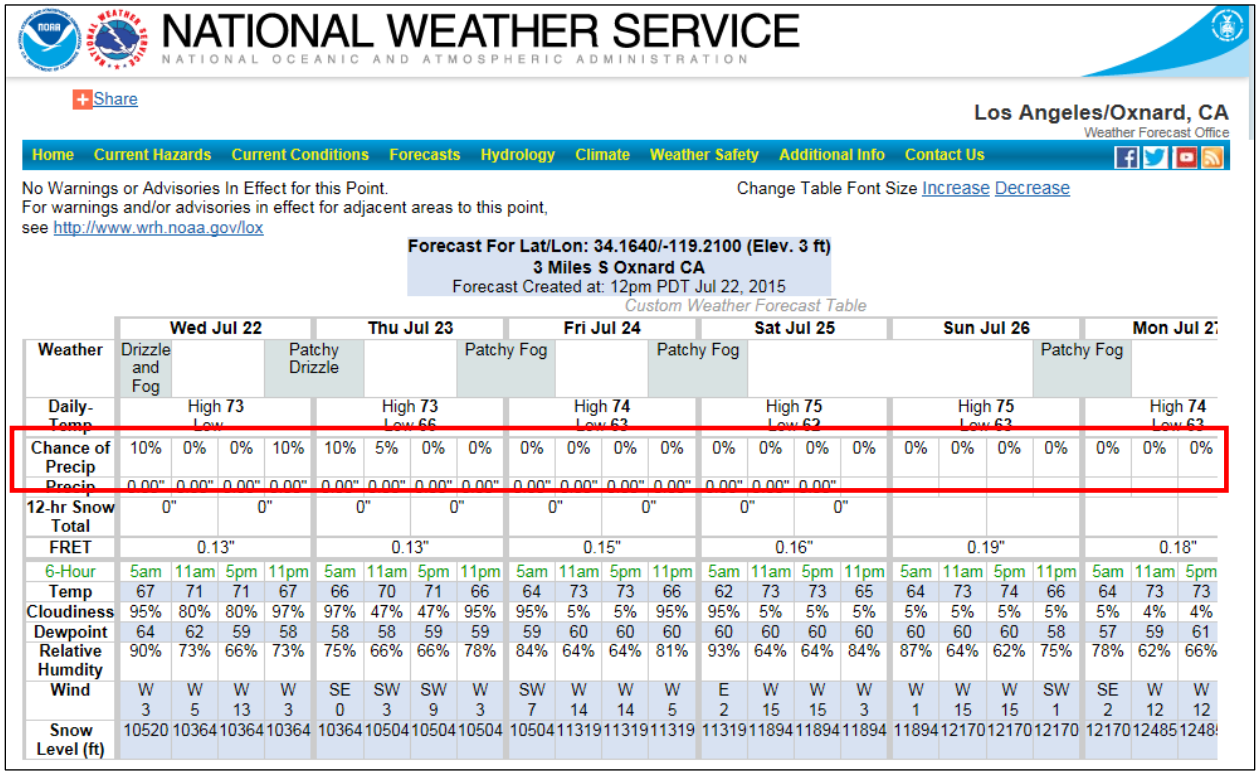
2.5 Emergency Shutoff

In case of an emergency, the San Nicolas diversion pump shutoff can be accessed by either O&M or CIBCSD staff to turn the system off.

2.6 Salinity Testing

Water quality testing related to high tide may be required. CIBCSD staff will contact O&M staff with a request for salinity sampling at any time should operational parameters change that may indicate the presence of ocean water infiltration to the facility. Examples of operational parameter changes may include but are not limited to increased frequency of run times or longer run times.

Figure 2. NOAA website - % Chance Rain & Precipitation Amount
(as notified through PWA StormPop)



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No Warnings or Advisories In Effect for this Point.
For warnings and/or advisories in effect for adjacent areas to this point, see http://www.wrh.noaa.gov/lox

Change Table Font Size Increase Decrease

Forecast For Lat/Lon: 34.1640/-119.2100 (Elev. 3 ft)
3 Miles S Oxnard CA
Forecast Created at: 12pm PDT Jul 22, 2015

Custom Weather Forecast Table

	Wed Jul 22				Thu Jul 23				Fri Jul 24				Sat Jul 25				Sun Jul 26				Mon Jul 27		
Weather	Drizzle and Fog			Patchy Drizzle			Patchy Fog				Patchy Fog							Patchy Fog					
Daily-Temp	High 73 Low				High 73 Low 66				High 74 Low 63				High 75 Low 62				High 75 Low 63				High 74 Low 63		
Chance of Precip	10%	0%	0%	10%	10%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Precip	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"								
12-hr Snow Total	0"		0"		0"		0"		0"		0"		0"		0"								
FRET	0.13"				0.13"				0.15"				0.16"				0.19"				0.18"		
6-Hour	5am	11am	5pm	11pm	5am	11am	5pm	11pm	5am	11am	5pm	11pm	5am	11am	5pm	11pm	5am	11am	5pm	11pm	5am	11am	5pm
Temp	67	71	71	67	66	70	71	66	64	73	73	66	62	73	73	65	64	73	74	66	64	73	73
Cloudiness	95%	80%	80%	97%	97%	47%	47%	95%	95%	5%	5%	95%	95%	5%	5%	5%	5%	5%	5%	5%	5%	4%	4%
Dewpoint	64	62	59	58	58	58	59	59	59	60	60	60	60	60	60	60	60	60	60	58	57	59	61
Relative Humdity	90%	73%	66%	73%	75%	66%	66%	78%	84%	64%	64%	81%	93%	64%	64%	84%	87%	64%	62%	75%	78%	62%	66%
Wind	W 3	W 5	W 13	W 3	SE 0	SW 3	SW 9	W 3	SW 7	W 14	W 14	W 5	E 2	W 15	W 15	W 3	W 1	W 15	W 15	SW 1	SE 2	W 12	W 12
Snow Level (ft)	10520	10364	10364	10364	10364	10504	10504	10504	10504	11319	11319	11319	11319	11894	11894	11894	11894	12170	12170	12170	12170	12485	1248