

M E M O R A N D U M
September 29, 2006

To: PBCSD Board of Directors

From: Michael Niccum, District Engineer

Subject: **Wastewater Program Review**

RECOMMENDATION

This program overview report presents information and staff's perspective of issues related to the District wastewater collection system to carry forward to the strategic planning session next year and future budget cycles.

BACKGROUND

The Pebble Beach Community Services District wastewater collection system is shown on the attached map and consists of 77 miles of sewer main lines, 1,150 manholes, eight wastewater pump stations and 2 miles of pump station force mains. Many of the sewer lines in the Del Monte Forest were constructed prior to the formation of PBCSD in 1982 and its predecessor agency the Pebble Beach Sanitary District in 1969. Most of the sewer main lines in the Country Club neighborhoods were installed when the land was subdivided and each residence was constructed with an individual septic tank. The purpose of the septic tanks was to allow most of the solids from residential sewage to settle in the holding tank for disposal when the septic tank was periodically pumped out. The remaining water from the septic tanks was collected in sewer main lines, primarily 6 inch clay pipelines, and transported to common leach fields for disposal in open space or golf courses. Most of the residences located in the estate area of Pebble Beach were served by individual septic tanks and leach fields.

The Pebble Beach Sanitary District constructed an interceptor sewer main line in the late 1960's to allow gravity flow from Spyglass Hill Road to the Carmel Sanitary District treatment plant near the Carmel River. Seven pump stations and additional interceptor lines were also constructed at that time to transport wastewater from the communal leach field locations. The sanitary district floated a bond and constructed new sewer main lines, primarily clay pipe, in the estate area to allow residences to abandon existing septic tanks.

The District has an agreement with Carmel Area Wastewater District for the treatment of wastewater that calls for the District to pay a portion of the operating costs based on the percentage of flow into the plant and to pay one-third of all capital costs related to the treatment plant. In return the District has the right to use one-third of the treatment capacity of the plant.

SANITARY SEWER OVERFLOWS

The primary goal of the District wastewater program is to collect and transport wastewater to the CAWD plant for treatment without sanitary sewer (wastewater) overflows or spills to public trust or private property and avoid the consequential environmental damage. Exhibit A summarizes the sanitary sewer overflows that occurred in the District over the past five years. Overflows are designated as major if the quantity of sewage exceeds 1,000 gallons or any quantity of sewage reaches a public water body or the interior of a residence. The Regional Water Quality Control Board is notified within 24 hours of any major overflow. Minor sewer overflows are usually caused by roots or grease and are cleared by the maintenance department if the stoppage is located in the main line. Stoppages located in house laterals are the responsibility of the home owner. The District encourages residences to contact the District at any sign of sewage overflowing. Maintenance department personnel are on call 24 hours a day, seven days a week and will determine the source of the stoppage.

PUMP STATIONS

Sewage from district pump stations regularly overflowed into the ocean in the late 1980's. An assessment of the condition of the original pump stations was conducted in 1987 and a report was prepared outlining improvements required to meet the ultimate wastewater demand in the Del Monte Forest. All of the recommendations for pump station improvements have been completed by the District as summarized in Exhibit B.

Standby power generators were constructed at the three largest district pump stations (P-3, P-5 and P-7) to allow continued operation during power outages and pump station P-8 was connected to the Inn at Spanish Bay generator. Automatic transfer switches have been constructed at the four smaller pump stations (P-1, P-2, P-4 and P-6), which allow the four District portable generators to be set in place during stormy conditions and automatically operate during a power outage. These improvements have greatly reduced the callout time for maintenance department personnel during the winter season and reduced the risk of injury during storm related operations.

COLLECTION SYSTEM SEWER LINES

The maintenance department uses the line cleaning vacuum truck to clean lines on a daily basis and for the past ten years has cleaned every sewer main line at least once a year. Line cleaning operations are also a diagnostic tool to identify problem areas. Old clay pipe has a tendency to crack at joints and lateral connections, which provides a route for root intrusion, particularly in the dry season when the wastewater in the collection system provides a water source for plant roots. The maintenance department uses a power rodder to clear roots from problem lines and televising equipment to further assess the condition of the pipeline. Exhibit C contains examples of the data collected with the new televising truck.

The District long-term capital outlay program includes an annual allocation of \$500,000 for sewer line replacement and manhole rehabilitation projects. Sewer line improvement projects completed since 1985 are summarized in Exhibit B. New plastic pipelines have an expected useful life of over 50 years. Approximately ten percent of the collection system clay lines have been replaced with plastic pipe. Assuming the current replacement schedule, the remaining sewer mains would be replaced within a 70-year period. If the budget allocation increased to \$1,000,000 per year, the collection system would be replaced within 35 years. This approach would allow replacement of the highest priority pipelines, with the highest risk of stoppage and overflow, while adequate funds are available for the work.

District staff suggests that the sewer mains replacement schedule be considered during the upcoming strategic planning session.

Attachments: PBCSD System Map
Exhibit A – Sanitary Sewer Overflows
Exhibit B – Capital Improvements
Exhibit C – Sewer Line Photos

Agenda Item No. 15

EXHIBIT A

PBCSD Sanitary Sewer Overflows

Major Overflows

Date	Location	Quantity	Comment
4/01/05	MPCC Dunes Course	39,000 gallons	Tree punctured 15" line
3/01/05	Sloat Road Easement	250 gallons	Stoppage – root ball
12/29/04	Mission Road	200 gallons	Stoppage – chunk of grease
11/2/04	3100 Mestres Drive	50 gallons	Stoppage – house damage
1/05/04	1470 Cypress Drive	500 gallons	Landslide damaged main line
9/12/03	Pump Station P-3	10,000 gallons	Dry well flooded
5/12/03	3323 Stevenson Drive	800 gallons	Stoppage
12/20/02	Pump Station P-7	800 gallons	Power surge controls
1/03/02	1494 Cypress Drive	1,000 gallons	Contractor damaged main

Minor Overflows

Year	Main Line Stoppages	Lateral Stoppages
2006	1	4
2005	4	11
2004	6	3
2003	9	7
2002	8	8
2001	9	13

EXHIBIT B

PBCSD Capital Improvements 1985 - 2006

Sewer Line Replacement Projects

Schedule A-B Sewer Line Improvements (1987)	3,750'	\$160,000
Schedule C-D Sewer Line Improvements (1987)	2,750'	\$150,000
Schedule E-F Sewer Line Improvements (1988)	3,150'	\$190,000
Sewer Manhole Rehabilitation Project (1990)		\$90,000
Pelican Easement Line Bridge (1992)		\$30,000
1994-95 Sewer Line Replacement Project	1,250'	\$100,000
1996-97 Sewer Replacement Project	2,100'	\$720,000
1997-98 Sewer Replacement Project	2,200'	\$500,000
1999 Sewer Replacement Project	1,000'	\$910,000
2000-01 Sewer Replacement Project	2,800'	\$500,000
2001-02 Sewer Replacement Project	5,950'	\$670,000
2003 Sewer Replacement Project	3,800'	\$450,000
2005 Sewer Replacement Project	5,500'	\$600,000
2006 Sewer Replacement Project	5,600'	\$500,000
Total	39,850'	\$5,570,000

Pump Station Rehabilitation Projects

Pump Stations P-3, P-7 Standby Emergency Power Generator and Telemetry Alarm System for 8 Wastewater Pump Stations	1989	\$910,000
Pump Station P-3 Improvement Project - 1 MGD Wastewater Pump Station with 6 pumps, odor control room and wet well	1990	\$3,010,000
Pump Station P5 Rehabilitation including Standby Emergency Power	1992	\$670,000
Pump Station P7 Rehabilitation Project	1994	\$550,000
Cathodic Protection System Installation for 6 Wastewater Pump Stations (P-1,2,4,5,6 and 7)	1998	\$120,000
Pump Station P1, P2, P3, P4, P6 & P7 Rehabilitation	2002	\$200,000
Pump Station P-3 Generator Improvement Project	2002	\$130,000
Pump Station P-7 Wet Well Expansion Project	2004	\$450,000
Pump Station SCADA System Project	2005	\$700,000
	Total	\$6,740,000

CAWD Treatment Plant Projects (PBCSD 1/3 Share)

Carmel Area Wastewater District (CAWD) Treatment Plant Outfall Modifications	1985	\$40,000
CAWD Wastewater Treatment Plant Improvements	1987	\$2,920,000
CAWD Secondary Plant Improvement Project	1995	\$970,000
CAWD Treatment Plant Improvements including Solids Handling, Operations Building and Energy Efficiency Projects	1999	\$510,000
CAWD Treatment Plant Access Road Project	1999	\$100,000
CAWD Treatment Plant Headworks Improvement Project	2002	\$250,000
	Total	\$4,790,000

Forest Lake Reservoir Project

Forest Lake Reservoir Preliminary Engineering Design - Phase II Wastewater Reclamation Project (Reimbursed by Pebble Beach Company)	1996	\$360,000
Reclaimed Water Pipeline Vault Cover Replacement Project (Reimbursed by Reclamation Project)	1997	\$40,000
Forest Lake Reservoir Final Engineering Design (Reimbursed by Pebble Beach Company)	2000	\$670,000
Purchase of Forest Lake Reservoir Property (includes \$82,000 reimbursement from Reclamation Project)	2000	\$980,000
Recycled Water Pipeline Cathodic Protection Project (Reimbursed by Reclamation Project)	2004	\$150,000
Forest Lake Reservoir Project	2006	\$12,500,000
	Total	\$14,700,000

PBCSD Building Projects

PBCSD Building Renovation Project	1994	\$770,000
Carmel Hill Fire Station (PBCSD 1/4 Share)	1996	\$500,000
PBCSD Building Above Ground Fuel Storage Tanks Installation Project - Two 1,000 gallon storage tanks	1997	\$80,000
PBCSD Fire Station Remodel/Improvements	2000	\$50,000
Site Facilities Improvement Project	2004	\$3,500,000
	Total	\$4,900,000

Fire Protection Water Projects

Water Systems Improvements for Fire Protection Preliminary Engineering Design	1992	\$150,000
Viscaino Pump Station Water System Improvement for Fire Protection - 5 pumps and standby emergency power generator (Reimbursed by the Reclamation Project)	1993	\$900,000
Water Systems Improvements for Fire Protection Final Engineering Design for Base Projects	1995	\$270,000
Huckleberry Hill Pump Station Water System Improvements for Fire Protection Project including 3 pumps with 2500 gpm capacity and standby emergency power generator	1996	\$850,000
Pebble Beach Pump Station Water System Improvements for Fire Protection Project including new standby emergency power generator and replace 3 pumps with 900 gpm total.	1999	\$1,060,000
Water System Improvements for Fire Protection - Padre Lane Lift Zone Pipeline Project	2000	\$900,000
Water System Improvements for Fire Protection - 1st Priority Pipeline Replacement Project	2002	\$1,200,000
Water System Improvements for Fire Protection - 2nd Priority Pipeline Replacement Project	2003	\$1,700,000
Water System Improvements for Fire Protection - 3rd Priority Pipeline Replacement Project	2005	\$1,850,000
Water System Improvements for Fire Protection - 4th Priority Pipeline Replacement Project	2007	\$1,750,000
	Total	\$8,880,000
 Pescadero Canyon Fire Road Improvements	 2005	 \$60,000