



Sewer Authority Mid-Coastside

Wet Weather Flow Management Project Risk Analysis PART III

September 24, 2007

REVISED 10/10/07 per Board Request

Problem Statement



SAM facilities lack the storage capacity and transmission system to accommodate stormwater flows



Overflows may happen with discharge going directly into the Pacific Ocean, contaminating the water and beaches with pathogens and bacteria

Draft Wet Weather Flow Management Project (WWFMP) Alternatives



No Project – Do Nothing



New force main parallel to the existing



600,000-gallon storage tank near the
Portola Pump Station

Board Meeting Discussion



Status Report



Board's Requests



Responses

Status Report



Part I Risk Analysis of Alternatives July 2007



Part II Risk Analysis of Alternatives August 2007



Part III Risk Analysis of Alternatives TONIGHT

Board Request No. 1



Would the Portola Pump Station (PPS) require improvements for the storage tank alternative?

- Combining the PPS improvements with another necessary capital project is a good engineering and public policy practice
 - Aged equipment more likely to fail during a storm
 - Possible grant funding when coupled with WWFMP
 - Improvements include: pump replacement and rehabilitation, discharge header modifications, and flow metering improvements

Board Request No. 2



Evaluate the potential impacts of alternatives on Half Moon Bay flows

- Under the design storm, HMB contributes 10.3 mgd of instantaneous storm water flow to the WWTP
- The remaining 4.7 mgd of WWTP capacity are left for GSD and MWSD

Board Request No. 2 (cont.)

WWFMP Alternative	Percent of WWTP Capacity Utilized (a)	
	HMB (b, c)	GSD and MWSD
NO Project	70%	30%
Parallel Force Main	70%	30%
Storage Tank at PPS	70%	30%

(a) Instantaneous peak flow

(b) Exceeds JPA allocation by 37%

(c) Project includes no flow restriction for HMB

Board Request No. 3



Compare expected service life for HDPE vs. PVC pipe

- HDPE pipe: 50+ years
 - Corrosion resistance
 - Good material for sanitary sewer conditions
 - May be subject to environmental stress cracking

- PVC pipe: 50+ years
 - Corrosion resistance
 - Good material for sanitary sewer conditions
 - Limited resistance to surge pressures

Board Request No. 4



HMB enjoys unrestricted flow to the WWTP. Evaluate the financial responsibility of HMB during wet weather flows

- Need to review the cost sharing formula in the Joint Powers Agreement
- The proposed project presents an opportunity for re-evaluating and/or adjusting the formula, taking into consideration:
 - Sequence and quantity of flows from member agencies
 - Flow restrictions causing overflows in the IPS
 - Need for storage during wet weather
 - Possible extra treatment cost at peak flow rate
 - Possible impacts on the WWTP treatment efficiency

Board Request No. 5



Evaluate flow metering at the Portola Pump Station



Flow is measured by a magnetic flow meter

- ✎ Currently installed on vertical pipe, with ~10 feet straight pipe run downstream
- ✎ Should be installed on horizontal pipe, with at least 17.5 feet of straight pipe run downstream and upstream
- ✎ Discharge header modifications will be required before and after the flow metering device

Board Request No. 6



What Software was used by Carollo Engineers to develop the storm water model simulations?

The model simulations were developed using the EPA Storm Water Management Model Version 5, a dynamic rainfall-runoff simulation model used for single event or long-term (continuous) simulation of runoff quantity and quality from primarily urban areas

Summary of Results



Addressing Portola Pump Station is necessary for addressing wet weather flows



Each of the project alternatives benefits HMB



HDPE and PVC pipes both have expected service life of 50+ years

Summary of Results (cont.)



The WWFMP presents an opportunity to evaluate/adjust the cost sharing formula to take into account current flow rates from the member agencies



Flow metering at the Portola Pump Station must be addressed



Model simulations were developed using EPA SWMM5