

## Memorandum

**DATE:** August 20, 2007

**TO:** John F. Foley III, Sewer Authority Mid-Coastside

**FROM:** Tanya Yurovsky, P.E., SRT Consultants

**SUBJECT:** 3<sup>rd</sup> Draft - Risk Analysis for the Wet Weather Flow Management Project

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### Background

Sewer Authority Mid-Coastside (SAM) lacks the storage capacity and transmission system capacity to accommodate sewer flows to the wastewater treatment plant in wet weather seasons, which leads to sewage overflows and may cause raw sewage discharge into the Pacific Coast. SAM has developed alternatives to more efficiently manage the wet weather flows through system conveyance and/or storage improvements. Alternative facilities for wet weather flow management are currently under consideration:

1. A new 600,000-gallon underground stormwater storage tank; 120x70 feet; 12.5 feet deep; or
2. A new 8,850-foot, 14-inch-diameter force main in parallel to the existing 24-year-old force main.
3. A No-Project alternative is also being considered as the third alternative.

### Purpose

At its June 25, 2007 meeting, the Board of Directors requested that staff conduct an evaluation of the three current project alternatives in terms of the risk associated with the implementation of each alternative and provide a risk-benefit analysis. The initial results of the risk analysis were presented for the Board's review and consideration at the July 23, 2007 meeting.

At the July 23, 2007 meeting the Board received the staff report on the Risk Analysis for the Draft Project Alternatives, provided comments and requested further analysis of the alternatives. This memorandum presents the results of the risk assessment.

### Project Status

The Wet Weather Flow Management Project (Project) will improve SAM's ability to convey excess flow received during wet weather.

The Project has been divided into two phases, an environmental studies phase and an implementation phase. The first phase, the environmental studies, is

currently underway and includes environmental review as required under the California Environmental Quality Act (CEQA) and the California Coastal Act. The objective of this phase is to successfully complete the required environmental review processes to allow SAM to obtain all necessary permits for the remaining implementation phase.

At its June 25, 2007 meeting, the Board of Directors requested that staff conduct an evaluation of the three current project alternatives in terms of the risk associated with the implementation of each alternative and provide a risk-benefit analysis. The initial results of the risk analysis were presented for the Board's review and consideration at the July 23, 2007 meeting. The goals of the risk analysis were twofold:

1. Determine risks for each of the draft project alternatives relative to:
  - a. Permitting
  - b. Public Perception
  - c. EPA Findings
  - d. Schedule and Cost Impacts
2. Develop a comprehensive risk analysis matrix for the three draft alternatives.

The following agencies and governmental entities were contacted to develop the matrices requested by the Board:

City of Half Moon Bay  
San Mateo County Resource Conservation District (RCD)  
Mid-Coast Community Council (MCCC)  
Coastside County Water District (CCWD)  
California Coastal Commission (CCC)  
California Department of Transportation (Caltrans)  
US Army Corp of Engineers (USACE)  
San Francisco Bay Regional Water Quality Control Board (RWQCB)  
California Department of Fish and Game (DFG)

The results of the analysis were summarized and presented to the Board on July 23, 2007, in a form of two matrices:

1. Risk Analysis of Draft Alternatives
2. Risk-Benefit Analysis of Draft Alternatives

The initial analysis resulted in the following major conclusions:

- o The No-Project Alternative carries the highest risk to SAM and the public and the highest estimated 20-year present worth cost;

- No fatal flaws were identified for the storage tank and the parallel force main alternatives.

The discussion on the additional analysis conducted since the July 23, 2007, Board meeting and responses to the questions posed by the Board follows. Copies of the updated matrices are included with this memorandum as Exhibit A and Exhibit B, respectively.

## **Discussion**

This section includes a detailed discussion in response to the requests from the Board at the July 23, 2007, meeting. Responses to each question immediately follow the question. In addition, Exhibit C contains a summary of the Board's requests and staff responses.

### **Board Request No. 1:**

**Add "If Appealed" additional time to schedules for each of the alternatives.**

### **Response to Request No. 1:**

The estimated additional timeframe to address a potential project appeal at the Coastal Commission level is 6 months to one year. While there is zero risk of appeal for the No-Project alternative; both the force main and the storage tank alternatives, based on the information available at this time, carry an equal risk of a project appeal filed with the Coastal Commission.

This risk evaluation may change as the environmental consultant continues the work and makes progress with the technical studies (biology, geology, cultural, etc.) and the Coastal Act and Local Coastal Programs' (both the City of Half Moon Bay and the County of San Mateo) consistency issues are reviewed. These studies are expected to be completed in about 6 months.

Exhibit D to this memorandum includes detailed project schedules with critical milestones for both the Storage Tank and the Parallel Force Main alternatives. The differences in the schedules can be summarized as follows:

**1. Storage Tank.** Two main factors affect the schedule risks for this alternative: (A) the required land purchase by SAM and (B) an appeal potential at the Coastal Commission.

Since the property acquisition cannot officially start until the environmental analyses under the California Environmental Quality Act (CEQA) are complete, the land acquisition process is included in the schedule with a start date of March 2008 and duration of six months to complete. This assumes that SAM would be able to amicably negotiate this land acquisition. If eminent domain proceedings need to be initiated, the duration may extend to one year.

An appeal at the Coastal Commission may extend the project schedule by six months to one year. The probability of appeal for this alternative appears to be low to moderate at this time.

Land Acquisition adds: six months to one year  
 Appeal potential at the Coastal Commission adds : six months to one year

Added together, these two risk factors may add an additional one to two years to the project implementation schedule.

**2. Parallel Force Main.** One factor may impact the schedule for this alternative, an appeal potential at the Coastal Commission. An appeal at the Coastal Commission may extend the project schedule by six months to one year. The probability of appeal for this alternative appears to be moderate to high at this time.

Appeal potential at the Coastal Commission adds : six months to one year

**Board Request No. 2:**

**Add Minimum/Maximum permitting time to the schedule.**

**Response to Request No. 2:**

Please see schedules enclosed in Exhibit D. The following are the estimated minimum/maximum permitting durations for the alternatives:

**Table 1 Estimated Permitting Durations**

<b>Draft Project Alternative</b>	<b>Minimum Estimated Permitting Duration<sup>a,b,c,d</sup> months</b>	<b>Maximum Estimated Permitting Duration<sup>b,c</sup> months</b>
<b><i>Storage Tank</i></b>	<b>6 Months</b>	<b>24 months</b>
<b><i>Parallel Force Main</i></b>	<b>6 months</b>	<b>12 months</b>

Notes:

- a assumes no appeal
- b no regulatory permitting is included as little information is available until the environmental studies are completed
- c assumes development of a Public Works Plan and six months for permitting with the Coastal Commission following the EIR certification by the Board
- d assumes concurrent land acquisition and Coastal Commission review - high risk

**Board Request No. 3:**

**What facilities have been proposed for a 5-year, 24-hour storm? How are they different from that proposed for a 10-year, 6-hour storm?**

**Response to Request No. 3:**

A 10-year 6-hour storm is a shorter duration storm with a lower volume of precipitation (2.4 inches of rain) than a 5-year 24-hour storm (4 inches of rain). The required size of the proposed storage basin for each design storm will be different, **0.6 million gallons (MG)** for the 10-year storm vs. **2.3 MG** for the 5-year storm.

The tables below compare the respective sizes and estimated costs of the facilities proposed for a 5-year, 24-hour storm versus a 10-year, 6-hour storm.

**Table 2-1 Design Storm Comparison**

<b>Storage Tank</b>			
<b>5-year, 24-hour storm (2004 concept)</b>		<b>10-year, 6-hour storm (2005 concept)</b>	
<b>Proposed Facilities <sup>1</sup></b>	<b>Cost, Dollars</b>	<b>Proposed Facilities <sup>2</sup></b>	<b>Cost, Dollars</b>
2.3 MG Storage Basin at PPS <sup>3</sup>	\$ 7.1 M	0.6 MG Storage Basin at PPS <sup>4</sup>	\$ 2.9 M
Land Acquisition	\$ 0.5 M	Land Acquisition	\$ 0.2 M
New Pumps with VFDs at PPS	\$ 1.2 M	New Pumps with VFDs at PPS	Not Included
Flow Meter Vault	\$ 0.2 M	Flow Meter Vault	Not Included
New Junction Structure	\$ 0.2 M	New Junction Structure	Not Included
Eng., legal, admin @ 20%	\$ 1.8 M	Eng., legal, admin @ 23%	\$ 0.7 M
<b>Total Estimate of Probable Cost</b>	<b>\$ 11 M</b>	<b>Total Estimate of Probable Cost</b>	<b>\$ 3.8 M</b>
<b>Estimate of Probable Cost per Capita</b>	<b>\$440/pp</b>	<b>Estimate of Probable Cost Per Capita</b>	<b>\$152/pp</b>

<sup>1</sup> Based on Table 4, page 13, Carollo Project Memorandum, August 19, 2004, for Alternative 2A.

<sup>2</sup> Based on Table 1, page 6, Carollo Project Memorandum, January 20, 2005, for Alternative 3A-2.

<sup>3</sup> Carollo proposed to phase this project. Phase I involves the construction of a 0.5 MG storage basin at PPS at \$1.4 million, phase II involves the expansion of the storage basin by another 1.8 MG at \$5.7 million.

<sup>4</sup> Due to the shorter duration and lower volume of the storm, the volume of excess flow needed to be stored is only 0.6 MG in contrast to the 2.3 MG proposed for the other storm.

**Table 2-2 Design Storm Comparison**

<b>Force Main</b>			
<b>5-year, 24-hour storm (2004 concept)</b>		<b>10-year, 6-hour storm (2007 concept)</b>	
<b>Proposed Facilities <sup>5</sup></b>	<b>Cost, Dollars</b>	<b>Proposed Facilities <sup>6</sup></b>	<b>Cost, Dollars</b>
0.4 MG Storage Basin	\$ 1.1 M	No Storage Basin required	--
Land Acquisition	\$ 0.5 M	No Land Acquisition required	--
New Pumps with VFDs at PPS	\$ 1.2 M	New Pumps with VFDs at PPS	\$ 1.2 M
14" force main (8,850 LF, HDPE)	\$ 4.5 M	14" force main (8,850 LF, PVC)	\$ 2 M
Easement Acquisition for Pipeline	\$ 0.3 M	No Easement Acquisition for Pipeline required	--
Flow Metering and Valve Vault	\$ 0.3 M	Flow Metering and Valve Vault	Not Included
New Junction Structures	\$ 0.2 M	New Junction Structures	Not Included
0.47 MG Storage Basin at WWTP	\$ 0.2 M	0.13 MG Storage Basin at WWTP	\$ 0.2 M
Eng., legal, admin @ 20%	\$ 1.7 M	Eng., legal, admin @ 90% <sup>7</sup>	3.1 M
<b>Total Estimate of Probable Cost</b>	<b>\$ 10 M</b>	<b>Total Estimate of Probable Cost</b>	<b>\$ 6.5 M</b>
<b>Estimate of Probable Cost per Capita</b>	<b>\$400/pp</b>	<b>Estimate of Probable Cost Per Capita</b>	<b>\$260/pp</b>

<sup>5</sup> Based on Table 4, page 13, Carollo Project Memorandum, August 19, 2004, for Alternative 2B.

<sup>6</sup> Based on Table 1, page 22, Carollo Project Memorandum, June 21, 2007, for Alternative 4.

<sup>7</sup> Multiple markups: Contingency @ 20%, General Conditions @ 10%, General Contractor OH&P @ 10%, Sales Tax @ 8.5%, Escalation to Mid-Point of Construction @ 8%, Engineering, Legal, & Admin Fees @ 18%, Owner's Reserve for Change Orders @ 2%; Total to approximately 89.6 % of the Total Direct Cost.

The following discussion provides a summary of the facilities proposed for each design storm.

Carollo Engineers addressed the **5-year, 24-hour** storm in its Project Memorandum (PM) dated August 19, 2004. Two options were proposed:

- A new 2.3 MG storage tank at Portola Pump Station (PPS), assuming that the 0.5MG storage volume at Montara basin is fully available, the WWTP can run at full capacity (15 MGD), and the Portola pump can pump at 4.5 MGD.
- A new 14-inch force main, a new 0.4 MG storage tank at PPS, and a new 0.47 MG storage tank at the WWTP. New force main would need to upgrade the PPS to pump at a capacity of 7.2 million gallons per day (mgd). Need to replace the low manholes with pressure manholes to prevent sewerage backup into residences.

Carollo Engineers addressed the **10-year, 6-hour** storm in two PMs dated August 19, 2004 and June 21, 2007. Two options were proposed:

- Due to the shorter duration and lower volume of the storm, the volume of excess flow needed to be stored is a 0.6 MG as opposed to the 2.3 MG proposed for the other storm. A new 0.6 MG storage tank is proposed at the PPS.
- A new 14-inch force main and a new 0.13 MG storage tank at the WWTP. New force main means that the PPS also need to be upgraded to pump at a capacity of 7.2 mgd. There is no discussion about replacing the manholes with pressure manholes, and cost estimates for this work is not included in the PM.

#### **Board Request No. 4:**

**If SAM decided to adopt the 5-year, 24-hour storm as the new design storm, will the risk analysis be different?**

#### **Response to Request No. 4:**

In November, 2004, the Board directed Carollo Engineers, through SAM staff, to incorporate a 10-year/6-hour design storm into the alternatives. In January 2005, the Board approved Alternative 3A-1, an alternative based on a 10-year/6-hour design storm, to be presented to member agencies for their individual approval. This has since been referred to as SAM's preferred alternative.

If SAM decides to adopt a 5-year/24-hour design storm basis, the both alternatives will change in cost, duration, and risk factors. It is hard to predict without conducting a more detailed analysis, which of the alternatives will be impacted more than another. However, it appears that the impact on the Storage Tank Alternative will be less significant than that for the Parallel Force Main. The

Storage Tank Alternative may become less costly and carry a lower risk for implementation.

The facilities designed for a 5-year/24-hour storm will have a significantly higher capacity to accommodate wet weather flows. It should be noted, however, that the increased capacity required for the 5-year, 24-hour design storm, has a low probability of being utilized. For instance, experiencing a single rain event that deposits about 20 percent of the annual average rainfall in 24 hours is much less likely than experiencing an event that delivers about 10 percent of the annual average rainfall.

If the Board wishes to use the 5-year/24-hour storm as the design event, the following are the impacts of this change.

**Storage Tank:**

1. Land acquisition cost may increase. A 0.6 MG storage tank requires about 0.2 acre of land. A 2.3 MG storage tank would require 4 times more land area, assuming the depth remains the same due to excavation limitations.
2. Project construction and schedule will increase. It takes more time and cost to construct a 2.3 MG tank than a 0.6 MG tank.
3. A change in design and schedule may jeopardize the CBI grant funding.
4. Possibly greater O&M issues with the larger tank.
5. Public perception of a larger tank may not be the same as for a smaller tank.
6. Possibly more environmental impacts, both temporary and permanent.

**Force Main Alternative:**

1. No change in length or diameter of the proposed force main.
2. A 0.43 MG storage tank would be required at the WWTP, which is 3 times bigger than that required for a 10-year, 6-hour storm. In addition, there is no land at the WWTP for a 0.43 MG storage tank, which poses a significant impact to the project schedule and cost.
3. Cost will increase due to the construction of a bigger storage tank at WWTP and the need to acquire additional land for the tank at the adjacent site, which is very environmentally sensitive.
4. Possibly more environmental impacts, both temporary and permanent. Increased cost due to significant environmental restoration required.

Other factors such as seismic, future grant opportunities, etc. should not be impacted by the change in design criterion.

**Board Request No. 5:**

**Clarify the differences between the costs: force main estimated cost went down; storage tank estimate costs went up.**

**Response to Request No. 5:**

**Storage Tank.** The cost of the storage tank alternative increased for three reasons: \$2M was added for pump station improvements, \$0.7M was added for increased land acquisition costs, and \$1M was added for overall construction market cost increases.

The original 2005 estimate did not include the **\$2M** cost for the PPS improvements. The probable project cost was estimated at **\$3.7M** in 2005<sup>8</sup>. It was increased to **\$7.4M** in 2007<sup>9</sup> based on the additional **\$2M** cost to upgrade the Portola Pump Station and the current construction market trends. The land acquisition cost also increased from \$0.2M to \$1M according to the recently identified property value of the parcel of interest that is owned by the San Mateo County Harbor District. In addition allowances for engineering, legal, and administrative costs were increased based on the current permitting and construction climate. Tables 3-1 and 3-2 below provide summaries of the cost estimates.

**Table 3-1**

<b>Carollo, January 2005</b>	
<b>Proposed Facilities</b>	<b>Cost, dollars</b>
0.6 MG Storage Basin at PPS	\$ 2.87 M
Land Acquisition	\$ 0.2 M
Eng., legal, admin @ 23%	\$ 0.66 M
<b>Total Estimated Probable Cost</b>	<b>\$ 3.73 M</b>
<b>Total Estimated Probable Cost Per Capita</b>	<b>\$150/pp</b>

<sup>8</sup> Project Memorandum, January 20, 2005.

<sup>9</sup> Slide No. 24, Carollo Project Progress Presentation, June 24, 2007.

**Table 3-2**

<b>Carollo, June 2007</b>	
<b>Proposed Facilities</b>	<b>Cost, dollars</b>
0.6 MG Storage Basin at PPS	\$ 5.4 M <sup>10</sup>
Portola Pump Station Improvement	\$ 2.0 M
<b>Total Estimated Probable Cost</b>	<b>\$ 7.4 M</b>
<b>Total Estimated Probable Cost Per Capita</b>	<b>\$297/pp</b>

**Parallel Force Main.** The cost for this alternative decreased mostly due to the change in the proposed force main material from High Density Polyethylene (HDPE) to Polyvinylchloride (PVC).

The cost was estimated at **\$3.748M** in 2000. In 2004, Carollo analyzed the parallel force main approach for a 5-year, 24-hour storm and estimated that a 14-inch-diameter HDPE force main would cost about **\$4.5M**. Based on that estimate, it was then generally assumed that, after market adjustment and inflation, this approach for a 10-year 6-hour storm would cost approximately **\$10M** in 2006<sup>11</sup>. The estimate included costs for new WWTP storage, PPS upgrades, and the manhole replacement work.

In March 2007, Whitley Burchett Associates (WBA) proposed to use PVC pipe for the parallel force main, which brought the capital cost down to approximately **\$2.7M** for the pipe only. This cost does not include WWTP storage basin or PPS upgrades, as shown in Table 3-3 below.

**Table 3-3**

<b>WBA, 2007</b>	
<b>Proposed Facilities</b>	<b>Cost, dollars</b>
14" Force Main (8,850 LF, PVC)	<b>\$ 1.523 M</b>
Contingency @ 25%	\$ 0.381M
Eng., legal, admin @ 20%	\$ 0.381 M
Inflation @ 20%	\$\$0.457 M
<b>Total</b>	<b>\$ 2.742 M</b>

<sup>10</sup> Cost estimate based on the January 2005 report (\$3.73M) adjusted to current engineering ENR and a 25% correction for construction market.

<sup>11</sup> Rough estimates by SRT during several discussions regarding the project. No documentation available.

Carollo then adapted the suggestion of using PVC pipe for the force main. In their 2007 Project Memorandum, the cost then became **\$6.7M** to include the cost for a new storage basin at WWTP and PPS improvements, as shown in Table 3-4 below.

**Table 3-4**

<b>Carollo, June 2007 <sup>12</sup></b>	
<b>Proposed Facilities</b>	<b>Cost, dollars</b>
New Pumps with VFDs at PPS	\$ 1.237 M
14" Force Main (8,850 LF, PVC)	\$ 1.959 M
0.13 MG Storage Basin at WWTP	\$ 0.231 M
Eng., legal, admin @ 97% <sup>13</sup>	\$ 3.301 M
<b>Total</b>	<b>\$ 6.728 M</b>

**Board Request No. 6: Add seismic vulnerability and risk issues related to each of the alternatives to the matrix.**

**Response to Request No. 5:**

Based on the reconnaissance level review of the maps provided at the Association of Bay Area Governments (ABAG), it appears that the existing force main and the proposed storage tank and parallel force main are not situated near or cross any major seismic faults, which makes ground shaking one of the major seismic hazards for the facilities. Underground storage facilities are known to respond more favorably than pipelines to ground shaking, however, a detailed seismic analysis must be conducted during the design phase to ensure that seismic risk is minimized. The major risk of a seismic event appears to be to the existing 24-year-old force main, mostly due to its age, condition, and lower design standards at time of construction.

For the purposes of this risk analysis, seismic risk was identified as low, moderate, and high; and the expected seismic response (i.e., the probability of a catastrophic damage from a seismic event) as excellent, good, and poor. No engineering analysis or modeling was performed. The following indicates how the ratings are assigned:

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<sup>12</sup> Project Memorandum, June 21, 2007.

<sup>13</sup> Multiple markups: Contingency @ 20%, General Conditions @ 10%, General Contractor oh7p @ 10%, Sales Tax @ 8.5%, Escalation to Mid-Point @ 8%, Engineering, Legal, & Admin Fees @ 18%, Owner's Reserve for Change Orders @ 2%; Total to approximately 97 % of the original Total Direct Cost.

**Seismic Vulnerability**

**Low** not very vulnerable to a seismic event  
**Moderate** moderately vulnerable to a seismic event  
**High** highly vulnerable to a seismic event

**Expected Performance in a Seismic Event**

**Excellent** little or no damage, facility operational  
**Good** some damage, facility operational  
**Poor** major damage, facility not operational

As requested, the seismic response and risk factors have been added to the matrix included in Exhibit A. A summary is presented in Table 4 below.

**Table 4**

<b>Alternatives/ Risk and Performance</b>	<b>Storage Tank</b>	<b>Parallel Force Main</b>	<b>No Project (Existing Force Main)</b>
Seismic Vulnerability	low	moderate	moderate
Seismic Performance	excellent	good	poor

**Notes:**

1. An underground storage tank is expected to have a lower seismic risk than the pipeline due to the greater pipeline length;
2. For the same reason as above, the storage tank would be expected to have an excellent response to a major seismic event with little or no damage and remaining operational after a major seismic event.
3. The existing pipeline is expected to sustain damage and may not be operational following a major seismic event.

## Wet Weather Flow Management Project DRAFT Alternative Risk-Benefit Analysis

<b>POTENTIAL RISKS</b>		
<b>Underground Storage Tank</b>	<b>Parallel Force Main</b>	<b>No Project</b>
<ul style="list-style-type: none"> <li>• Land purchase required: budget and schedule impacts</li> <li>• Does NOT address a catastrophic failure of the existing force main due to poor condition or in a seismic event</li> <li>• Possible neighborhood concerns with increased odor potential</li> <li>• “Save the strip” position unknown</li> <li>• Does NOT allow for extensive rehabilitation of the existing 24-year-old force main</li> <li>• Higher cost than the force main</li> </ul>	<ul style="list-style-type: none"> <li>• Permits required: schedule and cost impacts</li> <li>• Permanent impacts to wildlife and/or wetlands</li> </ul>	<ul style="list-style-type: none"> <li>• Does NOT meet SAM Board’s goals of addressing the 10-yr/6-hr storm</li> <li>• Continued SSOs and associated annual costs</li> <li>• Regional Board, EPA, NOAA fines and/or enforced action</li> <li>• Poor public perception</li> <li>• Lost CBI and FEMA grant funding</li> <li>• Permanent public health and environmental impacts of SSOs</li> <li>• Does NOT address a catastrophic failure of the existing force main due to condition or in a seismic event</li> <li>• Most expensive option</li> </ul>

## Wet Weather Flow Management Project DRAFT Alternative Risk-Benefit Analysis

<b>POTENTIAL BENEFITS</b>		
<b>Underground Storage Tank</b>	<b>Parallel Force Main</b>	<b>No Project</b>
<ul style="list-style-type: none"> <li>Addresses SSOs for the design storm</li> <li>Possible additional public benefit of using the proposed tank site for recreation</li> <li>CBI and FEMA Grant Funding</li> </ul>	<ul style="list-style-type: none"> <li>Addresses SSOs for the design storm</li> <li>Provides system redundancy</li> <li>Provides operational flexibility</li> <li>Allows for extensive rehabilitation of the existing 24-year-old pipeline</li> <li>CBI and FEMA Grant Funding</li> </ul>	<ul style="list-style-type: none"> <li>No construction activities</li> </ul>

<b>COST ANALYSIS</b>		
<b>Underground Storage Tank</b>	<b>Parallel Force Main</b>	<b>No Project</b>
Estimated Total Annualized Costs		
\$213,670/year	\$198,540/year	\$299,384/year
Per Capita Estimated Total Annualized Costs		
\$9/capita/year	\$8/capita/year	\$12/capita/year

## Wet Weather Flow Management Project DRAFT Alternative Risk-Benefit Analysis

<b>COST ANALYSIS ASSUMPTIONS</b>		
<b>All Alternatives</b>		
<ul style="list-style-type: none"> <li>• 10-year, 6-hour design storm</li> <li>• Existing Force Main failure every three (3) years</li> <li>• Population of 25,000</li> <li>• SSO fines range between \$0.258/gallon and \$10/gallon; plus legal and other party fees</li> <li>• Grant funding NOT included</li> <li>• Approx. \$400,000 cost of 30 temporary tanks needed to address the design storm NOT included</li> </ul>		
<b>Underground Storage Tank</b>	<b>Parallel Force Main</b>	<b>No Project</b>
<ul style="list-style-type: none"> <li>• \$7.4M capital cost</li> <li>• \$1M for land acquisition</li> <li>• 20-year present worth cost based on 3% inflation and 2.5% SRF Loan interest rate</li> <li>• Existing Force Main emergency repair at \$50,000 each every 3 years</li> <li>• 5 confined space entries/year for cleaning and maintenance</li> <li>• Existing Force Main repairs limited to outside only</li> </ul>	<ul style="list-style-type: none"> <li>• \$6.7M capital cost</li> <li>• 20-year present worth cost based on 3% inflation and 2.5% SRF loan interest rate</li> <li>• 10 man-days/year for maintenance</li> <li>• Existing Force Main emergency repair at \$50,000 each every 6 years</li> </ul>	<ul style="list-style-type: none"> <li>• No capital cost</li> <li>• 20-year present worth cost based on 3% inflation and No SRF loan</li> <li>• Existing Force Main repair at \$50,000 each</li> <li>• Overflow volume of 250,000 gallons at ADF flows</li> <li>• One overflow in 10 years</li> <li>• Existing Force Main repairs limited to outside only</li> </ul>

## **Wet Weather Flow Management Project DRAFT Alternative Risk-Benefit Analysis**

### Notes:

1. The existing force main will have the same potential for needing emergency repairs in all scenarios, unless cost is added for rehabilitation that would lessen this potential. The difference between options is in the ability to be shutdown for repairs – storage buys some time and having full redundancy buys the most time.
2. The use of a 20-year-present-worth cost is based on the State Revolving Fund Loan repayment schedule of 20 years. The expected useful life of most of the proposed facilities would be greater than 20 years.



Parameter	Underground Storage Tank	Parallel Force Main	No Project
<b>Project Description</b>	<ul style="list-style-type: none"> <li>600,000-gallon underground storage tank</li> <li>120 x 70 feet, 12.5 feet deep</li> <li>Location: empty lot in front of Portola Pump Station</li> </ul>	<ul style="list-style-type: none"> <li>14-inch diameter new force main</li> <li>Approximately 8,850 feet in length</li> <li>Parallel to the existing 24-year old pipeline in Caltrans ROW</li> </ul>	<ul style="list-style-type: none"> <li>Postpone mitigation action</li> <li>Continued risk of SSOs and enforcement actions by the Regional Board, EPA, NOAA and 3rd parties</li> </ul>
<b>Permitting and CEQA Issues</b>	<ul style="list-style-type: none"> <li>CDP required from San Mateo County</li> <li>Mitigated Negative Declaration (MND) most likely</li> <li>No permanent environmental impacts</li> </ul>	<ul style="list-style-type: none"> <li>CDP required from San Mateo County and the City of HMB</li> <li>MND may be possible</li> <li>Permits will be required from CDFG, RWQCB, and USACE</li> </ul>	<ul style="list-style-type: none"> <li>No permits. FINES.</li> </ul>
<b>Ability to handle 10-yr/6-hr design storm</b>	<ul style="list-style-type: none"> <li>YES</li> </ul>	<ul style="list-style-type: none"> <li>YES</li> </ul>	<ul style="list-style-type: none"> <li>NO</li> </ul>
<b>Ability to handle 10-yr/6-hr storm with more connections than LCP limit</b>	<ul style="list-style-type: none"> <li>NO</li> </ul>	<ul style="list-style-type: none"> <li>NO</li> </ul>	<ul style="list-style-type: none"> <li>NO</li> </ul>
<b>Public Perception</b>	<ul style="list-style-type: none"> <li>Possible public recreational opportunities on site</li> <li>Odor potential may be of concern</li> <li>“Save the Strip” most likely will support</li> </ul>	<ul style="list-style-type: none"> <li>Possible permanent environmental impacts</li> <li>Growth inducement perception</li> </ul>	<ul style="list-style-type: none"> <li>Possible public outcry over continued SSOs</li> <li>Permanent damage to the environment</li> <li>Public health impacts</li> </ul>
<b>Consistency with EPA Findings</b>	<ul style="list-style-type: none"> <li>Design Storm – YES</li> <li>Force Main Reliability – NO</li> </ul>	<ul style="list-style-type: none"> <li>Design Storm – YES</li> <li>Force Main Reliability – YES</li> </ul>	<ul style="list-style-type: none"> <li>Design Storm – NO</li> <li>Force Main Reliability – NO</li> </ul>
<b>Schedule</b>	<ul style="list-style-type: none"> <li>Up to 36 months for implementation</li> </ul>	<ul style="list-style-type: none"> <li>Up to 36 months for implementation</li> </ul>	<ul style="list-style-type: none"> <li>NA – continue temporary reactive measures</li> </ul>
<b>Grant Impacts</b>	<ul style="list-style-type: none"> <li>Meets the CBI grant funding timeframe</li> <li>Possible FEMA grant</li> </ul>	<ul style="list-style-type: none"> <li>Meets the CBI grant funding timeframe</li> <li>Possible FEMA grant</li> </ul>	<ul style="list-style-type: none"> <li>Lost grant funding opportunity</li> </ul>
<b>Land Acquisition and ROW</b>	<ul style="list-style-type: none"> <li>Land acquisition is required</li> <li>Permitting and coordination with Caltrans is required</li> </ul>	<ul style="list-style-type: none"> <li>No land acquisition is required</li> <li>Permitting and coordination with Caltrans is required</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>
<b>Seismic Risk</b>	<ul style="list-style-type: none"> <li>Low vulnerability</li> <li>High level of response</li> </ul>	<ul style="list-style-type: none"> <li>Moderate vulnerability</li> <li>Good level of response</li> </ul>	<ul style="list-style-type: none"> <li>Moderate vulnerability</li> <li>Poor level of response</li> </ul>



### BOARD REQUESTS AND RESPONSES SUMMARY

BOARD REQUEST	RESPONSE	RESPONSE
	STORAGE TANK	PIPELINE
<ul style="list-style-type: none"> <li>• <b>Add “If Appealed” additional time to schedules for each of the alternatives</b></li> <li>• <b>Add Minimum/Maximum permitting time to the schedule</b></li> </ul>	<p>Two main factors affect the schedule risks for this alternative: (A) the required land purchase by SAM and (B) an appeal potential at the Coastal Commission.</p> <p>Since the property acquisition cannot officially start until the environmental analyses under the California Environmental Quality Act (CEQA) are complete, the land acquisition process is included in the schedule with a start date of March 2008 and duration of six months to complete. This assumes that SAM would be able to amicably negotiate this land acquisition. If eminent domain proceedings need to be initiated, the duration may extend to one year.</p> <p>An appeal at the Coastal Commission may extend the project schedule by six months to one year. The probability of appeal for this alternative appears to be low to moderate at this time.</p> <ul style="list-style-type: none"> <li>▪ - Land Acquisition adds: <span style="float: right;">six</span> months to one year</li> <li>▪ - Appeal potential at the Coastal Commission adds : <span style="float: right;">six</span> months to one year</li> </ul> <p>Added together, these two risk factors may add an additional one to two years to the project implementation schedule.</p>	<p>One factor may impact the schedule for this alternative, an appeal potential at the Coastal Commission. An appeal at the Coastal Commission may extend the project schedule by six months to one year. The probability of appeal for this alternative appears to be moderate to high at this time.</p> <p>Appeal potential at the Coastal Commission adds : <span style="float: right;">six months to one year</span></p>

**BOARD REQUESTS AND RESPONSES SUMMARY**

<p><b>What facilities have been proposed for a 5-year, 24-hour storm? How are they different from that proposed for a 10-year, 6-hour storm?</b></p>	<p>Carollo Engineers addressed the <b>5-year, 24-hour</b> storm in its Project Memorandum (PM) dated August 19, 2004. Two options were proposed:</p> <ul style="list-style-type: none"> <li>• A new 2.3 MG storage tank at Portola Pump Station (PPS), assuming that the 0.5MG storage volume at Montara basin is fully available, the WWTP can run at full capacity (15 MGD), and the Portola pump can pump at 4.5 MGD.</li> <li>• A new 14-inch force main, a new 0.4 MG storage tank at PPS, and a new 0.47 MG storage tank at the WWTP. New force main would need to upgrade the PPS to pump at a capacity of 7.2 million gallons per day (mgd). Need to replace the low manholes with pressure manholes to prevent sewerage backup into residences.</li> </ul>	<p>Carollo Engineers addressed the <b>10-year, 6-hour</b> storm in two PMs dated August 19, 2004 and June 21, 2007. Two options were proposed:</p> <ul style="list-style-type: none"> <li>• Due to the shorter duration and lower volume of the storm, the volume of excess flow needed to be stored is a 0.6 MG as opposed to the 2.3 MG proposed for the other storm. A new 0.6 MG storage tank is proposed at the PPS.</li> <li>• A new 14-inch force main and a new 0.13 MG storage tank at the WWTP. New force main means that the PPS also need to be upgraded to pump at a capacity of 7.2 mgd. There is no discussion about replacing the manholes with pressure manholes, and cost estimates for this work is not included in the PM.</li> </ul>
<p><b>If SAM decided to adopt the 5-year, 24-hour storm as the new design storm, will the risk analysis be different?</b></p>	<ol style="list-style-type: none"> <li>1. Land acquisition cost may increase. A 0.6 MG storage tank requires about 0.2 acre of land. A 2.3 MG storage tank would require 4 times more land area, assuming the depth remains the same due to excavation limitations.</li> <li>2. Project construction and schedule will increase. It takes more time and cost to construct a 2.3 MG tank than a 0.6 MG tank.</li> <li>3. A change in design and schedule may jeopardize the CBI grant funding.</li> <li>4. Possibly greater O&amp;M issues with the larger tank.</li> <li>5. Public perception of a larger tank may not be the same as for a smaller tank.</li> <li>6. Possibly more environmental impacts, both temporary and permanent.</li> </ol>	<ol style="list-style-type: none"> <li>1. No change in length or diameter of the proposed force main.</li> <li>2. A 0.43 MG storage tank would be required at the WWTP, which is 3 times bigger than that required for a 10-year, 6-hour storm. In addition, there is no land at the WWTP for a 0.43 MG storage tank, which poses a significant impact to the project schedule and cost.</li> <li>3. Cost will increase due to the construction of a bigger storage tank at WWTP and the need to acquire additional land for the tank at the adjacent site, which is very environmentally sensitive.</li> <li>4. Possibly more environmental impacts, both temporary and permanent. Increased cost due to significant environmental restoration required.</li> </ol>
<p><b>Clarify the differences between the costs: force main estimated cost went down; storage tank estimate costs went up</b></p>	<p>The original 2005 estimate did not include the <b>\$2M</b> cost for the PPS improvements. The probable project cost was estimated at <b>\$3.7M</b> in 2005<sup>1</sup>. It was increased to <b>\$7.4M</b> in 2007<sup>2</sup> based on the additional <b>\$2M</b> cost to upgrade the Portola Pump Station and the current construction market trends. The land acquisition cost also increased from \$0.2M to \$1M according to the recently identified property value of the parcel of</p>	<p>The cost for this alternative decreased mostly due to the change in the proposed force main material from High Density Polyethylene (HDPE) to Polyvinylchloride (PVC).The cost was estimated at <b>\$3.748M</b> in 2000. In 2004, Carollo analyzed the parallel force main approach for a 5-year, 24-hour storm and estimated that a 14-inch-diameter HDPE force main would cost about <b>\$4.5M</b>. Based on that estimate, it was then generally assumed that, after market adjustment and inflation, this approach for a 10-year 6-hour storm would cost approximately <b>\$10M</b> in 2006<sup>3</sup>. The estimate included costs for new WWTP storage, PPS upgrades, and the</p>

<sup>1</sup> Project Memorandum, January 20, 2005.

<sup>2</sup> Slide No. 24, Carollo Project Progress Presentation, June 24, 2007.

<sup>3</sup> Rough estimates by SRT during several discussions regarding the project. No documentation available.

**BOARD REQUESTS AND RESPONSES SUMMARY**

	interest that is owned by the San Mateo County Harbor District. In addition allowances for engineering, legal, and administrative costs were increased based on the current permitting and construction climate.	manhole replacement work. In March 2007, Whitley Burchett Associates (WBA) proposed to use PVC pipe for the parallel force main, which brought the capital cost down to approximately <b>\$2.7M</b> for the pipe only.
<b>Add seismic vulnerability and risk issues related to each of the alternatives to the matrix</b>	The storage tank is expected to respond well to a seismic event and sustain little to no damage.	The pipeline due to its longitudinal nature may sustain higher level of damage after a seismic event.

**Four Schedules are Included:**

- 1. Storage Tank Best Case**
- 2. Storage Tank Worst Case**
- 3. Parallel Pipeline Best Case**
- 4. Parallel Pipeline Worst Case**

**Sewer Authority Mid-Coastside  
Wet Weather Flow Management Program  
Alternative 1: Underground Storage Tank (Best Case Scenario)**

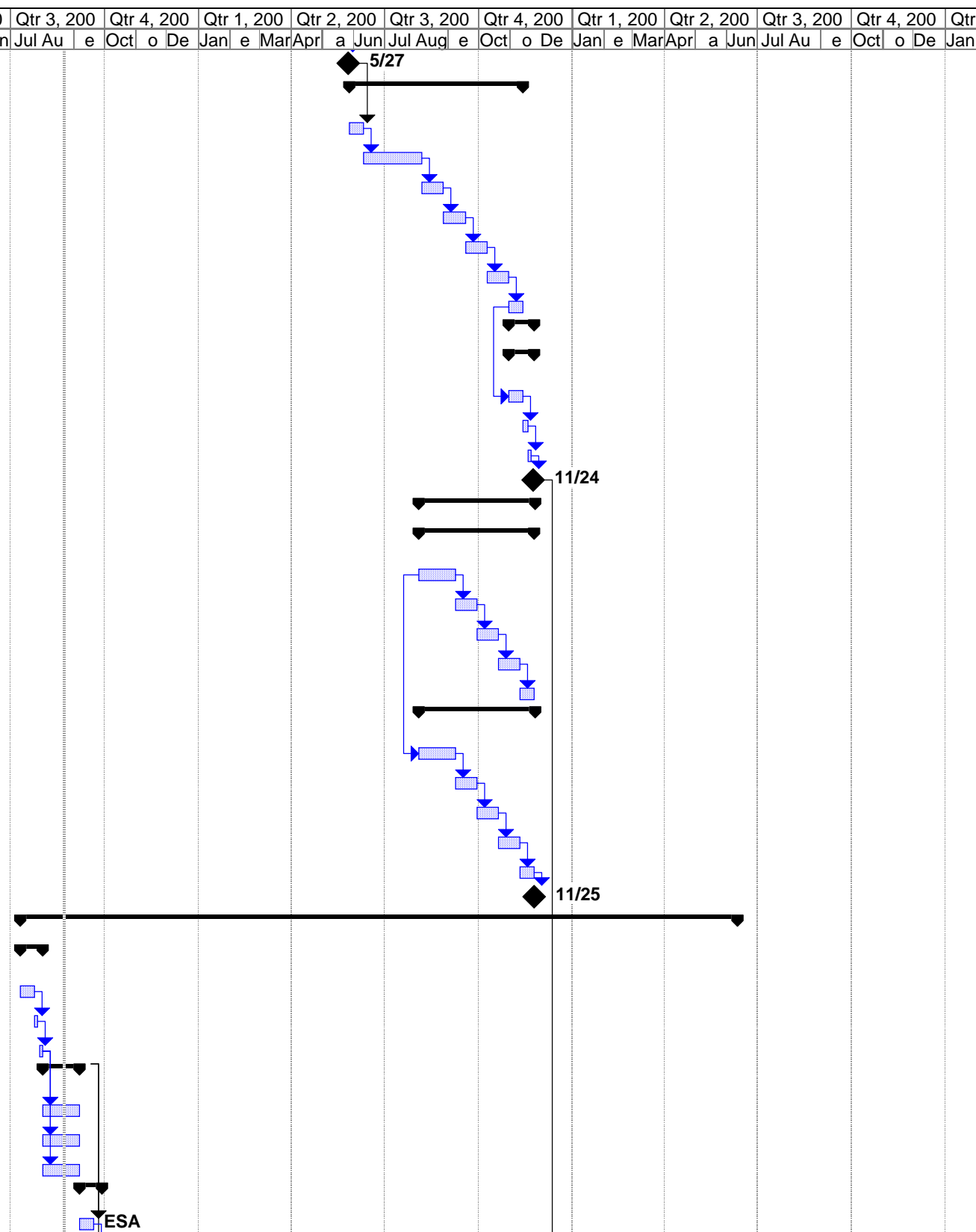
ID	Task Name	Duration	Start	Finish	Predecessors	2, 200	Qtr 3, 200	Qtr 4, 200	Qtr 1, 200	Qtr 2, 200	Qtr 3, 200	Qtr 4, 200	Qtr 1, 200	Qtr 2, 200	Qtr 3, 200	Qtr 4, 200	Qtr	
						a Jun	Jul Au	e Oct	o De	Jan e	Mar	Apr	a Jun	Jul Aug	e Oct	o De	Jan e	Mar
1	<b>Notice to Proceed</b>	1 day	Fri 6/1/07	Fri 6/1/07		◆ 6/1												
2	<b>Project Management and Coordination</b>	578 days	Wed 8/15/07	Wed 11/18/09			◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
3	<b>Kick-Off Meeting</b>	1 day	Mon 8/20/07	Mon 8/20/07			◆ 8/20											
4	<b>Project Work Plan and Schedule</b>	60 days	Tue 8/21/07	Mon 11/12/07			◆	◆										
8	<b>Project Meetings</b>	578 days	Wed 8/15/07	Wed 11/18/09			◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
37	<b>CEQA Compliance</b>	517 days	Fri 6/1/07	Thu 6/11/09		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
38	<b>Project Description</b>	65 days	Fri 6/1/07	Thu 8/30/07		◆	◆											
39	Draft Project Description	30 days	Fri 6/1/07	Thu 7/12/07		◆	◆											
40	SAM Review	15 days	Fri 7/13/07	Thu 8/2/07	39	◆	◆											
41	Final Project Description	20 days	Fri 8/3/07	Thu 8/30/07	40	◆	◆	◆ 8/30										
42	<b>CEQA Scoping</b>	95 days	Mon 7/16/07	Wed 11/28/07		◆	◆	◆	◆									
43	<b>Notice of Preparation (NOP)</b>	79 days	Mon 7/16/07	Fri 11/2/07		◆	◆	◆	◆									
44	Draft NOP	25 days	Mon 7/16/07	Fri 8/17/07		◆	◆											
45	SAM Review	14 days	Mon 8/20/07	Fri 9/7/07	44	◆	◆											
46	Final NOP	10 days	Mon 9/10/07	Fri 9/21/07	45	◆	◆	◆ 9/21										
47	Circulate NOP	30 days	Mon 9/24/07	Fri 11/2/07	46	◆	◆	◆	◆									
48	<b>Scoping Meeting</b>	26 days	Mon 10/22/07	Wed 11/28/07		◆	◆	◆	◆									
49	EIR Scoping Meeting/Workshop	1 day	Mon 10/22/07	Mon 10/22/07		◆	◆	◆ 10/22										
50	Draft Scoping Summary Report	15 days	Tue 10/23/07	Mon 11/12/07	49	◆	◆											
51	SAM Review	5 days	Tue 11/13/07	Mon 11/19/07	50	◆	◆											
52	Final Scoping Summary Report	5 days	Tue 11/20/07	Wed 11/28/07	51	◆	◆											
53	<b>Draft Environmental Impact Report (Draft EIR)</b>	186 days	Tue 10/23/07	Fri 7/18/08		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
54	Draft EIR Outline, Significant Criteria and Alternatives	10 days	Tue 10/23/07	Mon 11/5/07	49	◆	◆											
55	SAM Review	5 days	Tue 11/6/07	Mon 11/12/07	54	◆	◆											
56	Final EIR Outline, Significant Criteria and Alternatives	3 days	Tue 11/13/07	Thu 11/15/07	55	◆	◆											
57	Admin Draft EIR	35 days	Fri 11/16/07	Wed 1/9/08	56	◆	◆	◆	◆									
58	SAM Review	15 days	Thu 1/10/08	Thu 1/31/08	57	◆	◆	◆	◆									
59	Screen Check EIR	25 days	Fri 2/1/08	Fri 3/7/08	58	◆	◆											
60	SAM Review	15 days	Mon 3/10/08	Fri 3/28/08	59	◆	◆											
61	Draft EIR	35 days	Mon 3/31/08	Fri 5/16/08	60	◆	◆											
62	Circulate Draft EIR for Public Review	45 days	Mon 5/19/08	Fri 7/18/08	61	◆	◆											
63	<b>Coordinate Public Hearing</b>	161 days	Mon 3/31/08	Thu 11/13/08		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
64	<b>Notice of Completion</b>	35 days	Mon 3/31/08	Fri 5/16/08		◆	◆	◆	◆									
65	Draft Notice of Completion	20 days	Mon 3/31/08	Fri 4/25/08	61SS	◆	◆											
66	SAM Review	10 days	Mon 4/28/08	Fri 5/9/08	65	◆	◆											
67	Final Notice of Completion	5 days	Mon 5/12/08	Fri 5/16/08	66	◆	◆	◆ 5/16										
68	<b>Public Hearing</b>	41 days	Mon 3/31/08	Tue 5/27/08		◆	◆	◆	◆									
69	Draft Notice of Public Hearing	20 days	Mon 3/31/08	Fri 4/25/08	61SS	◆	◆											
70	SAM Review	10 days	Mon 4/28/08	Fri 5/9/08	69	◆	◆											
71	Final Notice of Public Hearing	10 days	Mon 5/12/08	Fri 5/23/08	70	◆	◆											

Date: Wed 8/22/07  
Revision 03b  
Page 1 of 3

Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			

**Sewer Authority Mid-Coastside  
Wet Weather Flow Management Program  
Alternative 1: Underground Storage Tank (Best Case Scenario)**

ID	Task Name	Duration	Start	Finish	Predecessors	2, 200	Qtr 3, 200	Qtr 4, 200	Qtr 1, 200	Qtr 2, 200	Qtr 3, 200	Qtr 4, 200	Qtr 1, 200	Qtr 2, 200	Qtr 3, 200	Qtr 4, 200	Qtr	
						a Jun	Jul Au	e Oct o De	Jan e Mar	Apr a Jun	Jul Aug e	Oct o De	Jan e Mar	Apr a Jun	Jul Au	e Oct o De	Jan	
72	Public Hearing	1 day	Tue 5/27/08	Tue 5/27/08	71													
73	<b>Response to Comments (Final EIR)</b>	<b>120 days</b>	<b>Wed 5/28/08</b>	<b>Thu 11/13/08</b>														
74	List of Written Comments	10 days	Wed 5/28/08	Tue 6/10/08	72													
75	Draft Response to Comments	40 days	Wed 6/11/08	Wed 8/6/08	74													
76	SAM Review	15 days	Thu 8/7/08	Wed 8/27/08	75													
77	Screen Check Response to Comments	15 days	Thu 8/28/08	Thu 9/18/08	76													
78	SAM Review	15 days	Fri 9/19/08	Thu 10/9/08	77													
79	Final Response to Comments (a.k.a. Final EIR)	15 days	Fri 10/10/08	Thu 10/30/08	78													
80	Distribute Final Response to Comments (a.k.a. Final EIR)	10 days	Fri 10/31/08	Thu 11/13/08	79													
81	<b>Certification of Final EIR</b>	<b>17 days</b>	<b>Fri 10/31/08</b>	<b>Mon 11/24/08</b>														
82	<b>Notice of Determination (NOD)</b>	<b>17 days</b>	<b>Fri 10/31/08</b>	<b>Mon 11/24/08</b>														
83	Draft NOD	10 days	Fri 10/31/08	Thu 11/13/08	80SS													
84	SAM Review	3 days	Fri 11/14/08	Tue 11/18/08	83													
85	Final NOD	3 days	Wed 11/19/08	Fri 11/21/08	84													
86	Certify NOD	1 day	Mon 11/24/08	Mon 11/24/08	85													
87	<b>CEQA Findings and Mitigation, Monitoring and Reporting Plan (MMRP)</b>	<b>81 days</b>	<b>Mon 8/4/08</b>	<b>Tue 11/25/08</b>														
88	<b>CEQA Findings</b>	<b>80 days</b>	<b>Mon 8/4/08</b>	<b>Mon 11/24/08</b>														
89	Admin Draft CEQA Findings	25 days	Mon 8/4/08	Mon 9/8/08														
90	SAM Review	15 days	Tue 9/9/08	Mon 9/29/08	89													
91	Draft CEQA Findings	15 days	Tue 9/30/08	Mon 10/20/08	90													
92	SAM Review	15 days	Tue 10/21/08	Mon 11/10/08	91													
93	Final CEQA Findings	10 days	Tue 11/11/08	Mon 11/24/08	92													
94	<b>MMRP</b>	<b>81 days</b>	<b>Mon 8/4/08</b>	<b>Tue 11/25/08</b>														
95	Admin Draft MMRP	25 days	Mon 8/4/08	Mon 9/8/08	89SS													
96	SAM Review	15 days	Tue 9/9/08	Mon 9/29/08	95													
97	Draft MMRP	15 days	Tue 9/30/08	Mon 10/20/08	96													
98	SAM Review	15 days	Tue 10/21/08	Mon 11/10/08	97													
99	Final MMRP	10 days	Tue 11/11/08	Mon 11/24/08	98													
100	Project Approval by SAM	1 day	Tue 11/25/08	Tue 11/25/08	99													
101	<b>Environmental Studies and Permitting</b>	<b>489 days</b>	<b>Wed 7/11/07</b>	<b>Thu 6/11/09</b>														
102	<b>Identify Required Environmental Studies</b>	<b>16 days</b>	<b>Wed 7/11/07</b>	<b>Wed 8/1/07</b>														
103	Draft Technical Memorandum on Required Environmental Studies	10 days	Wed 7/11/07	Tue 7/24/07														
104	SAM Review	3 days	Wed 7/25/07	Fri 7/27/07	103													
105	Final Technical Memorandum on Required Environmental Studies	3 days	Mon 7/30/07	Wed 8/1/07	104													
106	<b>Environmental Studies</b>	<b>25 days</b>	<b>Thu 8/2/07</b>	<b>Thu 9/6/07</b>														
107	Biological Resources Assessment	25 days	Thu 8/2/07	Thu 9/6/07	105													
108	Cultural Resources Assessment	25 days	Thu 8/2/07	Thu 9/6/07	105													
109	Geotechnical Investigation	25 days	Thu 8/2/07	Thu 9/6/07	105													
110	<b>Environmental Survey Reports</b>	<b>16 days</b>	<b>Fri 9/7/07</b>	<b>Fri 9/28/07</b>														
111	Draft Environmental Survey Reports	10 days	Fri 9/7/07	Thu 9/20/07	106													





**Sewer Authority Mid-Coastside  
Wet Weather Flow Management Program  
Alternative 1: Underground Storage Tank (Worst Case Scenario)**

ID	Task Name	Duration	Start	Finish	Predecessors	2nd Half		1st Half		2nd Half		1st Half	
						a Jun   u   e   Oct   o	e Jan   e   a Apr   a Jun	a Jun   u   e   Oct   o	e Jan   e   a Apr   a Jun	a Jun   u   e   Oct   o	e Jan   e   a Apr   a Jun		
1	<b>Notice to Proceed</b>	1 day	Fri 6/1/07	Fri 6/1/07		◆	6/1						
2	<b>Project Management and Coordination</b>	688 days	Wed 8/15/07	Wed 4/21/10									
3	<b>Kick-Off Meeting</b>	1 day	Mon 8/20/07	Mon 8/20/07			8/20						
4	<b>Project Work Plan and Schedule</b>	60 days	Tue 8/21/07	Mon 11/12/07									
8	<b>Project Meetings</b>	688 days	Wed 8/15/07	Wed 4/21/10									
42	<b>CEQA Compliance</b>	627 days	Fri 6/1/07	Thu 11/12/09									
43	<b>Project Description</b>	65 days	Fri 6/1/07	Thu 8/30/07									
44	Draft Project Description	30 days	Fri 6/1/07	Thu 7/12/07									
45	SAM Review	15 days	Fri 7/13/07	Thu 8/2/07	44								
46	Final Project Description	20 days	Fri 8/3/07	Thu 8/30/07	45			8/30					
47	<b>CEQA Scoping</b>	95 days	Mon 7/16/07	Wed 11/28/07									
48	<b>Notice of Preparation (NOP)</b>	79 days	Mon 7/16/07	Fri 11/2/07									
49	Draft NOP	25 days	Mon 7/16/07	Fri 8/17/07									
50	SAM Review	14 days	Mon 8/20/07	Fri 9/7/07	49								
51	Final NOP	10 days	Mon 9/10/07	Fri 9/21/07	50								
52	Circulate NOP	30 days	Mon 9/24/07	Fri 11/2/07	51								
53	<b>Scoping Meeting</b>	26 days	Mon 10/22/07	Wed 11/28/07									
54	EIR Scoping Meeting/Workshop	1 day	Mon 10/22/07	Mon 10/22/07			◆	10/22					
55	Draft Scoping Summary Report	15 days	Tue 10/23/07	Mon 11/12/07	54								
56	SAM Review	5 days	Tue 11/13/07	Mon 11/19/07	55								
57	Final Scoping Summary Report	5 days	Tue 11/20/07	Wed 11/28/07	56								
58	<b>Draft Environmental Impact Report (Draft EIR)</b>	186 days	Tue 10/23/07	Fri 7/18/08									
59	Draft EIR Outline, Significant Criteria and Alternatives	10 days	Tue 10/23/07	Mon 11/5/07	54								
60	SAM Review	5 days	Tue 11/6/07	Mon 11/12/07	59								
61	Final EIR Outline, Significant Criteria and Alternatives	3 days	Tue 11/13/07	Thu 11/15/07	60								
62	Admin Draft EIR	35 days	Fri 11/16/07	Wed 1/9/08	61								
63	SAM Review	15 days	Thu 1/10/08	Thu 1/31/08	62								
64	Screen Check EIR	25 days	Fri 2/1/08	Fri 3/7/08	63								
65	SAM Review	15 days	Mon 3/10/08	Fri 3/28/08	64								
66	Draft EIR	35 days	Mon 3/31/08	Fri 5/16/08	65								
67	Circulate Draft EIR for Public Review	45 days	Mon 5/19/08	Fri 7/18/08	66								
68	<b>Coordinate Public Hearing</b>	161 days	Mon 3/31/08	Thu 11/13/08									
69	<b>Notice of Completion</b>	35 days	Mon 3/31/08	Fri 5/16/08									
70	Draft Notice of Completion	20 days	Mon 3/31/08	Fri 4/25/08	66SS								
71	SAM Review	10 days	Mon 4/28/08	Fri 5/9/08	70								
72	Final Notice of Completion	5 days	Mon 5/12/08	Fri 5/16/08	71								
73	<b>Public Hearing</b>	41 days	Mon 3/31/08	Tue 5/27/08									
74	Draft Notice of Public Hearing	20 days	Mon 3/31/08	Fri 4/25/08	66SS								
75	SAM Review	10 days	Mon 4/28/08	Fri 5/9/08	74								
76	Final Notice of Public Hearing	10 days	Mon 5/12/08	Fri 5/23/08	75								

Date: Wed 8/22/07  
Revision 03a  
Page 1 of 3

Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			

**Sewer Authority Mid-Coastside  
Wet Weather Flow Management Program  
Alternative 1: Underground Storage Tank (Worst Case Scenario)**

ID	Task Name	Duration	Start	Finish	Predecessors	2nd Half		1st Half		2nd Half		1st Half	
						a Jun Jul u e Oct o e	a Jun Jul u e Oct o e	Jan e   a Apr a Jun Jul u e Oct o e	Jan e   a Apr a Jun Jul u e Oct o e				
77	Public Hearing	1 day	Tue 5/27/08	Tue 5/27/08	76								
78	<b>Response to Comments (Final EIR)</b>	<b>120 days</b>	<b>Wed 5/28/08</b>	<b>Thu 11/13/08</b>									
79	List of Written Comments	10 days	Wed 5/28/08	Tue 6/10/08	77								
80	Draft Response to Comments	40 days	Wed 6/11/08	Wed 8/6/08	79								
81	SAM Review	15 days	Thu 8/7/08	Wed 8/27/08	80								
82	Screen Check Response to Comments	15 days	Thu 8/28/08	Thu 9/18/08	81								
83	SAM Review	15 days	Fri 9/19/08	Thu 10/9/08	82								
84	Final Response to Comments (a.k.a. Final EIR)	15 days	Fri 10/10/08	Thu 10/30/08	83								
85	Distribute Final Response to Comments (a.k.a. Final EIR)	10 days	Fri 10/31/08	Thu 11/13/08	84								
86	<b>Certification of Final EIR</b>	<b>17 days</b>	<b>Fri 10/31/08</b>	<b>Mon 11/24/08</b>									
87	<b>Notice of Determination (NOD)</b>	<b>17 days</b>	<b>Fri 10/31/08</b>	<b>Mon 11/24/08</b>									
88	Draft NOD	10 days	Fri 10/31/08	Thu 11/13/08	85SS								
89	SAM Review	3 days	Fri 11/14/08	Tue 11/18/08	88								
90	Final NOD	3 days	Wed 11/19/08	Fri 11/21/08	89								
91	Certify NOD	1 day	Mon 11/24/08	Mon 11/24/08	90								
92	<b>CEQA Findings and Mitigation, Monitoring and Reporting Plan (</b>	<b>81 days</b>	<b>Mon 8/4/08</b>	<b>Tue 11/25/08</b>									
93	<b>CEQA Findings</b>	<b>80 days</b>	<b>Mon 8/4/08</b>	<b>Mon 11/24/08</b>									
94	Admin Draft CEQA Findings	25 days	Mon 8/4/08	Mon 9/8/08									
95	SAM Review	15 days	Tue 9/9/08	Mon 9/29/08	94								
96	Draft CEQA Findings	15 days	Tue 9/30/08	Mon 10/20/08	95								
97	SAM Review	15 days	Tue 10/21/08	Mon 11/10/08	96								
98	Final CEQA Findings	10 days	Tue 11/11/08	Mon 11/24/08	97								
99	<b>MMRP</b>	<b>81 days</b>	<b>Mon 8/4/08</b>	<b>Tue 11/25/08</b>									
100	Admin Draft MMRP	25 days	Mon 8/4/08	Mon 9/8/08	94SS								
101	SAM Review	15 days	Tue 9/9/08	Mon 9/29/08	100								
102	Draft MMRP	15 days	Tue 9/30/08	Mon 10/20/08	101								
103	SAM Review	15 days	Tue 10/21/08	Mon 11/10/08	102								
104	Final MMRP	10 days	Tue 11/11/08	Mon 11/24/08	103								
105	Project Approval by SAM	1 day	Tue 11/25/08	Tue 11/25/08	104								
106	<b>Environmental Studies and Permitting</b>	<b>599 days</b>	<b>Wed 7/11/07</b>	<b>Thu 11/12/09</b>									
107	<b>Identify Required Environmental Studies</b>	<b>16 days</b>	<b>Wed 7/11/07</b>	<b>Wed 8/1/07</b>									
108	Draft Technical Memorandum on Required Environmental S	10 days	Wed 7/11/07	Tue 7/24/07									
109	SAM Review	3 days	Wed 7/25/07	Fri 7/27/07	108								
110	Final Technical Memorandum on Required Environmental S	3 days	Mon 7/30/07	Wed 8/1/07	109								
111	<b>Environmental Studies</b>	<b>25 days</b>	<b>Thu 8/2/07</b>	<b>Thu 9/6/07</b>									
112	Biological Resources Assessment	25 days	Thu 8/2/07	Thu 9/6/07	110								
113	Cultural Resources Assessment	25 days	Thu 8/2/07	Thu 9/6/07	110								
114	Geotechnical Investigation	25 days	Thu 8/2/07	Thu 9/6/07	110								
115	<b>Environmental Survey Reports</b>	<b>16 days</b>	<b>Fri 9/7/07</b>	<b>Fri 9/28/07</b>									
116	Draft Environmental Survey Reports	10 days	Fri 9/7/07	Thu 9/20/07	111								



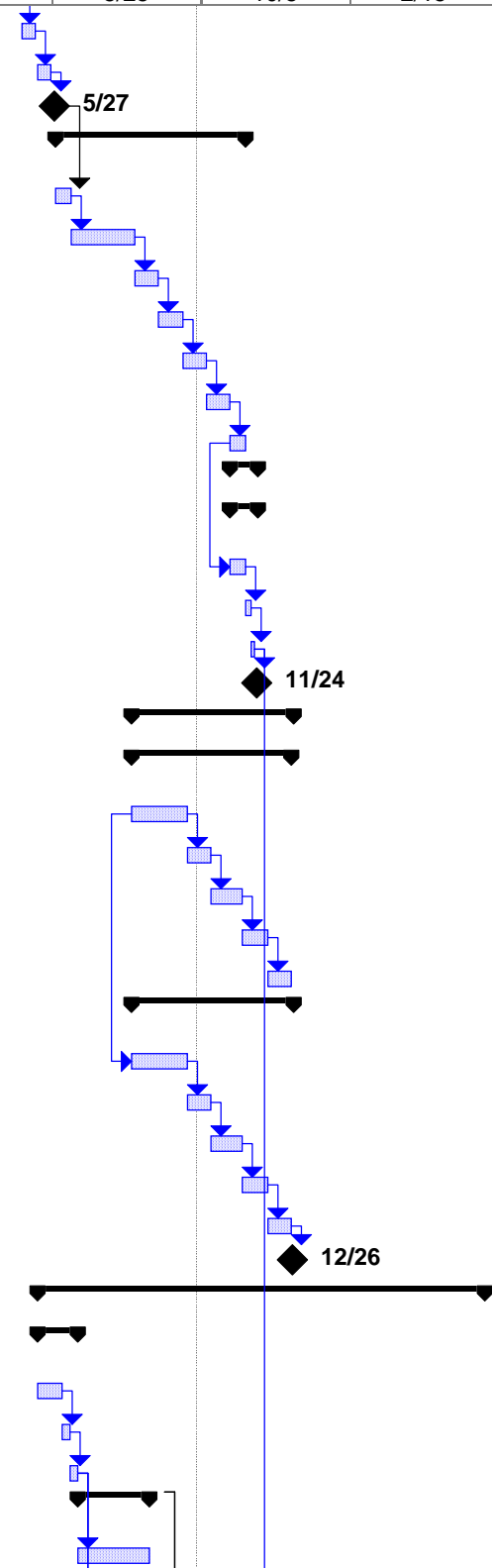
**Sewer Authority Mid-Coastside  
Wet Weather Flow Management Program  
Alternative 2: Parallel Force Main (Best Case Scenario)**

ID	Task Name	Duration	Start	Finish	Predecessors	April 1		January 1		October 1		July 1		April 1
						12/10	4/22	9/2	1/13	5/25	10/5	2/15	6/28	11/8
1	<b>Notice to Proceed</b>	1 day	Fri 6/1/07	Fri 6/1/07			◆ 6/1							
2	<b>Project Management and Coordination</b>	578 days	Wed 8/15/07	Wed 11/18/09				—						
3	<b>Kick-Off Meeting</b>	1 day	Mon 8/20/07	Mon 8/20/07			◆ 8/20							
4	<b>Project Work Plan and Schedule</b>	60 days	Tue 8/21/07	Mon 11/12/07				—						
8	<b>Project Meetings</b>	578 days	Wed 8/15/07	Wed 11/18/09				◊	◊	◊	◊	◊	◊	◊
37	<b>CEQA Compliance</b>	519 days	Fri 6/1/07	Mon 6/15/09				—						
38	<b>Project Description</b>	65 days	Fri 6/1/07	Thu 8/30/07				—						
39	Draft Project Description	30 days	Fri 6/1/07	Thu 7/12/07				▭						
40	SAM Review	15 days	Fri 7/13/07	Thu 8/2/07	39			▭						
41	Final Project Description	20 days	Fri 8/3/07	Thu 8/30/07	40			▭						
42	<b>CEQA Scoping</b>	120 days	Mon 7/16/07	Fri 1/4/08				—						
43	<b>Notice of Preparation (NOP)</b>	79 days	Mon 7/16/07	Fri 11/2/07				—						
44	Draft NOP	25 days	Mon 7/16/07	Fri 8/17/07				▭						
45	SAM Review	14 days	Mon 8/20/07	Fri 9/7/07	44			▭						
46	Final NOP	10 days	Mon 9/10/07	Fri 9/21/07	45			▭						
47	Circulate NOP	30 days	Mon 9/24/07	Fri 11/2/07	46			▭						
48	<b>Scoping Meeting</b>	51 days	Mon 10/22/07	Fri 1/4/08				—						
49	EIR Scoping Meeting/Workshop	1 day	Mon 10/22/07	Mon 10/22/07				◆ 10/22						
50	Draft Scoping Summary Report	30 days	Tue 10/23/07	Wed 12/5/07	49			▭						
51	SAM Review	10 days	Thu 12/6/07	Wed 12/19/07	50			▭						
52	Final Scoping Summary Report	10 days	Thu 12/20/07	Fri 1/4/08	51			▭						
53	<b>Draft Environmental Impact Report (Draft EIR)</b>	186 days	Tue 10/23/07	Fri 7/18/08				—						
54	Draft EIR Outline, Significant Criteria and Alternatives	10 days	Tue 10/23/07	Mon 11/5/07	49			▭						
55	SAM Review	5 days	Tue 11/6/07	Mon 11/12/07	54			▭						
56	Final EIR Outline, Significant Criteria and Alternatives	3 days	Tue 11/13/07	Thu 11/15/07	55			▭						
57	Admin Draft EIR	35 days	Fri 11/16/07	Wed 1/9/08	56			▭						
58	SAM Review	15 days	Thu 1/10/08	Thu 1/31/08	57			▭						
59	Screen Check EIR	25 days	Fri 2/1/08	Fri 3/7/08	58			▭						
60	SAM Review	15 days	Mon 3/10/08	Fri 3/28/08	59			▭						
61	Draft EIR	35 days	Mon 3/31/08	Fri 5/16/08	60			▭						
62	Circulate Draft EIR for Public Review	45 days	Mon 5/19/08	Fri 7/18/08	61			▭						
63	<b>Coordinate Public Hearing</b>	161 days	Mon 3/31/08	Thu 11/13/08				—						
64	<b>Notice of Completion</b>	35 days	Mon 3/31/08	Fri 5/16/08				—						
65	Draft Notice of Completion	20 days	Mon 3/31/08	Fri 4/25/08	61SS			▭						
66	SAM Review	10 days	Mon 4/28/08	Fri 5/9/08	65			▭						
67	Final Notice of Completion	5 days	Mon 5/12/08	Fri 5/16/08	66			▭						
68	<b>Public Hearing</b>	41 days	Mon 3/31/08	Tue 5/27/08				—						
69	Draft Notice of Public Hearing	20 days	Mon 3/31/08	Fri 4/25/08	61SS			▭						

Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			

**Sewer Authority Mid-Coastside  
Wet Weather Flow Management Program  
Alternative 2: Parallel Force Main (Best Case Scenario)**

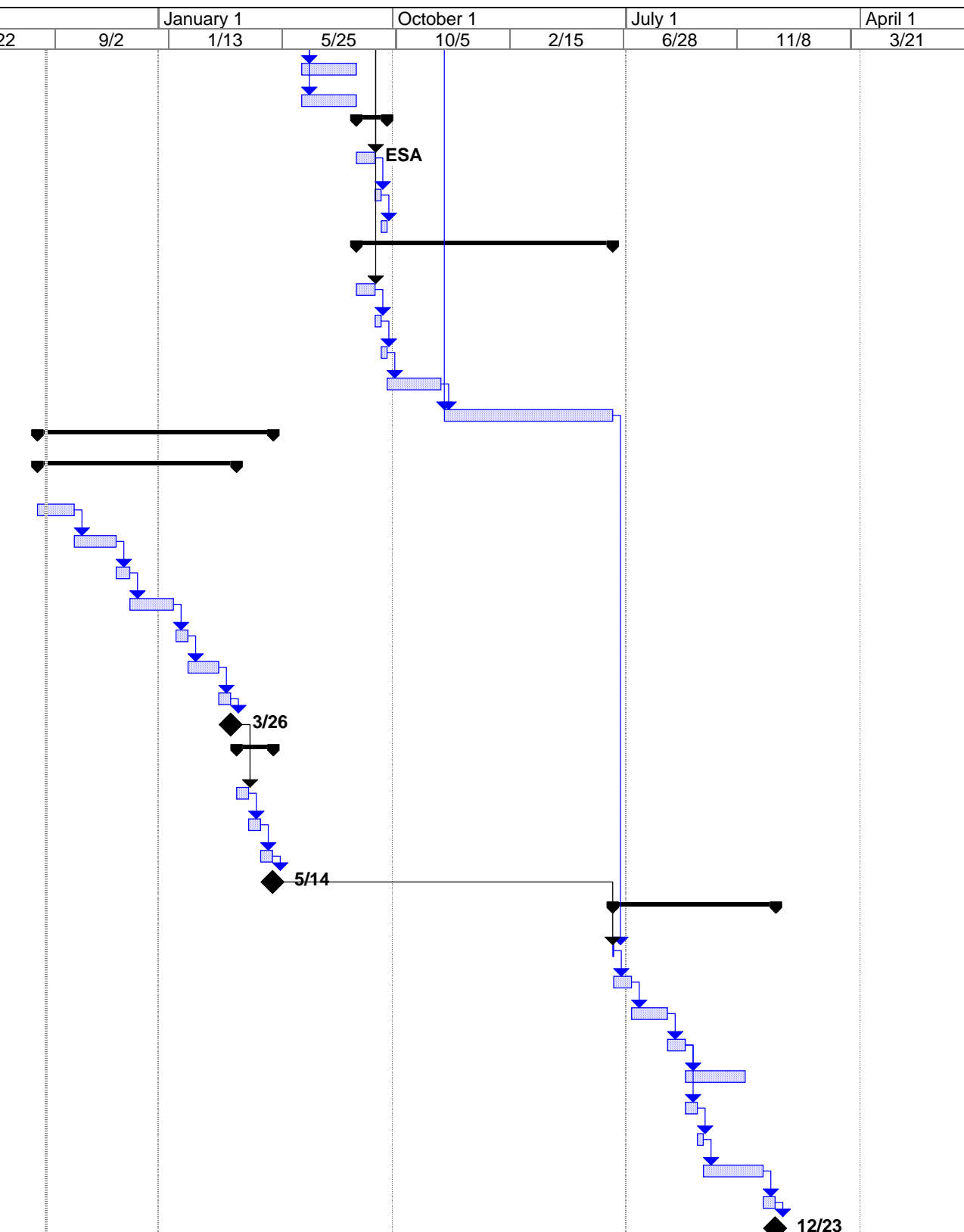
ID	Task Name	Duration	Start	Finish	Predecessors	April 1			January 1		October 1		July 1		April 1
						12/10	4/22	9/2	1/13	5/25	10/5	2/15	6/28	11/8	3/21
70	SAM Review	10 days	Mon 4/28/08	Fri 5/9/08	69										
71	Final Notice of Public Hearing	10 days	Mon 5/12/08	Fri 5/23/08	70										
72	Public Hearing	1 day	Tue 5/27/08	Tue 5/27/08	71										
73	<b>Response to Comments (Final EIR)</b>	<b>120 days</b>	<b>Wed 5/28/08</b>	<b>Thu 11/13/08</b>											
74	List of Written Comments	10 days	Wed 5/28/08	Tue 6/10/08	72										
75	Draft Response to Comments	40 days	Wed 6/11/08	Wed 8/6/08	74										
76	SAM Review	15 days	Thu 8/7/08	Wed 8/27/08	75										
77	Screen Check Response to Comments	15 days	Thu 8/28/08	Thu 9/18/08	76										
78	SAM Review	15 days	Fri 9/19/08	Thu 10/9/08	77										
79	Final Response to Comments (a.k.a. Final EIR)	15 days	Fri 10/10/08	Thu 10/30/08	78										
80	Distribute Final Response to Comments (a.k.a. Final EIR)	10 days	Fri 10/31/08	Thu 11/13/08	79										
81	<b>Certification of Final EIR</b>	<b>17 days</b>	<b>Fri 10/31/08</b>	<b>Mon 11/24/08</b>											
82	<b>Notice of Determination (NOD)</b>	<b>17 days</b>	<b>Fri 10/31/08</b>	<b>Mon 11/24/08</b>											
83	Draft NOD	10 days	Fri 10/31/08	Thu 11/13/08	80SS										
84	SAM Review	3 days	Fri 11/14/08	Tue 11/18/08	83										
85	Final NOD	3 days	Wed 11/19/08	Fri 11/21/08	84										
86	Certify EIR	1 day	Mon 11/24/08	Mon 11/24/08	85										
87	<b>CEQA Findings and Mitigation, Monitoring and Reporting Pla</b>	<b>101 days</b>	<b>Mon 8/4/08</b>	<b>Fri 12/26/08</b>											
88	<b>CEQA Findings</b>	<b>100 days</b>	<b>Mon 8/4/08</b>	<b>Wed 12/24/08</b>											
89	Admin Draft CEQA Findings	35 days	Mon 8/4/08	Mon 9/22/08											
90	SAM Review	15 days	Tue 9/23/08	Mon 10/13/08	89										
91	Draft CEQA Findings	20 days	Tue 10/14/08	Mon 11/10/08	90										
92	SAM Review	15 days	Tue 11/11/08	Wed 12/3/08	91										
93	Final CEQA Findings	15 days	Thu 12/4/08	Wed 12/24/08	92										
94	<b>MMRP</b>	<b>101 days</b>	<b>Mon 8/4/08</b>	<b>Fri 12/26/08</b>											
95	Admin Draft MMRP	35 days	Mon 8/4/08	Mon 9/22/08	89SS										
96	SAM Review	15 days	Tue 9/23/08	Mon 10/13/08	95										
97	Draft MMRP	20 days	Tue 10/14/08	Mon 11/10/08	96										
98	SAM Review	15 days	Tue 11/11/08	Wed 12/3/08	97										
99	Final MMRP	15 days	Thu 12/4/08	Wed 12/24/08	98										
100	Project Approval by SAM	1 day	Fri 12/26/08	Fri 12/26/08	99										
101	<b>Environmental Studies and Permitting</b>	<b>280 days</b>	<b>Mon 5/12/08</b>	<b>Mon 6/15/09</b>											
102	<b>Identify Required Environmental Studies</b>	<b>25 days</b>	<b>Mon 5/12/08</b>	<b>Mon 6/16/08</b>											
103	Draft Technical Memorandum on Required Environmenta	15 days	Mon 5/12/08	Mon 6/2/08											
104	SAM Review	5 days	Tue 6/3/08	Mon 6/9/08	103										
105	Final Technical Memorandum on Required Environmenta	5 days	Tue 6/10/08	Mon 6/16/08	104										
106	<b>Environmental Studies</b>	<b>45 days</b>	<b>Tue 6/17/08</b>	<b>Tue 8/19/08</b>											
107	Biological Resources Assessment	45 days	Tue 6/17/08	Tue 8/19/08	105										



Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			

**Sewer Authority Mid-Coastside  
Wet Weather Flow Management Program  
Alternative 2: Parallel Force Main (Best Case Scenario)**

ID	Task Name	Duration	Start	Finish	Predecessors	April 1		January 1		October 1		July 1		April 1
						12/10	4/22	9/2	1/13	5/25	10/5	2/15	6/28	11/8
108	Cultural Resources Assessment	45 days	Tue 6/17/08	Tue 8/19/08	105									
109	Geotechnical Investigation	45 days	Tue 6/17/08	Tue 8/19/08	105									
110	<b>Environmental Survey Reports</b>	<b>25 days</b>	<b>Wed 8/20/08</b>	<b>Wed 9/24/08</b>										
111	Draft Environmental Survey Reports	15 days	Wed 8/20/08	Wed 9/10/08	106									
112	SAM Review	5 days	Thu 9/11/08	Wed 9/17/08	111									
113	Final Environmental Survey Reports	5 days	Thu 9/18/08	Wed 9/24/08	112									
114	<b>Permit Acquisition</b>	<b>210 days</b>	<b>Wed 8/20/08</b>	<b>Mon 6/15/09</b>										
115	Draft Permit Acquisition Strategy Memorandum	15 days	Wed 8/20/08	Wed 9/10/08	106									
116	SAM Review	5 days	Thu 9/11/08	Wed 9/17/08	115									
117	Final Permit Acquisition Strategy Memorandum	5 days	Thu 9/18/08	Wed 9/24/08	116									
118	Permit Applications to Agencies	45 days	Thu 9/25/08	Wed 11/26/08	117									
119	Agency Review Process (California Coastal Commission	140 days	Mon 12/1/08	Mon 6/15/09	118,85									
120	<b>Project Design</b>	<b>191 days</b>	<b>Mon 8/13/07</b>	<b>Wed 5/14/08</b>										
121	<b>Force Main Design</b>	<b>160 days</b>	<b>Mon 8/13/07</b>	<b>Tue 4/1/08</b>										
122	Geotechnical Investigation and Surveying	30 days	Mon 8/13/07	Mon 9/24/07										
123	30-percent Submittal	35 days	Tue 9/25/07	Mon 11/12/07	122									
124	SAM Review	10 days	Tue 11/13/07	Wed 11/28/07	123									
125	90-percent Submittal	35 days	Thu 11/29/07	Fri 1/18/08	124									
126	SAM Review	10 days	Tue 1/22/08	Mon 2/4/08	125									
127	Final Submittal	25 days	Tue 2/5/08	Tue 3/11/08	126									
128	SAM Review	10 days	Wed 3/12/08	Tue 3/25/08	127									
129	SAM Board Approval	5 days	Wed 3/26/08	Tue 4/1/08	128									
130	<b>Bidding</b>	<b>31 days</b>	<b>Wed 4/2/08</b>	<b>Wed 5/14/08</b>										
131	Advertise for Bids	10 days	Wed 4/2/08	Tue 4/15/08	129									
132	Bid Opening and SAM Review	10 days	Wed 4/16/08	Tue 4/29/08	131									
133	SAM Board Approval	10 days	Wed 4/30/08	Tue 5/13/08	132									
134	Contract Award	1 day	Wed 5/14/08	Wed 5/14/08	133									
135	<b>Project Construction</b>	<b>137 days</b>	<b>Tue 6/16/09</b>	<b>Wed 12/23/09</b>										
136	Notice to Proceed to Contractor	1 day	Tue 6/16/09	Tue 6/16/09	134,119									
137	Site markup	15 days	Wed 6/17/09	Tue 7/7/09	136									
138	Excavation	30 days	Wed 7/8/09	Tue 8/18/09	137									
139	Pipelin Connection	15 days	Wed 8/19/09	Tue 9/8/09	138									
140	Construction	50 days	Wed 9/9/09	Tue 11/17/09	139									
141	Pipeline and Electricity Network	10 days	Wed 9/9/09	Tue 9/22/09	139									
142	SAM Inspection	5 days	Wed 9/23/09	Tue 9/29/09	141									
143	Construction Complete	50 days	Wed 9/30/09	Tue 12/8/09	142									
144	Final Inspection and Testing	10 days	Wed 12/9/09	Tue 12/22/09	143									
145	Begin Operation	1 day	Wed 12/23/09	Wed 12/23/09	144									



Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			

**Sewer Authority Mid-Coastside  
Wet Weather Flow Management Program  
Alternative 2: Parallel Force Main (Worst Case Scenario)**

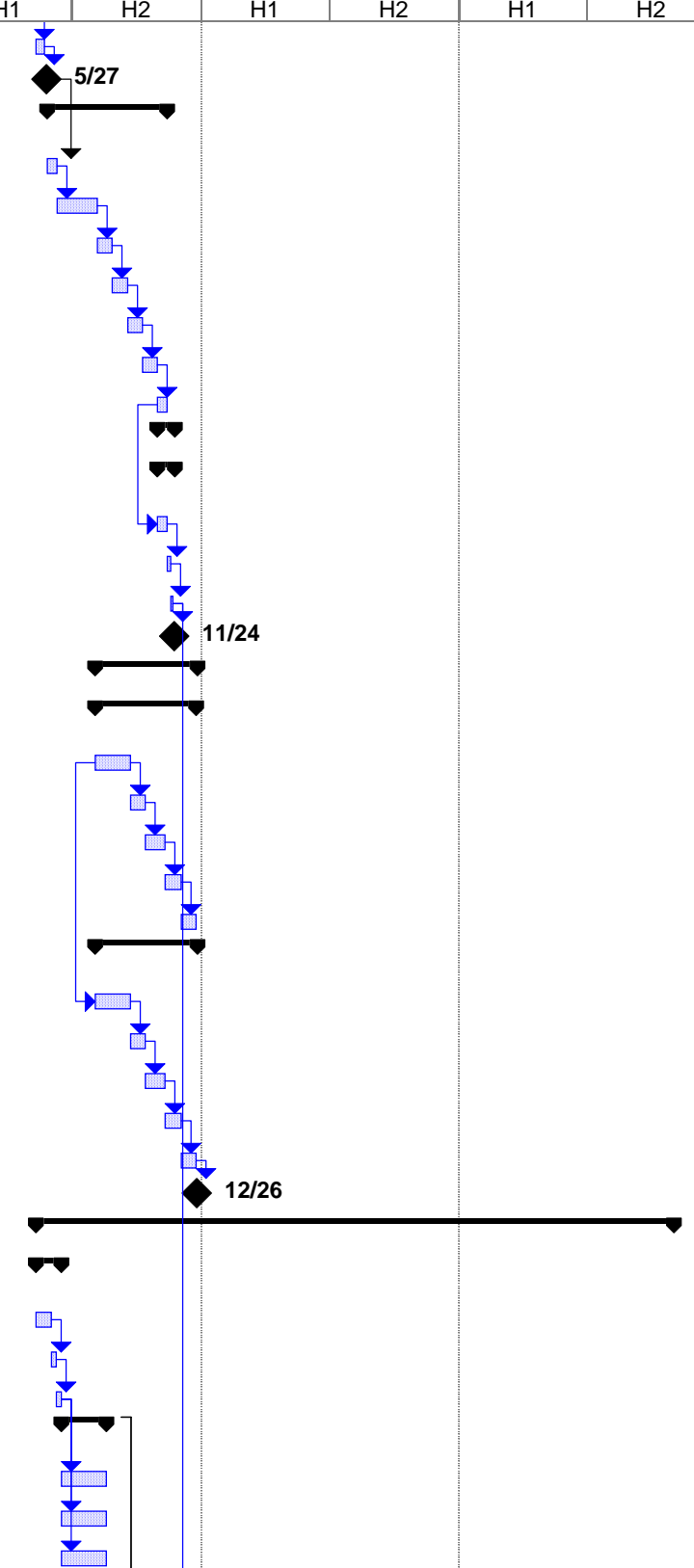
ID	Task Name	Duration	Start	Finish	Predecessors	2007		2008		2009		2010		2011	
						H2	H1	H2	H1	H2	H1	H2	H1	H2	
1	<b>Notice to Proceed</b>	1 day	Fri 6/1/07	Fri 6/1/07			6/1								
2	<b>Project Management and Coordination</b>	948 days	Wed 8/15/07	Wed 4/20/11											
3	<b>Kick-Off Meeting</b>	1 day	Mon 8/20/07	Mon 8/20/07			8/20								
4	<b>Project Work Plan and Schedule</b>	60 days	Tue 8/21/07	Mon 11/12/07											
8	<b>Project Meetings</b>	948 days	Wed 8/15/07	Wed 4/20/11											
54	<b>CEQA Compliance</b>	879 days	Fri 6/1/07	Mon 11/1/10											
55	<b>Project Description</b>	65 days	Fri 6/1/07	Thu 8/30/07											
56	Draft Project Description	30 days	Fri 6/1/07	Thu 7/12/07											
57	SAM Review	15 days	Fri 7/13/07	Thu 8/2/07	56										
58	Final Project Description	20 days	Fri 8/3/07	Thu 8/30/07	57			8/30							
59	<b>CEQA Scoping</b>	120 days	Mon 7/16/07	Fri 1/4/08											
60	<b>Notice of Preparation (NOP)</b>	79 days	Mon 7/16/07	Fri 11/2/07											
61	Draft NOP	25 days	Mon 7/16/07	Fri 8/17/07											
62	SAM Review	14 days	Mon 8/20/07	Fri 9/7/07	61										
63	Final NOP	10 days	Mon 9/10/07	Fri 9/21/07	62			9/21							
64	Circulate NOP	30 days	Mon 9/24/07	Fri 11/2/07	63										
65	<b>Scoping Meeting</b>	51 days	Mon 10/22/07	Fri 1/4/08											
66	EIR Scoping Meeting/Workshop	1 day	Mon 10/22/07	Mon 10/22/07				10/22							
67	Draft Scoping Summary Report	30 days	Tue 10/23/07	Wed 12/5/07	66										
68	SAM Review	10 days	Thu 12/6/07	Wed 12/19/07	67										
69	Final Scoping Summary Report	10 days	Thu 12/20/07	Fri 1/4/08	68										
70	<b>Draft Environmental Impact Report (Draft EIR)</b>	186 days	Tue 10/23/07	Fri 7/18/08											
71	Draft EIR Outline, Significant Criteria and Alternatives	10 days	Tue 10/23/07	Mon 11/5/07	66										
72	SAM Review	5 days	Tue 11/6/07	Mon 11/12/07	71										
73	Final EIR Outline, Significant Criteria and Alternatives	3 days	Tue 11/13/07	Thu 11/15/07	72										
74	Admin Draft EIR	35 days	Fri 11/16/07	Wed 1/9/08	73										
75	SAM Review	15 days	Thu 1/10/08	Thu 1/31/08	74										
76	Screen Check EIR	25 days	Fri 2/1/08	Fri 3/7/08	75										
77	SAM Review	15 days	Mon 3/10/08	Fri 3/28/08	76										
78	Draft EIR	35 days	Mon 3/31/08	Fri 5/16/08	77										
79	Circulate Draft EIR for Public Review	45 days	Mon 5/19/08	Fri 7/18/08	78										
80	<b>Coordinate Public Hearing</b>	161 days	Mon 3/31/08	Thu 11/13/08											
81	<b>Notice of Completion</b>	35 days	Mon 3/31/08	Fri 5/16/08											
82	Draft Notice of Completion	20 days	Mon 3/31/08	Fri 4/25/08	78SS										
83	SAM Review	10 days	Mon 4/28/08	Fri 5/9/08	82										
84	Final Notice of Completion	5 days	Mon 5/12/08	Fri 5/16/08	83										
85	<b>Public Hearing</b>	41 days	Mon 3/31/08	Tue 5/27/08											
86	Draft Notice of Public Hearing	20 days	Mon 3/31/08	Fri 4/25/08	78SS										
87	SAM Review	10 days	Mon 4/28/08	Fri 5/9/08	86										

Date: Wed 8/22/07  
Revision 03a  
Page 1 of 3

Task Progress Summary External Tasks Deadline   
 Split Milestone Project Summary External Milestone

**Sewer Authority Mid-Coastside  
Wet Weather Flow Management Program  
Alternative 2: Parallel Force Main (Worst Case Scenario)**

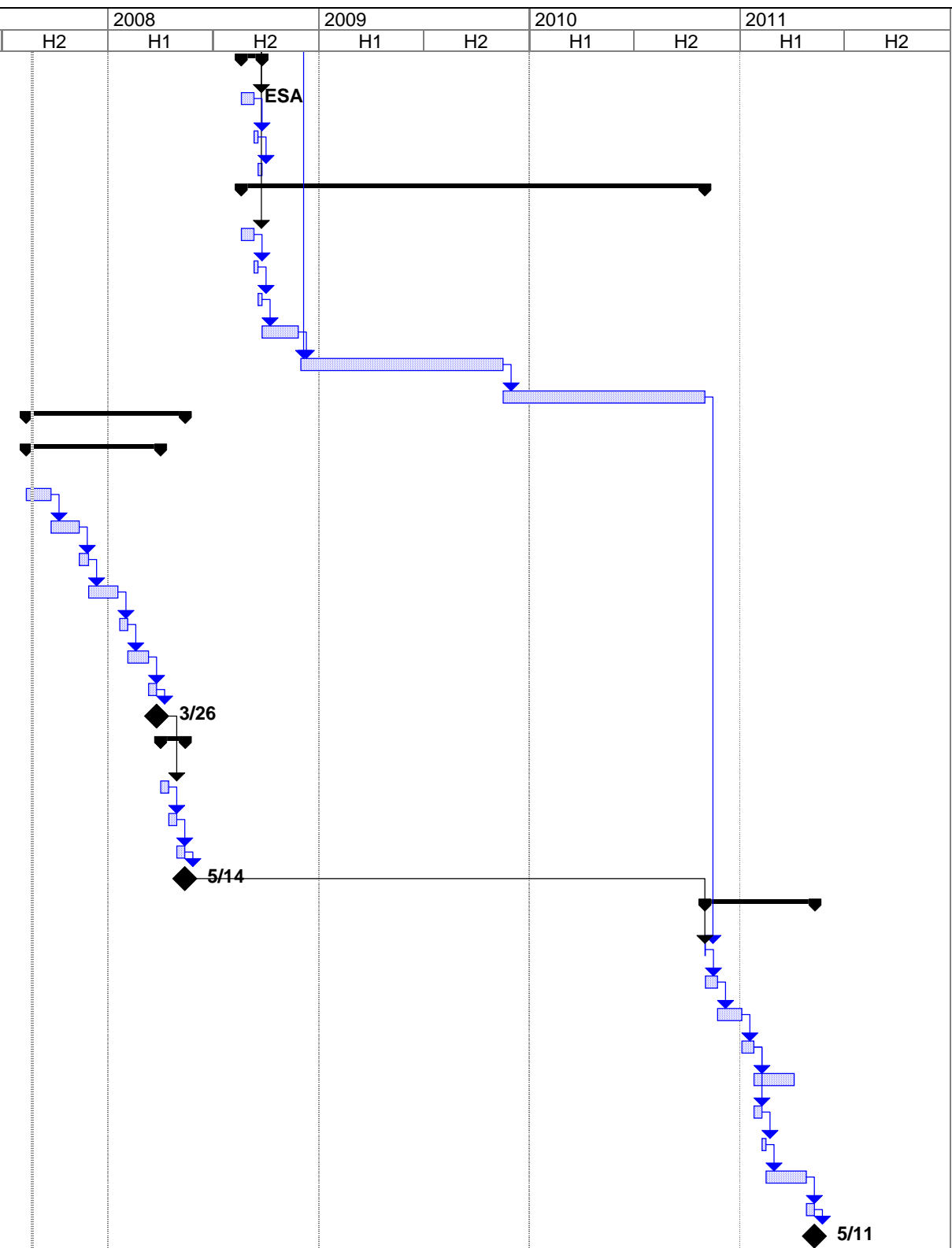
ID	Task Name	Duration	Start	Finish	Predecessors	2007		2008		2009		2010		2011	
						H2	H1	H2	H1	H2	H1	H2	H1	H2	
88	Final Notice of Public Hearing	10 days	Mon 5/12/08	Fri 5/23/08	87										
89	Public Hearing	1 day	Tue 5/27/08	Tue 5/27/08	88										
90	<b>Response to Comments (Final EIR)</b>	<b>120 days</b>	<b>Wed 5/28/08</b>	<b>Thu 11/13/08</b>											
91	List of Written Comments	10 days	Wed 5/28/08	Tue 6/10/08	89										
92	Draft Response to Comments	40 days	Wed 6/11/08	Wed 8/6/08	91										
93	SAM Review	15 days	Thu 8/7/08	Wed 8/27/08	92										
94	Screen Check Response to Comments	15 days	Thu 8/28/08	Thu 9/18/08	93										
95	SAM Review	15 days	Fri 9/19/08	Thu 10/9/08	94										
96	Final Response to Comments (a.k.a. Final EIR)	15 days	Fri 10/10/08	Thu 10/30/08	95										
97	Distribute Final Response to Comments (a.k.a. Final EIR)	10 days	Fri 10/31/08	Thu 11/13/08	96										
98	<b>Certification of Final EIR</b>	<b>17 days</b>	<b>Fri 10/31/08</b>	<b>Mon 11/24/08</b>											
99	<b>Notice of Determination (NOD)</b>	<b>17 days</b>	<b>Fri 10/31/08</b>	<b>Mon 11/24/08</b>											
100	Draft NOD	10 days	Fri 10/31/08	Thu 11/13/08	97SS										
101	SAM Review	3 days	Fri 11/14/08	Tue 11/18/08	100										
102	Final NOD	3 days	Wed 11/19/08	Fri 11/21/08	101										
103	Certify EIR	1 day	Mon 11/24/08	Mon 11/24/08	102										
104	<b>CEQA Findings and Mitigation, Monitoring and Reporting Plan (MMRP)</b>	<b>101 days</b>	<b>Mon 8/4/08</b>	<b>Fri 12/26/08</b>											
105	<b>CEQA Findings</b>	<b>100 days</b>	<b>Mon 8/4/08</b>	<b>Wed 12/24/08</b>											
106	Admin Draft CEQA Findings	35 days	Mon 8/4/08	Mon 9/22/08											
107	SAM Review	15 days	Tue 9/23/08	Mon 10/13/08	106										
108	Draft CEQA Findings	20 days	Tue 10/14/08	Mon 11/10/08	107										
109	SAM Review	15 days	Tue 11/11/08	Wed 12/3/08	108										
110	Final CEQA Findings	15 days	Thu 12/4/08	Wed 12/24/08	109										
111	<b>MMRP</b>	<b>101 days</b>	<b>Mon 8/4/08</b>	<b>Fri 12/26/08</b>											
112	Admin Draft MMRP	35 days	Mon 8/4/08	Mon 9/22/08	106SS										
113	SAM Review	15 days	Tue 9/23/08	Mon 10/13/08	112										
114	Draft MMRP	20 days	Tue 10/14/08	Mon 11/10/08	113										
115	SAM Review	15 days	Tue 11/11/08	Wed 12/3/08	114										
116	Final MMRP	15 days	Thu 12/4/08	Wed 12/24/08	115										
117	Project Approval by SAM	1 day	Fri 12/26/08	Fri 12/26/08	116										
118	<b>Environmental Studies and Permitting</b>	<b>640 days</b>	<b>Mon 5/12/08</b>	<b>Mon 11/1/10</b>											
119	<b>Identify Required Environmental Studies</b>	<b>25 days</b>	<b>Mon 5/12/08</b>	<b>Mon 6/16/08</b>											
120	Draft Technical Memorandum on Required Environmental Studies	15 days	Mon 5/12/08	Mon 6/2/08											
121	SAM Review	5 days	Tue 6/3/08	Mon 6/9/08	120										
122	Final Technical Memorandum on Required Environmental Studies	5 days	Tue 6/10/08	Mon 6/16/08	121										
123	<b>Environmental Studies</b>	<b>45 days</b>	<b>Tue 6/17/08</b>	<b>Tue 8/19/08</b>											
124	Biological Resources Assessment	45 days	Tue 6/17/08	Tue 8/19/08	122										
125	Cultural Resources Assessment	45 days	Tue 6/17/08	Tue 8/19/08	122										
126	Geotechnical Investigation	45 days	Tue 6/17/08	Tue 8/19/08	122										



Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			

**Sewer Authority Mid-Coastside  
Wet Weather Flow Management Program  
Alternative 2: Parallel Force Main (Worst Case Scenario)**

ID	Task Name	Duration	Start	Finish	Predecessors	2007		2008		2009		2010		2011	
						H2	H1	H2	H1	H2	H1	H2	H1	H2	
127	<b>Environmental Survey Reports</b>	<b>25 days</b>	<b>Wed 8/20/08</b>	<b>Wed 9/24/08</b>											
128	Draft Environmental Survey Reports	15 days	Wed 8/20/08	Wed 9/10/08	123										
129	SAM Review	5 days	Thu 9/11/08	Wed 9/17/08	128										
130	Final Environmental Survey Reports	5 days	Thu 9/18/08	Wed 9/24/08	129										
131	<b>Permit Acquisition</b>	<b>570 days</b>	<b>Wed 8/20/08</b>	<b>Mon 11/1/10</b>											
132	Draft Permit Acquisition Strategy Memorandum	15 days	Wed 8/20/08	Wed 9/10/08	123										
133	SAM Review	5 days	Thu 9/11/08	Wed 9/17/08	132										
134	Final Permit Acquisition Strategy Memorandum	5 days	Thu 9/18/08	Wed 9/24/08	133										
135	Permit Applications to Agencies	45 days	Thu 9/25/08	Wed 11/26/08	134										
136	Agency Review Process (California Coastal Commission)	250 days	Mon 12/1/08	Mon 11/16/09	135,102										
137	Appeal	250 days	Tue 11/17/09	Mon 11/1/10	136										
138	<b>Project Design</b>	<b>191 days</b>	<b>Mon 8/13/07</b>	<b>Wed 5/14/08</b>											
139	<b>Force Main Design</b>	<b>160 days</b>	<b>Mon 8/13/07</b>	<b>Tue 4/1/08</b>											
140	Geotechnical Investigation and Surveying	30 days	Mon 8/13/07	Mon 9/24/07											
141	30-percent Submittal	35 days	Tue 9/25/07	Mon 11/12/07	140										
142	SAM Review	10 days	Tue 11/13/07	Wed 11/28/07	141										
143	90-percent Submittal	35 days	Thu 11/29/07	Fri 1/18/08	142										
144	SAM Review	10 days	Tue 1/22/08	Mon 2/4/08	143										
145	Final Submittal	25 days	Tue 2/5/08	Tue 3/11/08	144										
146	SAM Review	10 days	Wed 3/12/08	Tue 3/25/08	145										
147	SAM Board Approval	5 days	Wed 3/26/08	Tue 4/1/08	146										
148	<b>Bidding</b>	<b>31 days</b>	<b>Wed 4/2/08</b>	<b>Wed 5/14/08</b>											
149	Advertise for Bids	10 days	Wed 4/2/08	Tue 4/15/08	147										
150	Bid Opening and SAM Review	10 days	Wed 4/16/08	Tue 4/29/08	149										
151	SAM Board Approval	10 days	Wed 4/30/08	Tue 5/13/08	150										
152	Contract Award	1 day	Wed 5/14/08	Wed 5/14/08	151										
153	<b>Project Construction</b>	<b>137 days?</b>	<b>Tue 11/2/10</b>	<b>Wed 5/11/11</b>											
154	Notice to Proceed to Contractor	1 day	Tue 11/2/10	Tue 11/2/10	152,137										
155	Site markup	15 days	Wed 11/3/10	Tue 11/23/10	154										
156	Excavation	30 days	Wed 11/24/10	Tue 1/4/11	155										
157	Pipelin Connection	15 days	Wed 1/5/11	Tue 1/25/11	156										
158	Construction	50 days	Wed 1/26/11	Tue 4/5/11	157										
159	Pipeline and Electricity Network	10 days	Wed 1/26/11	Tue 2/8/11	157										
160	SAM Inspection	5 days	Wed 2/9/11	Tue 2/15/11	159										
161	Construction Complete	50 days	Wed 2/16/11	Tue 4/26/11	160										
162	Final Inspection and Testing	10 days	Wed 4/27/11	Tue 5/10/11	161										
163	Begin Operation	1 day?	Wed 5/11/11	Wed 5/11/11	162										



Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			