

**Wet Weather Flow Management Program  
Risk Analysis of DRAFT Alternatives**

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” position unknown</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>

## 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 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 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 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	\$141,514/year	\$299,384/year
Per Capita Estimated Total Annualized Costs		
\$9/capita/year	\$6/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</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>• \$6.9M 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>• NO existing Force Main emergency repair included</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>

Sewer Authority Mid-Coastside

# Wet Weather Flow Management Project Risk Analysis

# Problem Statement



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



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

# Risk Analysis Discussion



Goals



Draft Project Alternatives



Approach



Implementation



Summary of Results



Comparison Matrices

# Risk Analysis Goals

 Determine risks for each of the Draft Project Alternatives relative to:

*五* Permitting

*五* Public Perception

*五* EPA Findings

*五* Schedule and Cost Impacts

 Develop a comprehensive matrix of Draft Alternatives

# Draft Project Alternatives



## Storage Tank:

± 600,000-gallon underground storage tank; 120 x 70 feet, 12.5 feet deep







## New Force Main:

± 14-inch-diameter; 8,850 feet in length, parallel to the existing 24-year old pipeline



## No Project

# Approach

-  Review existing information
-  Interview representatives of various entities on the Coast
-  Contact resource and permitting agencies
-  Develop comprehensive present worth cost analysis

# Implementation



Solicited input from representatives of the following entities:

- 五 City of Half Moon Bay
- 五 Resource Conservation District
- 五 Mid-Coast Community Council
- 五 Coastside County Water District

# Implementation (cont.)



Contacted resource and permitting agencies:

☞ CA Coastal Commission

☞ Caltrans

☞ US Army Corp of Engineers

☞ SF Bay RWQCB

☞ CA Department of Fish and Game

# Analysis Matrices



Risk Analysis of Draft Alternatives

(one page)



Risk-Benefit Analysis of Draft Alternatives

(three pages)

# Summary of Results






The No-Project Alternative carries the highest risk and estimated cost



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

# Annualized Cost Summary

	No Project:	\$299,384/year	\$12/capita
	Storage Tank:	\$213,670/year	\$9/capita
	Force Main:	\$141,514/year	\$6/capita