

CSA 10A – Cayucos Water System Improvement Recommendations

Date:

June 1, 2011

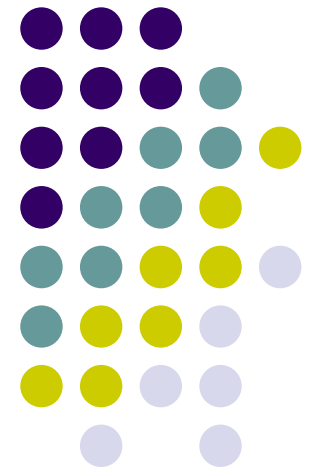
Presented to:

Cayucos Citizens Advisory Committee

Presented by:

Tom Trott, P.E.

Doug Bird

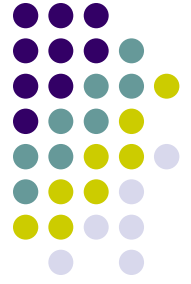




Presentation Purpose

- Present Results of CSA 10A System Analysis:
 - Flow Testing
 - Hydraulic Modeling
 - Collaboration with Fire Department
- Make Recommendations
 - Water System Improvements
 - Financing
 - Will-Serves
- Obtain Advisory Committee Input
 - Comments Today
 - Return in August for Endorsement

Presentation Overview



- Summarize Water System Needs and Deficiencies
- Recommend Water System Improvements
- Propose Improvement Implementation Approach
- Discuss Will-Serve Status
- Questions/Comments

Water System Needs

Background

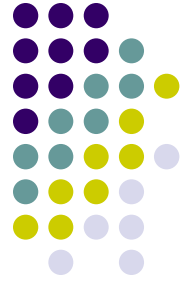


Two Categories of System Needs:

- Normal Operations & Maintenance (O&M)
 - Existing deteriorated and substandard waterlines
 - Existing deteriorated storage facilities
- Code and Standards Requirements
 - California Fire Code (CFC) Requirements
 - American Water Works Association (AWWA) Standards

Water System Needs

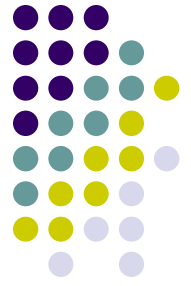
Operation & Maintenance



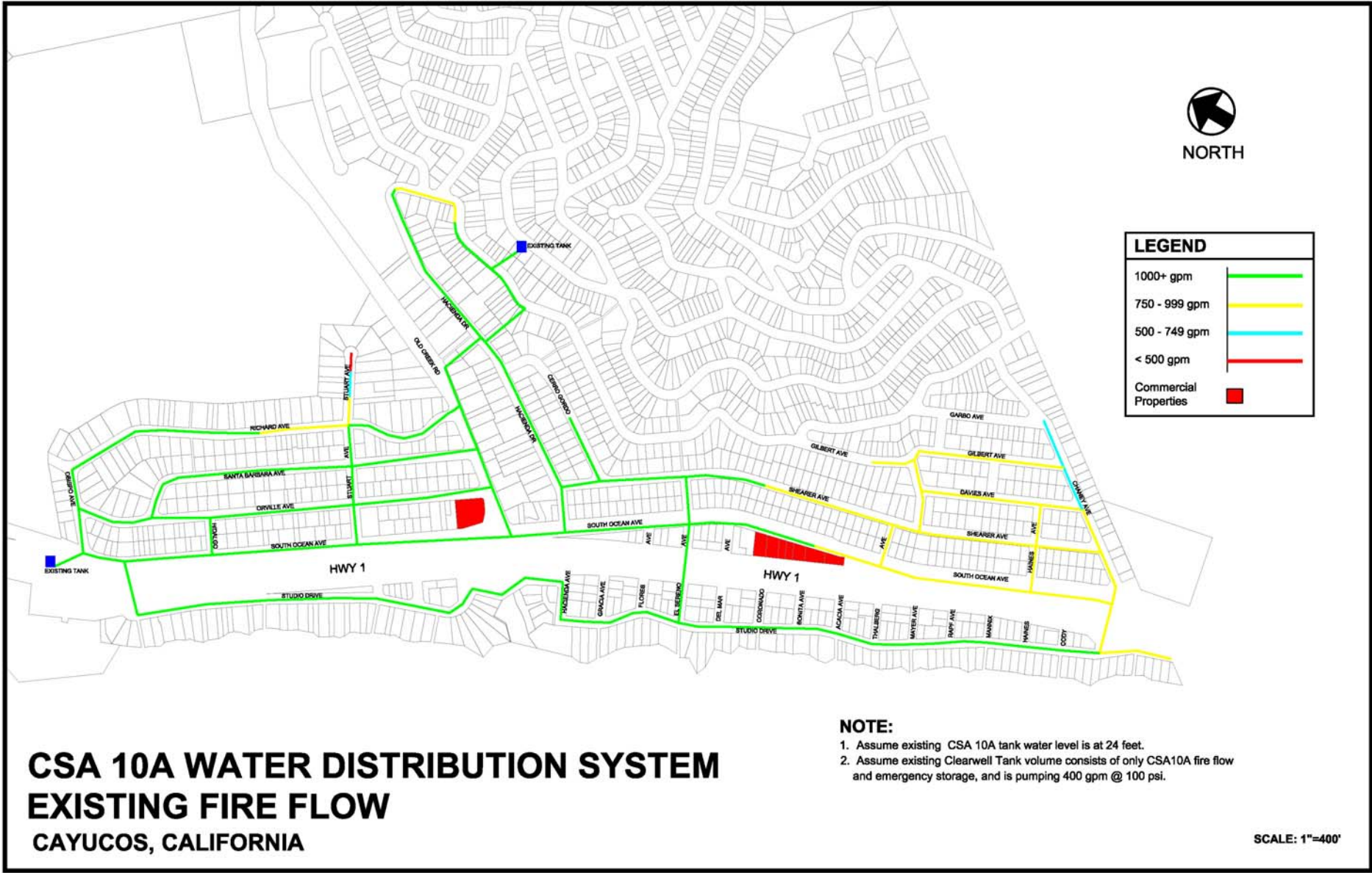
- Replace Deteriorated and Substandard Waterlines
 - Shearer Avenue waterline is deteriorated
 - Richard and Stuart Street waterlines are substandard size (4")
- Replace Substandard Wharfheads with Fire Hydrants
 - Wharfheads do not provide adequate fire flow (4" line, 2.5" port)
- Rehabilitate Existing Deteriorated Storage Tank
 - Roof needs replacement
 - Interior needs to be recoated

Water System Needs

Codes & Standards Flow Requirements



- California Fire Code Flow Requirements:
 - Residential Minimum Flows: 1,000 gpm at 20 psi
 - Commercial Minimum Flows: 2,000 gpm at 20 psi
- Commercial Requirements Not Considered
 - 8 commercial parcels (7 are residential/commercial)
 - Significant improvements required to meet requirements
- System Flow Deficiencies:
 - System cannot produce residential minimum flows in all areas
 - System cannot produce commercial minimum flows



LEGEND	
1000+ gpm	
750 - 999 gpm	
500 - 749 gpm	
< 500 gpm	
Commercial Properties	

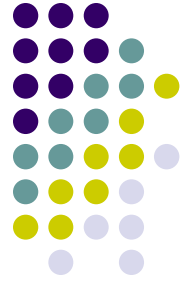
**CSA 10A WATER DISTRIBUTION SYSTEM
EXISTING FIRE FLOW
CAYUCOS, CALIFORNIA**

- NOTE:**
1. Assume existing CSA 10A tank water level is at 24 feet.
 2. Assume existing Clearwell Tank volume consists of only CSA10A fire flow and emergency storage, and is pumping 400 gpm @ 100 psi.

SCALE: 1"=400'

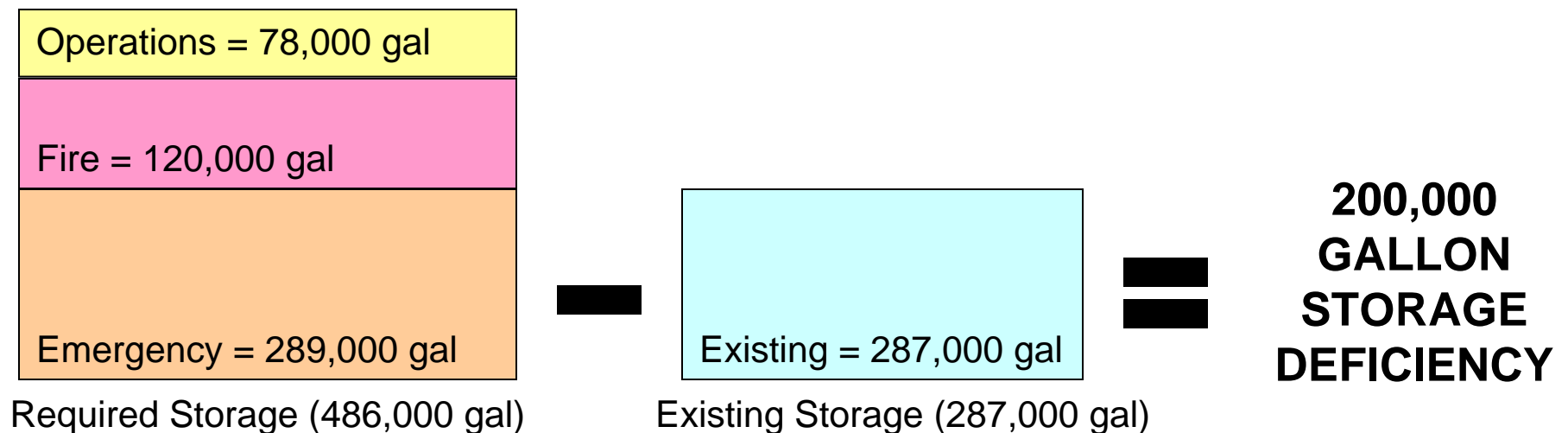
Water System Needs

Codes & Standards Storage Requirements



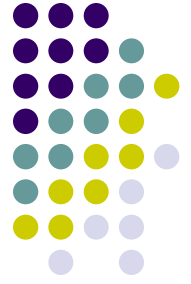
AWWA Standards Require Three Storage Components:

- **Emergency** – 3 days normal use
- **Fire** – CFC Requires 2 hours continuous flow
 - 120,000 gal (residential)
 - 240,000 gal (commercial)
- **Equalization (Operations)** – Normal daily use



Water System Needs

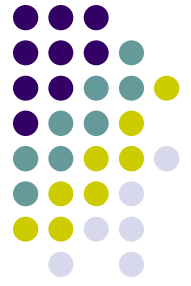
Summary



- Water System has Deteriorated and/or Substandard Waterlines and Tank
- Water System Does Not Meet CFC Flow Requirements
- Water System Does Not Meet AWWA and CFC Combined Storage Requirements

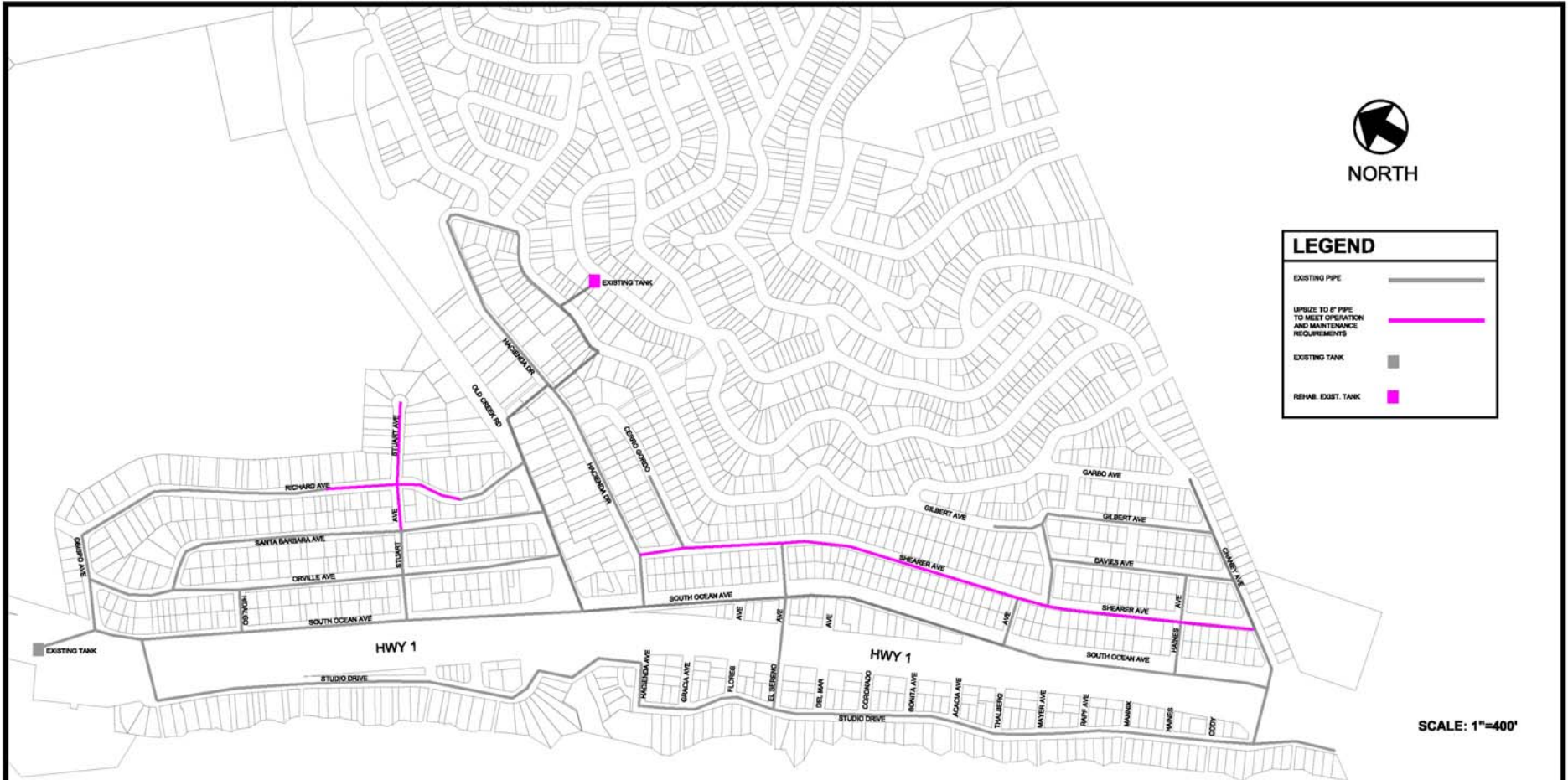
Improvement Recommendations

Operations & Maintenance



GOAL: Address Deteriorated and Substandard Waterlines and Facilities

- Replace/Upsize Deteriorated and Substandard Waterlines and Wharfheads
 - Shearer Avenue, Richard Street and Stuart Street
 - Improvements Will Provide Minimum Fire Flows to Most of System
- Rehabilitate Existing Water Tank
 - Replace Roof
 - Recoat Interior and Exterior

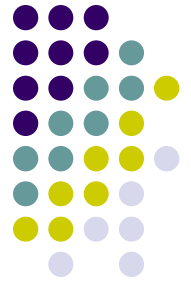


**CSA 10A WATER DISTRIBUTION SYSTEM
 WATERLINE UPGRADES, FOR OPERATION
 AND MAINTENANCE
 CAYUCOS, CALIFORNIA**

NOTE:
 WATERLINE UPGRADES SHOWN ARE NECESSARY TO UPGRADE FOR
 OPERATIONAL AND MAINTENANCE REASONS.

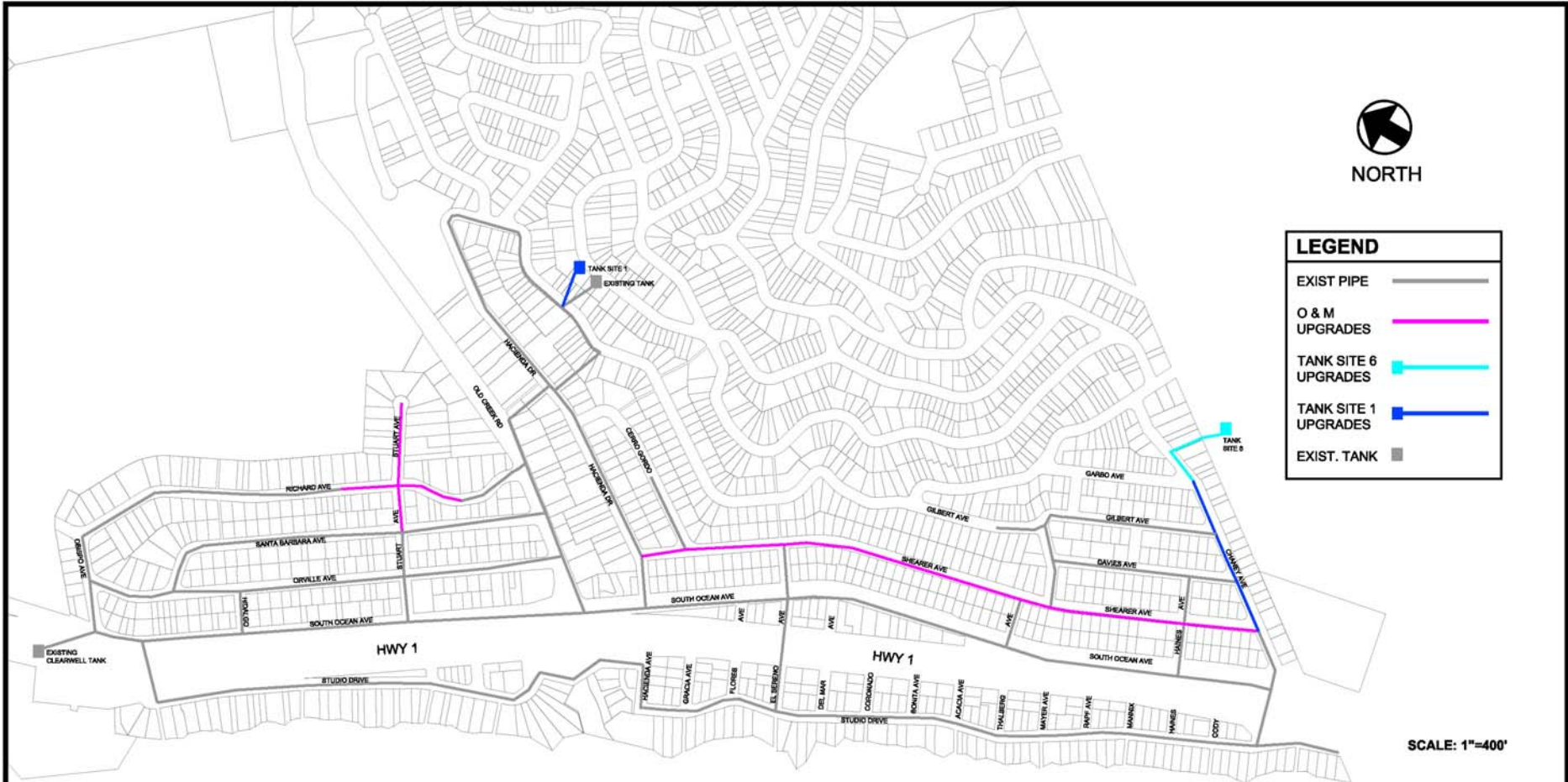
Improvement Recommendations

Codes and Standards



GOAL: Address Storage Deficiencies

- Construct a New 200,000 Gallon Storage Tank
- Addresses Combined CFC Residential Fire Storage, AWWA Emergency Storage and Operations Storage
- Two Potential Tank Sites
 - Tank Site 1: Adjacent to existing tank
 - Tank Site 6: South end of CSA 10A



**CSA 10A WATER DISTRIBUTION SYSTEM
TANK SITES 1 AND 6 UPGRADES,
RESIDENTIAL ONLY
CAYUCOS, CALIFORNIA**

- NOTE:**
1. TANK UPGRADES SHOWN HEREON ARE NECESSARY TO MEET MINIMUM RESIDENTIAL FIRE FLOW STANDARDS OF 1,000 GPM AT A MINIMUM 20 PSI PRESSURE.
 2. ASSUME EXISTING CSA 10A TANK AND NEW TANKS CONSIST OF ONLY FIRE FLOW AND EMERGENCY STORAGE.
 3. ASSUME EXISTING CLEARWELL TANK VOLUME, CONSISTS OF ONLY CSA10A FIRE FLOW AND EMERGENCY STORAGE AND IS PUMPING 400 gpm @ 100 psi.

Improvement Recommendations

Estimated Project Costs



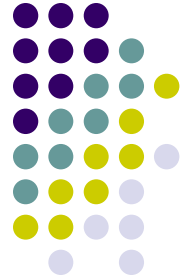
Project Components	O&M Upgrades		Codes & Standards Upgrades	Codes & Standards Upgrades
	Waterlines	Tank Rehab ⁴	New Tank (Site 1) - Residential Only	New Tank (Site 6) - Residential Only
Construction Costs				
Improvements	\$ 401,000	\$ 240,000	\$ 326,000	\$ 290,000
Mobilization	\$ 15,000	\$ 15,000	\$ 30,000	\$ 30,000
Contingency - 20%	\$ 84,000	\$ 51,000	\$ 72,000	\$ 64,000
Total Construction Costs	\$ 500,000	\$ 306,000	\$ 428,000	\$ 384,000
Other Project Costs¹				
Prelim. Engineering ²	\$ 242,000	\$ 20,000	\$ 50,000	\$ 50,000
Environmental	\$ 5,000	\$ 10,000	\$ 81,000	\$ 101,000
Right of Way ³	\$ -	\$ 20,000	\$ 300,000	\$ 422,000
Design	\$ 132,000	\$ 70,000	\$ 155,000	\$ 141,000
Construction Management	\$ 143,000	\$ 98,000	\$ 135,000	\$ 126,000
Total Other Costs	\$ 522,000	\$ 218,000	\$ 721,000	\$ 840,000
Total Project Costs	\$ 1,022,000	\$ 524,000	\$ 1,149,000	\$ 1,224,000
Recommended Total	\$1,546,000		\$ 1,149,000	\$ 1,224,000

Notes:

- 1) Other Project Cost components include costs for project management, survey, utility coordination and bid advertisement.
- 2) Preliminary engineering costs for O&M upgrades include costs spent to date.
- 3) Site 1 ROW cost includes purchase of 13 unbuildable properties. Site 6 ROW cost includes purchase of 3 buildable properties and easement on Chevron property.
- 4) Cost includes \$90,000 for temporary tanks and associated grading. If new tank is constructed, temporary tanks are not needed and Project cost would be reduced by this amount.

Proposed Project Approach

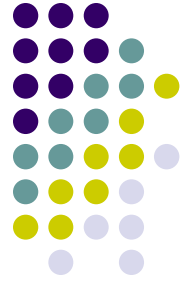
Projects and Timing



- Construct Improvements as Three Separate Projects:
 - Waterline Replacement/Upsize (O&M)
 - Anticipated Start: January 2013
 - Anticipated Finish: June 2013
 - Construct New 200,000 gallon Tank (Codes & Standards)
 - Anticipated Start: January 2014
 - Anticipated Finish: July 2014
 - Rehabilitate Existing Tank (O&M)
 - Anticipated Start: July 2014
 - Anticipated Finish: November 2014

Proposed Project Approach

Project Financing Options

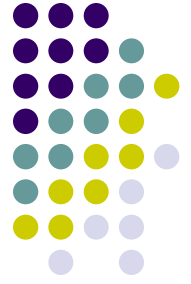


OPTION 1: Rate Increase + Assessment District

- O&M Improvements – Rates and Charges
 - Includes Waterline Improvements & Existing Tank Rehab
 - Total Estimated Project Costs = \$1,546,000
 - Approximate Rate Increase
 - \$ 7.96 per month (40-yr USDA Loan @ 3.5%)
 - \$11.09 per month (20-yr SRF Loan @ 2.6%)
- Codes & Regulations Improvements – Assessment District
 - Includes New Storage Tank at Tank Site 6
 - Total Estimated Project Costs = \$1,224,000
 - Assessment Cost
 - Depends on type of property and final tank site selection
 - Includes costs for assessment district formation, bond counsel, vote, etc.

Proposed Project Approach

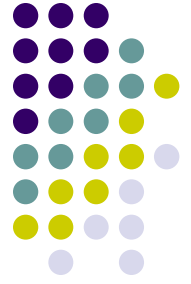
Project Financing Options



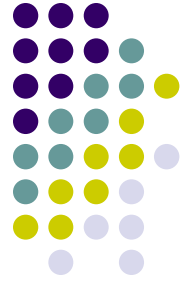
OPTION 2: Rate Increase Only

- O&M and Codes & Standards Improvements – Rate Increase
 - Includes Waterline Improvements, Existing Tank Rehab, New Storage Tank at Site 6
 - Total Estimated Project Costs = \$2,770,000
 - Approximate Rate Increase
 - \$13.80 per month (40-yr USDA Loan @ 3.5%)
 - \$19.22 per month (20-yr SRF Loan @ 2.6%)

Will-Serve Issuance Status



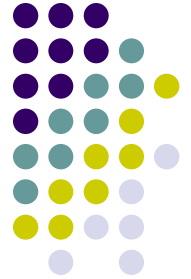
- Board implemented moratorium on will-serves in 1993 due to water supply shortage
- Current Concerns:
 - Water System now has sufficient source water supply (Public Works Authority)
 - Water System does not meet CFC flow and storage requirements in some areas (Fire Department Authority)
- Public Works plans to recommend that Board of Supervisors lift moratorium due to adequate water supply



Presentation Summary

- Water System is deteriorated and substandard and does not meet codes and standards
- Recommend Three Separate Improvement Projects:
 - Waterlines Improvements (O&M)
 - Existing Tank Rehabilitation (O&M)
 - New 200,000 Gallon Storage Tank (Codes & Standards)
- Suggest Two Project Financing Options for Improvements
 - Rate Increase (O&M) + Assessment District (Codes & Standards)
 - Rate Increase (O&M + Codes & Standards)
- Public Works to Recommend Lifting of Will-Serve Moratorium

QUESTIONS / COMMENTS?



- We will take Committee comments into consideration and will return in August to obtain Committee endorsement.

Improvement Recommendations

Residential vs. Commercial Costs



Project Components	O&M Upgrades		Tank Site 1 Upgrades		Tank Site 6 Upgrades	
	Waterlines	Exist. Tank Rehab ⁴	Residential	Commercial	Residential	Commercial
Construction Costs						
Improvements	\$ 401,000	\$ 240,000	\$ 326,000	\$ 835,000	\$ 290,000	\$ 530,000
Mobilization	\$ 15,000	\$ 15,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000
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Total Other Costs	\$ 522,000	\$ 218,000	\$ 721,000	\$ 851,000	\$ 840,000	\$ 877,000
Total Project Costs	\$ 1,022,000	\$ 524,000				
Recommended Total	\$1,546,000		\$ 1,149,000	\$ 1,889,000	\$ 1,224,000	\$ 1,549,000

Notes:

- 1) Other Project Cost components include costs for project management, survey, utility coordination and bid advertisement.
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