Potable Water Reservoir Feasibility Study

February 2014
Methodical Approach

Assess Capacity Needs → Balancing Operational Objectives → Reservoir Sizing/Optimization → Public Integration → Site Selection

Recommended Alternative
Balancing Operational Needs

- Water Quality and Costs
- Flexibility and Reliability
Storage Capacity Recommendations

17 MG Recommended Capacity = 7.5 MG Additional Storage
Potential Locations
# Summary of Findings

<table>
<thead>
<tr>
<th>Site Number</th>
<th>Site Description</th>
<th>Ground Elevation (ft)</th>
<th>HWL (ft)</th>
<th>Depth of Excavation (ft)</th>
<th>Storage Capacity (MG)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Abandoned School (Imperial)</td>
<td>137</td>
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<td>2</td>
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<td>Recreation Park Complex</td>
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<td>Water Yard</td>
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</table>
Alternative #1: Recreation Park Complex

- Ample land availability
- Meets storage needs
- Park user impacts (one field taken out of service)
- Anticipated costs: $21.9 million ($2.95/gallon)
Alternative #2: Water Yard

- Restrictive space
- Limited storage capacity (4.4 MG)
- Existing park user impacts
- Vulnerability risk (all water facilities in single location)
- Anticipated costs: $16.65 million ($3.80/gallon)
Alternative #3: The Lakes Golf Course

- Ample land availability
- Meets storage needs
- Golf Course user impacts
- Local conversion of recycled water to potable water
- Water facilities in multiple locations (vulnerability risk)
- Anticipated costs: $20.5 million ($2.65/gallon)
Questions and Answers
How Much Storage Do You Actually Need?

- Daily Demand
- Diurnal Fluctuation
- Pressure Zones
- Operational Needs
- Emergency Needs
- Fire Suppression
Site Selection:

- High Zone/Low Zone (Hydraulics)
- Proximity to MWD Interconnections
- Newport/Inglewood Fault
- City-owned Property
- Soils Contamination
- Impact on Reservoir Sizing
Storage Capacity Recommendations

► 2005 Water Master Plan Recommendations

■ High level assessment
■ Very large amount of storage recommended

► Refinement of WMP storage numbers

■ Overriding Issue: Risk associated with imported water
■ Assume aggressive control of water demands
■ Assume 3 days of storage
■ Accounts for negative impacts of too much storage
■ 17 MG recommended - requires 7.5 MG new storage
Potential Sites - Parks

► Advantages
  ■ Sizing
  ■ Site Availability
  ■ Site Improvements for Users

► Disadvantages
  ■ Impact to Public Users
  ■ Operational/Maintenance Accessibility
Potential Sites - Schools

► Advantages

■ Sizing
■ Site Improvements for Users
■ Availability

► Disadvantages

■ State Involvement (DSA)
■ Public Opposition
■ Impact to School Uses
■ Operational/Maintenance Accessibility
Potential Sites – Municipal Facility

**Advantages**
- Land Ownership
- Operational/Maintenance Accessibility
- Minimal Public Impacts

**Disadvantages**
- Facility Sizing
- Land Availability
Reservoir Type Selection

► Steel
  ■ Circular
    • Ground supported flat bottom
    • Elevated

► Concrete
  ■ Circular
    • Prestressed wall shell/flat bottom floor/concrete roof
    • Conventionally reinforced wall shell/flat or hopper bottom floor/concrete or framed roof
  ■ Non-Circular (Rectangular/Square/Irregular)
    • Prestressed walls- flat bottom/concrete roof
    • Conventionally reinforced walls- flat bottom/concrete roof
    • Conventionally reinforced walls- Hopper bottom/concrete or framed roof
Reservoir Sizing

Reliability Needs

Site Constraints