Climate Resilient Water Resources Planning

A Local Perspective

Sarah Young, CFM, Senior Project Manager
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Outline

- About the Water District
- Local context
- Climate change by simplistic number
- District policies/framework/approach
- Plans for the future
- Personal perspectives for integrating climate science
Our core services

SAFE, RELIABLE WATER
FLOOD PROTECTION
HEALTHY CREEKS & ECOSYSTEMS

An urban waterscape in a semi-arid region

Local context

800 square miles of watershed lands
240 miles of creeks & rivers managed
5 major watershed areas
15 municipalities
16 Water retailers
~2 million Population
7% land areas is flood prone

Local Context: http://www.water.ca.gov/sfmp/

15 billion exposed structure and contents
134 miles of Transportation Facilities
133K Population Exposed

One in three Residents Exposed to Flooding

Local context: http://www.water.ca.gov/sfmp/
Limited jurisdiction for flood protection

Local context

Flood Protection

Floodwater Management
Keeping the water away from the people

Federal
Corps of Engineers

Local
Water District

Floodplain Management
Keeping the people away from the water

Federal
FEMA

Local
Municipalities

Precipitation Varies & Temperature Increases

Climate change in real terms (http://pubs.usgs.gov/sir/2012/5322/)

Graph showing precipitation and temperature trends over time.
SLR increases land vulnerable to flood

Climate change in real terms: http://tidesandcurrents.noaa.gov/trends/index.shtml

<table>
<thead>
<tr>
<th>Bay Area</th>
<th>Estimated Acreage in 2000</th>
<th>Estimated Acreage in 2100</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bay Area</td>
<td>9,650</td>
<td>14,200</td>
<td>+32%</td>
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Assets affected with a 55-inch SLR Scenario

Based on overlays from: www.cal-adapt.org
4.3.1. Reduce greenhouse gas emissions to achieve carbon neutrality by 2020.

EL6.4. Apply current understanding of climate change into District planning efforts.


Subject to refinements
Approach to Date (Since 2008)

Subject to refinements

**Continue**
- Water contracts/rights protection
- Energy/Fuel Conservation
- Environmental stewardship
- Flood risk education
- Research/feasibility studies

**Modify**
- Behavior
- Management Practices
- Design Standards
- Address immediate Retrofit Needs
- Collaboration

**Expand**
- Education/Outreach
- Emergency Preparedness
- Water Conservation
- Habitat Preservation/Restoration Enhancement
- Groundwater Recharge/Protection
- Collaboration with land use entities

**Initiate**
- Identify Med and long-Term Retrofit/Lifecycle Replacement Needs
- Identify New Capital Improvement Project
- Conduct feasibility studies

- Part of or Easily Integrate into Existing Operations
- Pursue Grant Funding Partner/Collaborate
- Community Support and New Funding Strategies

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**Work towards carbon neutrality by 2020**

GHG reduction

**District Greenhouse Gas Emission Reduction**

- Energy Management
- Facilities Management
- Fleet Management
- Regional Collaboration
- Countywide Green Business Program
- Hydroelectricity Production
- Climate Change Portal Knowledge Sharing/Management
- Quality Management Committee Reviews
Diversify GHG reductions portfolio

- Water Conservation
- Recycled water
- Anderson hydro and solar
- Carbon sequestration
- Green Business Program

Plan for the future
Integrating climate change into planning
15-Year Plan furthers climate resiliency

- Ensure a safe reliable water supply
- Reduce toxins, hazards and contaminants in our waterways
- Protect our water supply from earthquakes and natural disasters
- Restore wildlife habitat and provide open space
- Provide flood protection to homes, businesses, schools, and highways

A diversified, flexible water infrastructure

- 1 advanced water purification center*
- 1 state-of-the-art water quality laboratory
- 3 pumping plants (own or operate)
- 3 drinking water treatment plants
- 10 dams and surface water reservoirs
- 140 miles of large transmission pipelines
- 275 miles of streams
- 400 acres of groundwater recharge ponds

120 billion gallons average annual consumption

55% of our supply comes from imported sources
Utilize locally sustainable water supplies

- No-regret strategies

Actively engage in the Delta solution

- Bay Delta Conservation Plan
  - co-equal ecosystem and water supply goals
Engage in regional efforts

- Silicon Valley 2.0
- HCPS and NCPPs
- Bay area IRWMP
- South Bay Salt Pond Restoration
- Shoreline Protection

Influence local land use decision making

- Consider flood zone, pipe lines, waterways
- incorporate trails feasibility, groundwater impacts in site planning
Public-Private partnership/community support

“Water is one of the Region’s most precious resources, serving a multitude of needs... Sustainability in the long run requires that households, workplaces, and agriculture operations efficiently use and reuse water.”

Integrating climate science

- Establish, collect, analyze local data
- Review, analyze trends at different geo scales
- Follow new design standards
- Integrate climate science as core competency
- Plan for flexibility and resiliency
- Diversify supplies and services (add more shades of green)

Partner/Collaborate/Community Engagement
Not as challenging as some may think:

- Risk management
- Trend tracking
- Broaden the perspectives
- Apply new tools/analytics
- Communicate new dimensions to old problems

Apply Adaptation Strategies for Water Sector:

- Provide Sustainable Funding for Statewide and Integrated Regional Water Management
- Fully Develop the Potential of Integrated Regional Water Management
- Aggressively Increase Water Use Efficiency
- Practice and Promote Integrated Flood Management
- Enhance and Sustain Ecosystems
- Expand Water Storage and Conjunctive Management of Surface and Groundwater Resources
- Fix Delta Water Supply, Quality and Ecosystem Conditions
- Preserve, Upgrade and Increase Monitoring, Data Analysis and Management
- Plan for and Adapt to Sea-Level Rise
- Identify and Fund Focused Climate Change Impacts and Adaptation Research and Analysis
Invest in local green infrastructure

Key strategies for moving forward

![Image of green infrastructure]

Emergency preparedness

Key strategies for moving forward

**CAL FIRE**

- Five Year Cooperative Fire Protection Reimbursement Agreement (PL-566 and Lexington Hills Community Wildfire Protection Plan)
- Water Tender Dispatch Program

**Santa Clara County Office of Emergency Services (OES)**

- Partnered with County OES to promote AlertSCC

[AllertSCC.gov](http://www.allertsc.gov)
Be proactive and lead the way

Key strategies for moving forward

Questions/Comments

http://bit.ly/2BVhT for climate change portal
www.valleywater.org
syoung@valleywater.org
(408)630-2468