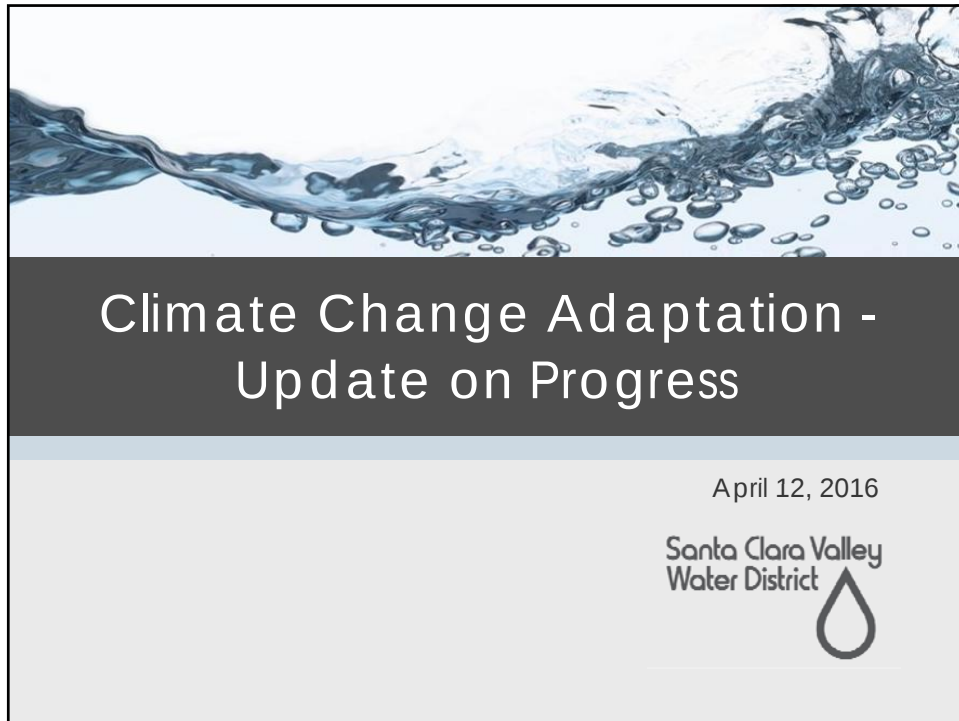




Climate Change Adaptation Efforts

- ▶ Activities for Water Supply (Water Utility Enterprise)
- ▶ Activities on Fluvial and Tidal Flood Protection
- ▶ Activities on Ecosystem Resiliency
- ▶ Knowledge Activities on Adaptation

Key Board Discussions

Date	Topics	Key Updates
10/27/2015	Climate Change Mitigation - Update on Progress Towards Achieving Carbon Neutrality by 2020	
10/28/14	Climate Change Mitigation - Update on Progress Towards Achieving Carbon Neutrality by 2020	Updated the Board on specific climate change adaptation related efforts in Attachment 2 of the Board Agenda Memo
07/8/2014	Flood Protection and Climate Change	Updated the Board on climate impacts on precipitation and sea level rise and recent flood protection related projects
11/26/2013	Global Climate Change - Adaptation	Updated the Board on climate change impacts and adaptation efforts
1/29/2008	Work Study Session on Climate Change and Water Resources in Santa Clara County	Adopted a resolution on climate change and water resource management in Santa Clara County

Board Policies Direction - Adaptation

CEO Interpretation:

Strategies: S 2.7, 3.4, 4.6

Incorporate climate change mitigation and adaptation into District planning efforts.

Attachment 1

Adaptation Activities for Water Supply

Our long term planning continually develops and improves resilient and adaptable water supplies and strategies and considers changing conditions.

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Adaptation Activities for Water Supply

Climate change and long term water supply plans:

- Updating our 2012 Water Supply and Infrastructure Master Plan in 2017, which will continue to develop elements that adapt well to future climate changes
- Addressing water utility infrastructure vulnerability in the Infrastructure Reliability Plan update 2015

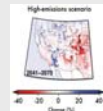


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Adaptation Activities for Water Supply

Long term water supply elements:

- ▶ Manage water use demands
- ▶ Provide drought-proof supplies
- ▶ Secure imported water supplies
- ▶ Increase system flexibility
- ▶ Compile and analyze data



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Adaptation Activities for Fluvial and Tidal Flood Protection

Our current focus is on flood protection warning systems in fluvial systems and assessing sea level rise impacts and responses.



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Adaptation Activities for Fluvial and Tidal Flood Protection

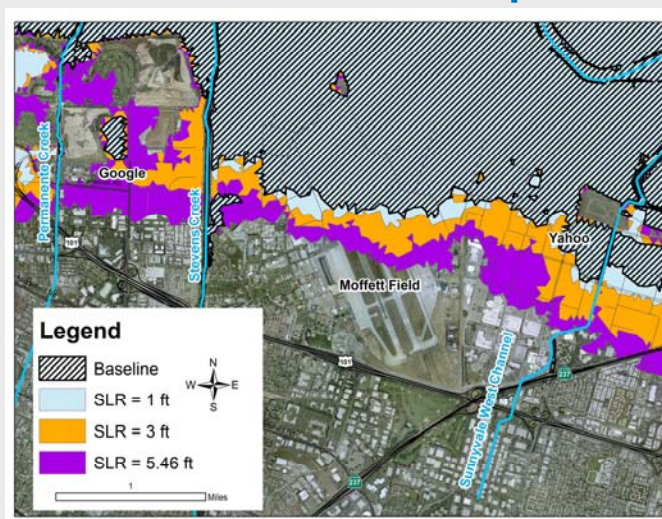
Assessing flood related impacts

- ▶ Downscaling global climate modeling results to the Santa Clara County area
- ▶ Mapping coastal flooding for various sea level rise
- ▶ Developing flood warning systems for three watersheds
- ▶ Developing a memorandum of understanding with the US Fish and Wildlife Service

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Adaptation Activities for Fluvial and Tidal Flood Protection

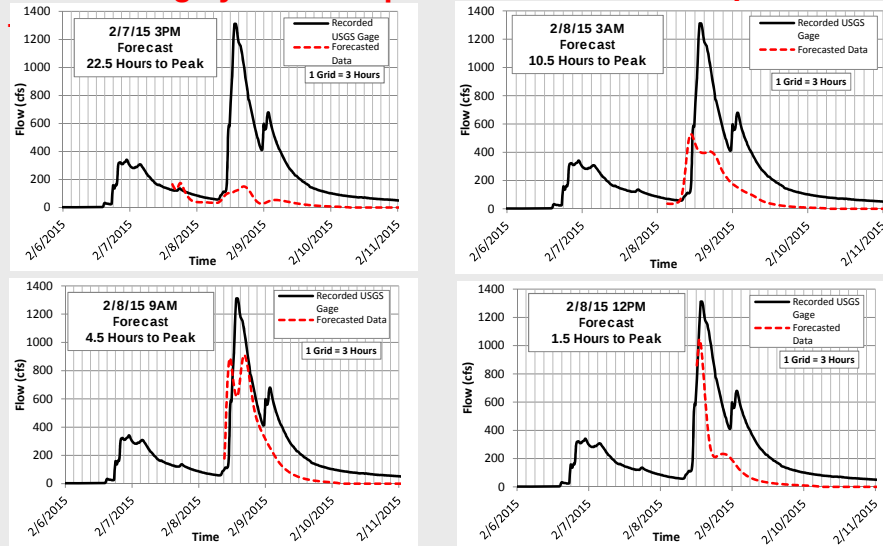
Sea Level Rise Snapshot



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Adaptation Activities for Fluvial and Tidal Flood Protection

Flood Warning System in Operation – San Francisquito Creek



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Adaptation Activities on Ecosystem Resiliency

Restoration and enhancement projects which provide benefits to habitat and local species:

- ▶ Improving vegetative communities for local wildlife,
- ▶ Increasing native canopy cover and CO2 sequestration to ward off climate change,
- ▶ Increasing in-stream shading to lower water temperatures for fish,
- ▶ Enhancing habitat connectivity important for migration,
- ▶ Utilizing adaptive management strategies to more readily address changing climatic and habitat conditions in the future



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Adaptation Activities on Ecosystem Resiliency

Projects supporting ecosystems

- ▶ South Bay Salt Pond Restoration Project support will minimize bayfront impacts from sea level rise by providing a wetland buffer and attenuation of flows.
- ▶ The Shoreline study will not only enhance flood protection for our bayfront communities but will also provide improved ecotones and habitat connectivity for wildlife.
- ▶ San Francisco Bay Bird Observatory grant to plant native vegetation on the South Bay Salt Pond levee to enhance habitat connectivity for local wildlife.
- ▶ Water conservation program rebates to homeowners and businesses for converting high water use to climate appropriate plants.

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Knowledge Activities on Adaptation

Training:

- ▶ Climate Change Science Training for team by SCU, Prof. Ed Maurer
- ▶ Climate Change Adaptation Training for team by Susanne Moser Research and Consulting



Knowledge Activities on Adaptation

Data Acquisition

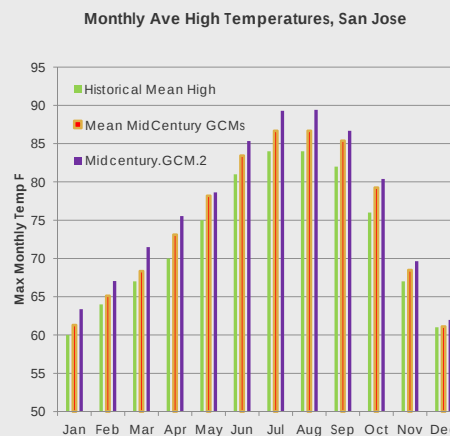
- ▶ Technical Services Contract with SCU to downscale Global Climate Models (GCM's) to Key Locations in Santa Clara County
 - ▶ Preliminary Temperature and Precipitation data provided.
 - ▶ SCU and District Staff are Reviewing Final Product
 - ▶ Intent is to use downscaled data in District Water Supply and Flood Protection Models to Estimate Potential Future Changes
 - ▶ As Predicted, the Models Show Significant Temperature Increases
 - ▶ Precipitation Data Under Review

Knowledge Activities on Adaptation

Santa Clara University Technical Services Contract, Results Downscale of GCMs

Preliminary Analysis, Downscaled Monthly High Temps:

- ▶ 8 GCMs, Two GHG Scenarios (low and high), 2 timescales (Early and mid-late Century)
- ▶ All models produce different results. GCM2 produces the highest projected temperatures. GCM8 is the lowest. All models exceed the historical mean in most months.





Questions ?

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Santa Clara Valley Water District 