

ARCCA Learning Session

Virtual Adaptation Tools Salon

cal-adapt

 **Adaptation Clearinghouse**
Powered by the Georgetown Climate Center

 **ATLAS**

November 15, 2016 | 11:00 AM - 12:00 PM PST



Learning Session Agenda

- **Brief overview** of the Alliance of Regional Collaboratives for Climate Adaptation (ARCCA)
- **Cal-Adapt** presentation
- **Adaptation Clearinghouse** presentation
- **The Atlas Marketplace** presentation
- **Q&A** with Webinar Participants

Webinar Logistics

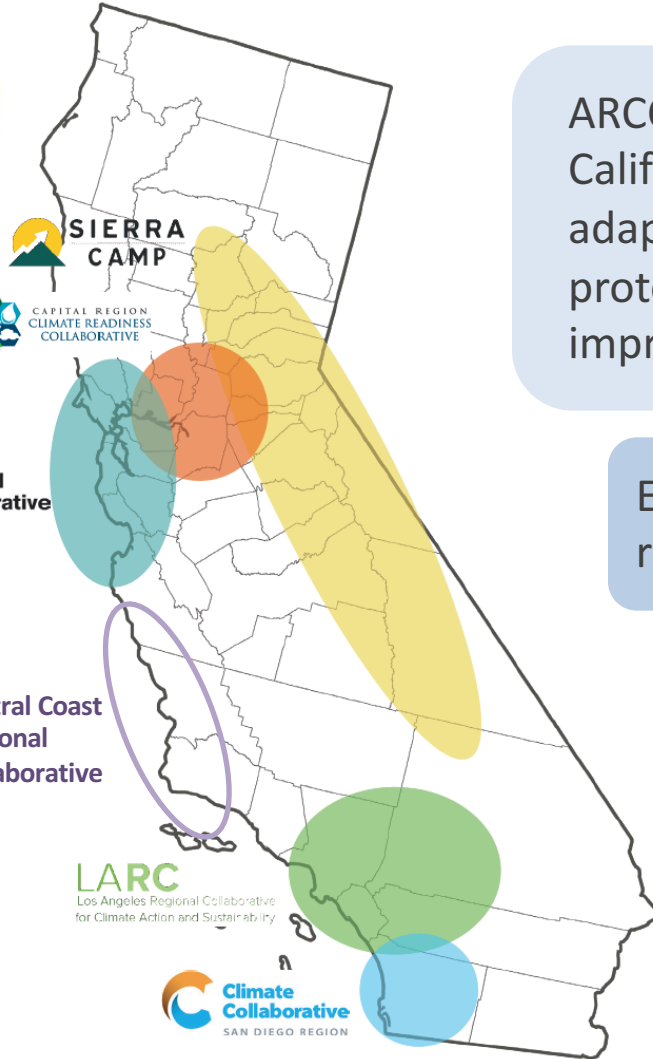
Questions:

At any point during the webinar, you can type your question into the question text box and click send.

All questions directed towards a speaker will be read aloud and answered at the end of the presentations, as long as time permits.

The screenshot shows the GoToWebinar Control Panel window. It has a title bar with three colored buttons (red, yellow, green) and the text "GoToWebinar Control Panel". Below the title bar is a blue header with a dropdown arrow and the word "Audio". Under "Audio", there is a section "Audio Mode:" with two radio buttons: "Use Telephone" (unselected) and "Use Mic & Speakers" (selected). Below this is a row containing a microphone icon, the word "MUTED" in red, a speaker icon, and a volume level indicator with seven small squares. Below the "Audio" section is a blue header with a dropdown arrow and the word "Questions". Under "Questions", there is a large empty text box. Below the text box is a "Send" button. At the bottom of the panel, there is a section "Webinar Now" with the text "Webinar ID# 349-759-329" and the "GoToWebinar" logo.

About ARCCA



ARCCA is a **network of regional collaboratives** in California coordinating and supporting climate adaptation efforts to enhance public health, protect natural systems, build economies, and improve quality of life.

Engaging in **state policymaking** to advance a regional and holistic approach to adaptation.

Sharing **best practices and resources** to advance local efforts on the ground.

Encompassing over **80%** of the state's population.

Featured Presenters



Susan Wilhelm
Senior Mechanical Engineer
California Energy Commission

cal-adapt



Melissa Deas
Institute Associate
Georgetown Climate Center



Elle Hempen
Chief Executive Officer
The Atlas Marketplace





Cal-Adapt 2.0: A Tool to Support Climate Resilience in California

Susan Fischer Wilhelm, PhD, MSE
Climate Research Lead
Energy Research and Development Division
California Energy Commission
susan.wilhelm@energy.ca.gov
916-327-1545



Presentation will address:

- What is Cal-Adapt, and why was it created?
- What you can learn from Cal-Adapt
- What features are forthcoming
- Why Cal-Adapt is important for climate-related planning and research in California
- How to help shape the future of Cal-Adapt



What is Cal-Adapt?

- Resource created by State of California under contract with UC Berkeley's Geospatial Innovation Facility to **convey local climate risks** based on peer-reviewed science
- Climate change projections presented in **easy-to-understand format** with plain English descriptions *and* scientific rigor
- **Interactive maps and charts** provide a variety of approaches to explore different aspects of climate change
- **Access to primary climate change data** for further analysis



CALIFORNIA ENERGY COMMISSION



Developed by UC Berkeley's Geospatial Innovation Facility

Nancy Thomas, Executive Director

Shruti Mukhytar, Lead Developer

Development Supported by the California Energy Commission
with oversight and guidance from:



Susan Wilhelm, Climate Research Lead, California Energy Commission (CEC)

Guido Franco, Team Lead for Environmental Research, CEC

Our helpful **Advisory Committee** (past and present)

Melissa Deas, former (2014) intern and Masters student of MIT's Urban Studies and Planning

Stockholm Environmental Institute (prototype)

Amy Luers, then of google.org and key to original vision plus securing funding





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<http://cal-adapt.org/> (currently v. 1.0, June 2011)

Tools for exploring temperature, snowpack, sea level rise, and wildfire.

Video tour!

cal-adapt

EXPLORING CALIFORNIA CLIMATE CHANGE RESEARCH

Video Tour
VIEW THE DIFFERENT TOOLS AND DATA AVAILABLE IN CAL-ADAPT

Explore Climate Tools
INTERACTIVE MAPS & CHARTS

About Cal-Adapt
SUBSCRIBE TO THE CAL-ADAPT NEWSLETTER

- WHAT'S NEW?
- WHAT'S TO COME?
- FAQS

Access Data
ACCESS THE RAW DATA USED IN CAL-ADAPT

Select and download data in a variety of tabular and GIS formats

Resources
RESEARCH, PUBLICATIONS & LINKS

Find out more about climate change research in California, explore peer reviewed publications and learn more about how to use climate projections.

Community
CAL-ADAPT BLOG, CLIMATE CHANGE NEWS & EVENTS

Find out more about how climate change in California is relevant to your community and share your thoughts and findings

Tweet 307 Like 536

Site developed by:
Geospatial Innovation Facility

Cal-Adapt is a product of the Public Interest Energy Research (PIER) program

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State of California, Edmund G. Brown Jr., Governor

cal-adapt.org/tools/



Guiding Principles

Data

- Peer-reviewed data
- All climatic data available for download
- Full attribution of researchers
- Continuous, stable access to datasets

Usability

- Foster translation of science to usable tools
- Connect users with other resources
- Support sharing of tools, resources, case studies
- No cost to users

Exploring California's Climate Change Research

Cal-Adapt provides a view of how climate change might affect California. Here you will find tools, climate data, and resources to conduct research, develop adaptation plans, build applications and learn about climate change research.

<http://beta.cal-adapt.org/>

Cal-Adapt Updates

Our new website is in beta. We are actively adding content, updating our Climate Tools and building new ones. You may encounter the occasional broken link or be redirected to content on our current website cal-adapt.org.

Subscribe to the [Cal-Adapt Newsletter](#) or connect with us on [Twitter](#) or [Facebook](#) to get notified as we update the site. Send us your [feedback](#)! Upcoming tools:

- Data download
- Extreme Heat Tool using LOCA downscaled CMIP5 data
- Snowpack Tool

Working on Adaptation Planning?

Explore Climate Data Visualizations

Explore climate change in your area using our interactive data visualizations

Find Research and Publications

Search our publications database and State of California's Research Catalog

Check out our Blog

Find out about events and funding opportunities, read case studies and recent climate stories for California



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Available* Tools: Cal-Adapt 2.0

Improved capture of temperature extremes, precipitation distribution

Alignment with IPCC's 5th Assessment Report (AR5, 2014)

Climate Tools

The tools featured here are built using **LOCA** downscaled **CMIP5** climate change projections. If you are looking for our other Climate Tools (local snapshots, snowpack, wildfire, extreme heat) built with CMIP3 downscaled climate change projections visit cal-adapt.org.

ANNUAL AVERAGES



Explore charts of projected annual averages of maximum temperature, minimum temperature and precipitation for your location.

Source: Pierce et al., 2015

EXTREME HEAT



Explore charts of projected frequency and duration of extreme heat events for your location.

Source: Pierce et al., 2015

SEA LEVEL RISE - CalFloD-3D



Explore maps of inundation location and depths for San Francisco Bay Area, Sacramento - San Joaquin Delta and the California coast during near 100 year storm events coupled with projected Sea Level Rise scenarios.

Source: Radke et al., 2016

* ... many more tools forthcoming (slide 17)



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cal-adapt > CLIMATE TOOLS > EXTREME HEAT

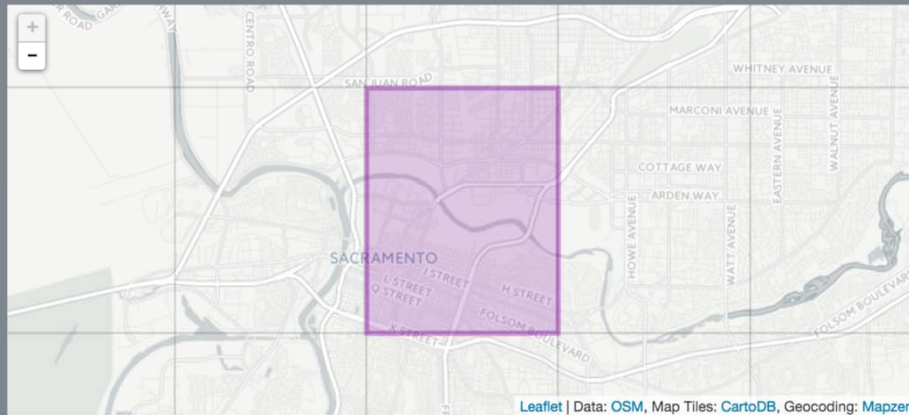
EXPLORE

ABOUT

Extreme Heat

As the climate changes in California, one of the more serious threats to the public health of Californians will stem primarily from the higher frequency of extreme conditions, principally more frequent, more intense, and longer heat waves. An increase in heat waves may increase the risk of heat stroke and dehydration. Find out how you can become better prepared and more resilient to increasing temperature and extreme heat events at [Preparing California for Extreme Heat](#), a report put together by California Environmental Protection Agency (CalEPA) and the California Department of Public Health (CDPH).

For most areas around the state, the climate models project a significant rise in the number of days exceeding what is now considered extremely hot for the given area. Explore how the frequency and timing of extreme heat days and warm nights is expected to change under different emission scenarios with the charts below.



Leaflet | Data: OSM, Map Tiles: CartoDB, Geocoding: Mapzen

Area near Sacramento, CA, USA

MODEL GRID

CHANGE LOCATION



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Change Location Type

MODEL GRID
1/16° (Approximately 7 km)

COUNTIES

WATERSHEDS
HUC 10

CENSUS TRACTS
CalEnviroScreen 2.0

CLIMATE ZONES
Western Regional Climate Change Center

IRWM BOUNDARIES
California Dept. of Water Resources

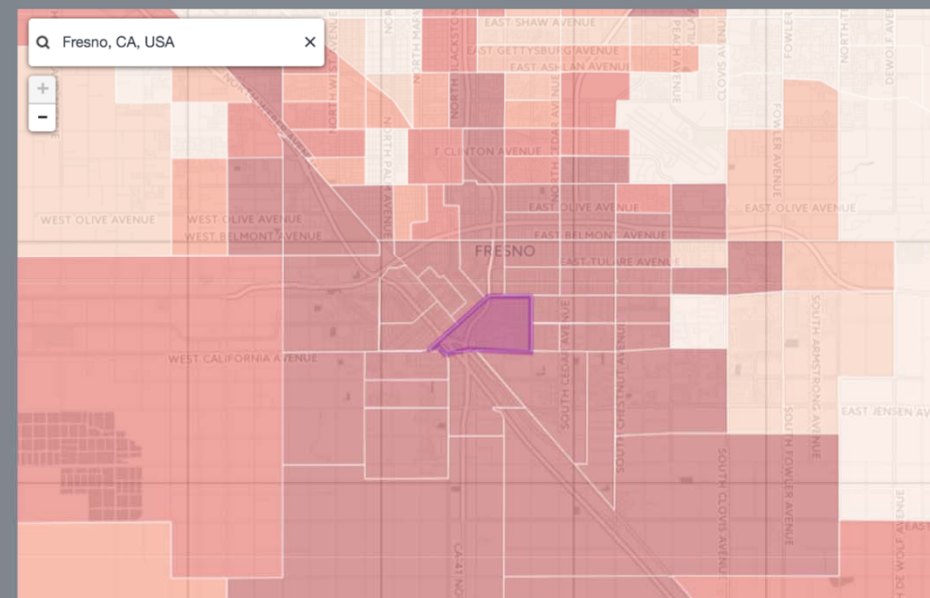
CENSUS DESIGNATED PLACES

LEGISLATIVE DISTRICTS

CUSTOM
Upload polygon boundary

... a number of different aggregation options to support visualization and data analysis

Select Location



Search for or click on a location on the map, or select from list below

Filter		
TRACT ID	POPULATION	CES 2.0 SCORE
6019000400	6343	74.97
6019000300	3,609	83.71
6019000200	3,167	83.47
6019000100	2860	61.44

UPDATE VISUALIZATION

High scores indicate vulnerable “hotspots” based on sociodemographic and environmental/pollution indices, according to CalEnviroScreen 2.0



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14-fold increase in frequency,
30-year averaging period

Census Tract ID 6019000400

DAYS ABOVE 106.7°F

4

55

OBSERVED

PROJECTED

1970-1999

2070-2099

This chart shows total number of Extreme Heat days for the selected area on map under the RCP 4.5 scenario.

An Extreme Heat day is defined as a day in April through October where the Maximum Temperature exceeds the area's calculated Extreme Heat Threshold (98th historical percentile of maximum temperatures based on observed daily temperature data between 1961-1990).

The gray line (1950 - 2013) is observed data. The colored lines (2006 - 2100) are projections from 10 LOCA downscaled climate models selected for California. Use year sliders to get means for different time periods. The projected mean is calculated for all models with a . Use slider below the chart to zoom and pan different time periods in the chart.

RCP 4.5

Emissions peak around 2040, then decline

RCP 8.5

Emissions continue to rise strongly through 2060 and plateau around 2100

See About page for details on data sources and methodology.
Disclaimer

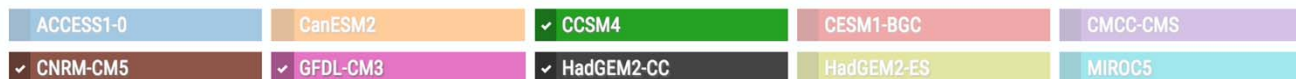
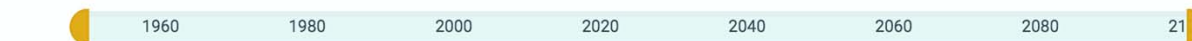
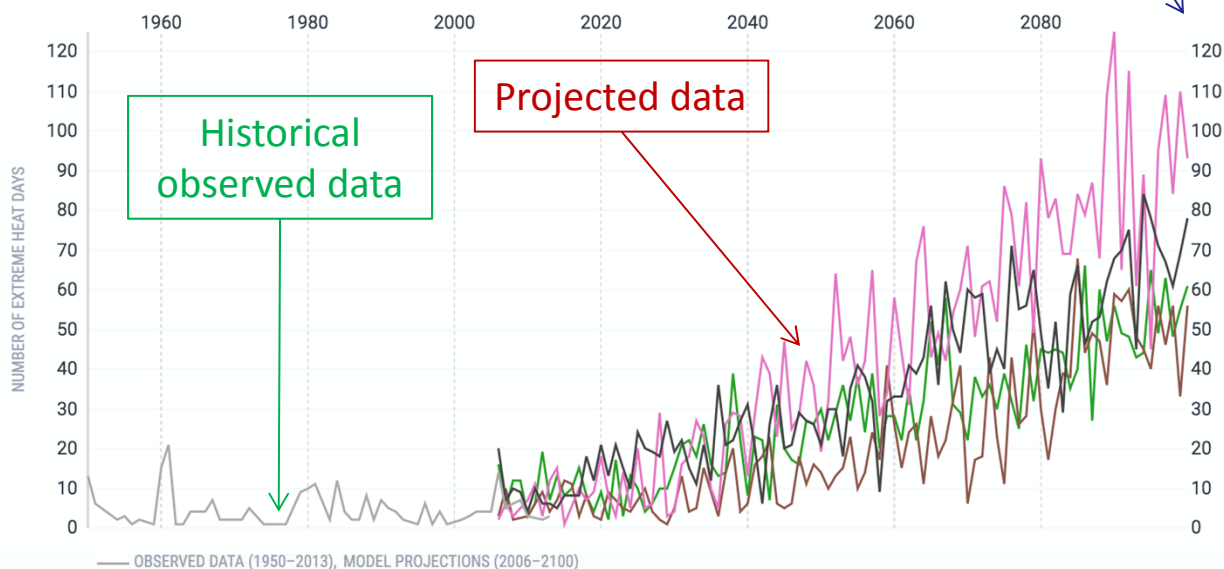
RCP 8.5 (continued "BAU" growth at 2%/yr)

Locally defined extreme heat threshold

Scale: up to 120 days/year



NUMBER OF EXTREME HEAT DAYS



Show All Ten Models Highlight One or More Models



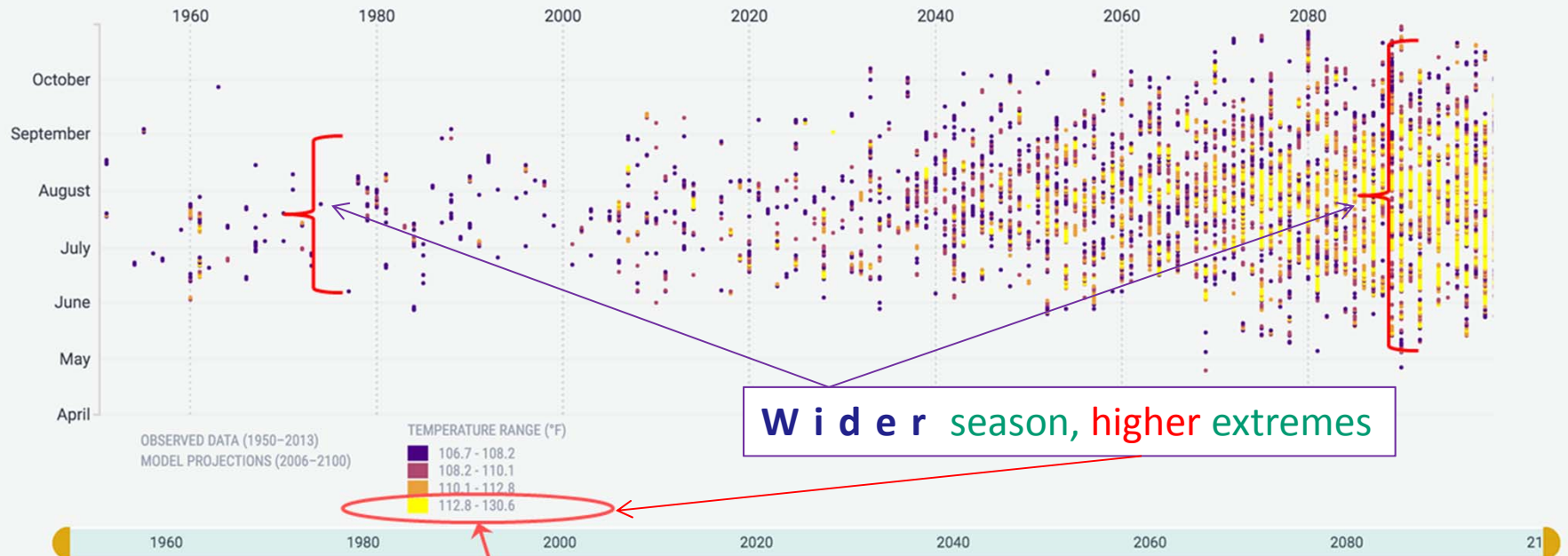
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TIMING OF EXTREME HEAT DAYS

Census Tract ID 6019000400

Days Above 106.7°F

Model: GFDL-CM3 Scenario: RCP 8.5





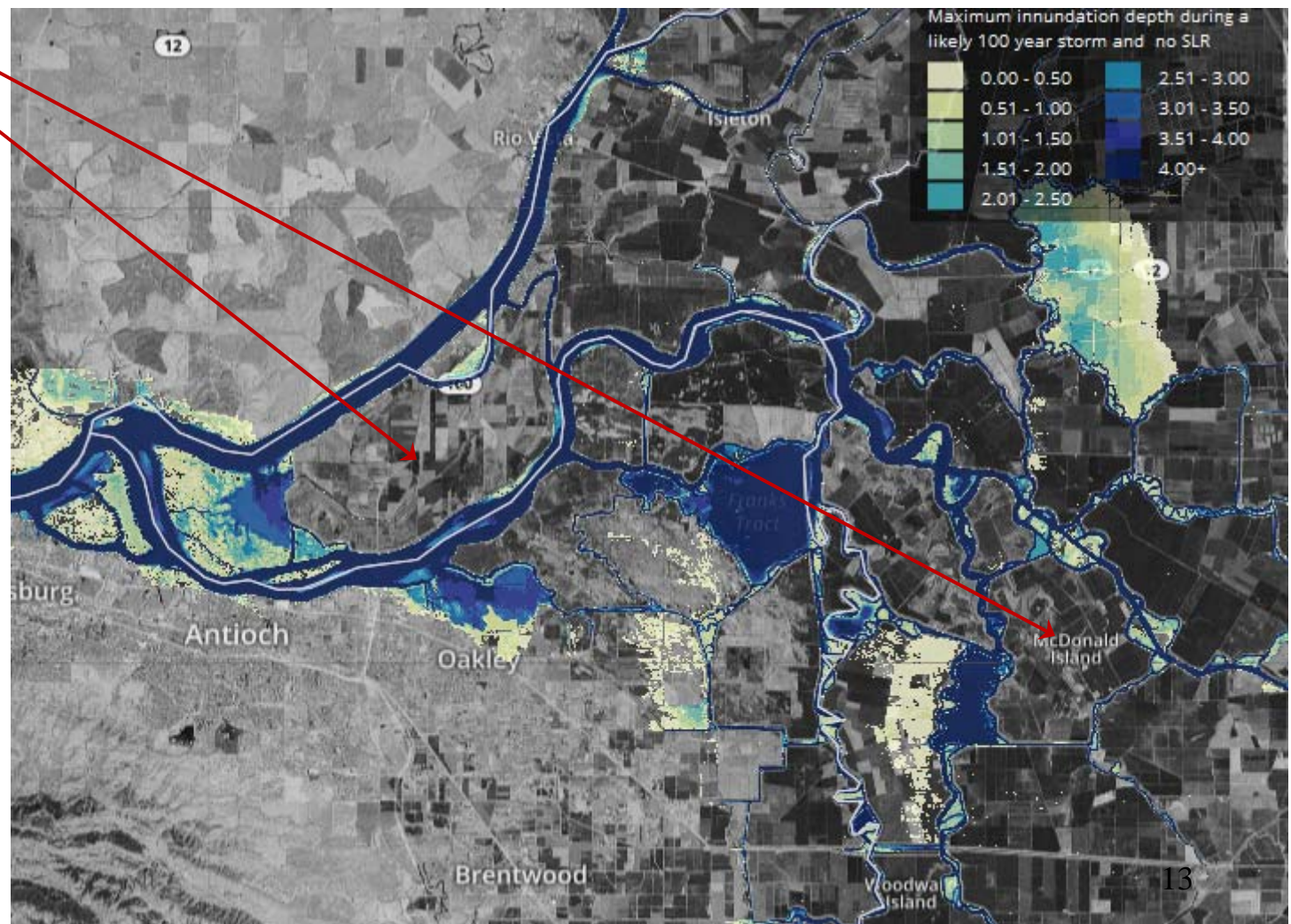
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Delta Flooding: 0.0 m sea level rise + extreme storm event

Infrastructure:

McDonald Island

Sherman Island





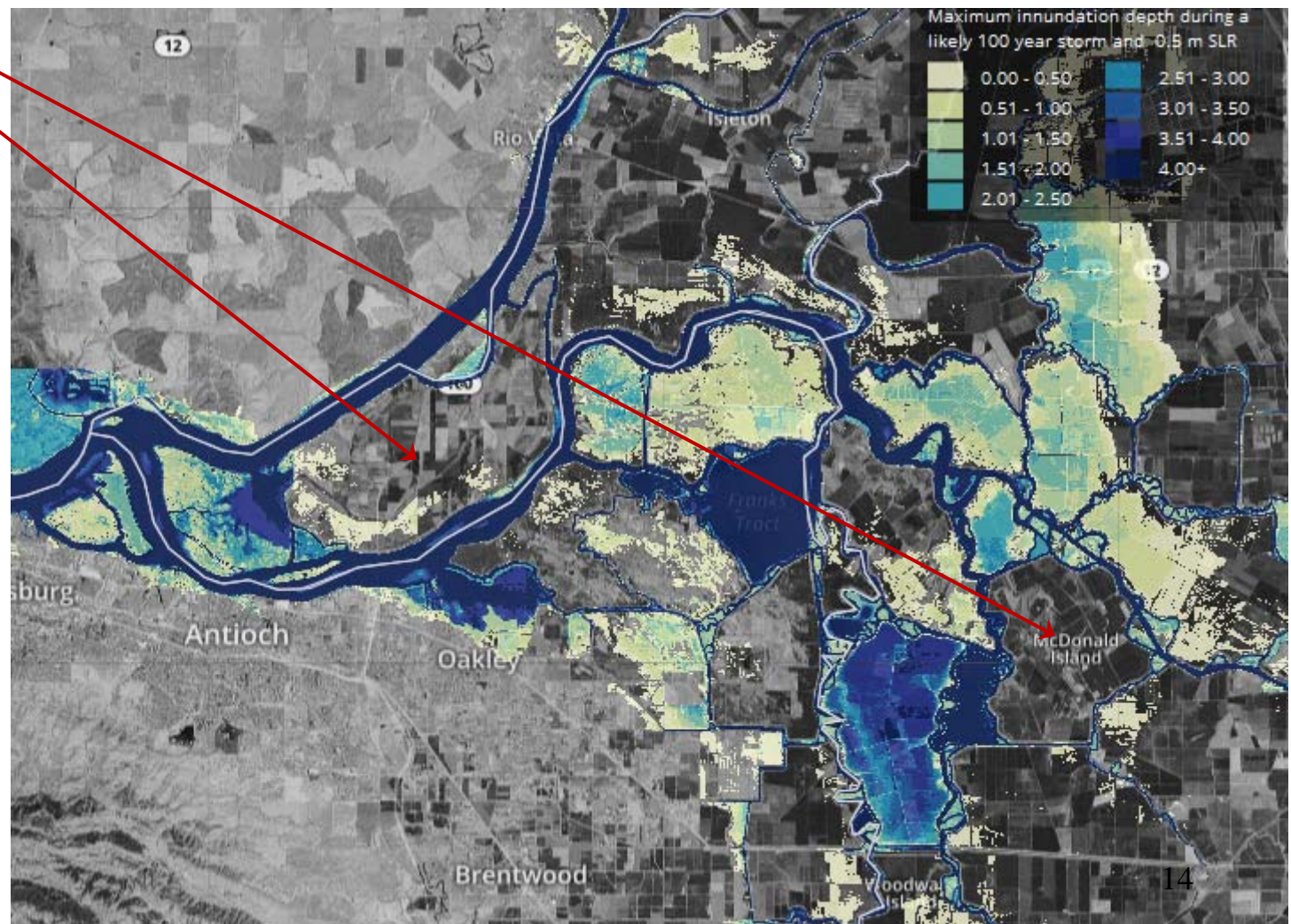
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Delta Flooding: 0.5 m sea level rise + extreme storm event

Infrastructure:

McDonald Island

Sherman Island





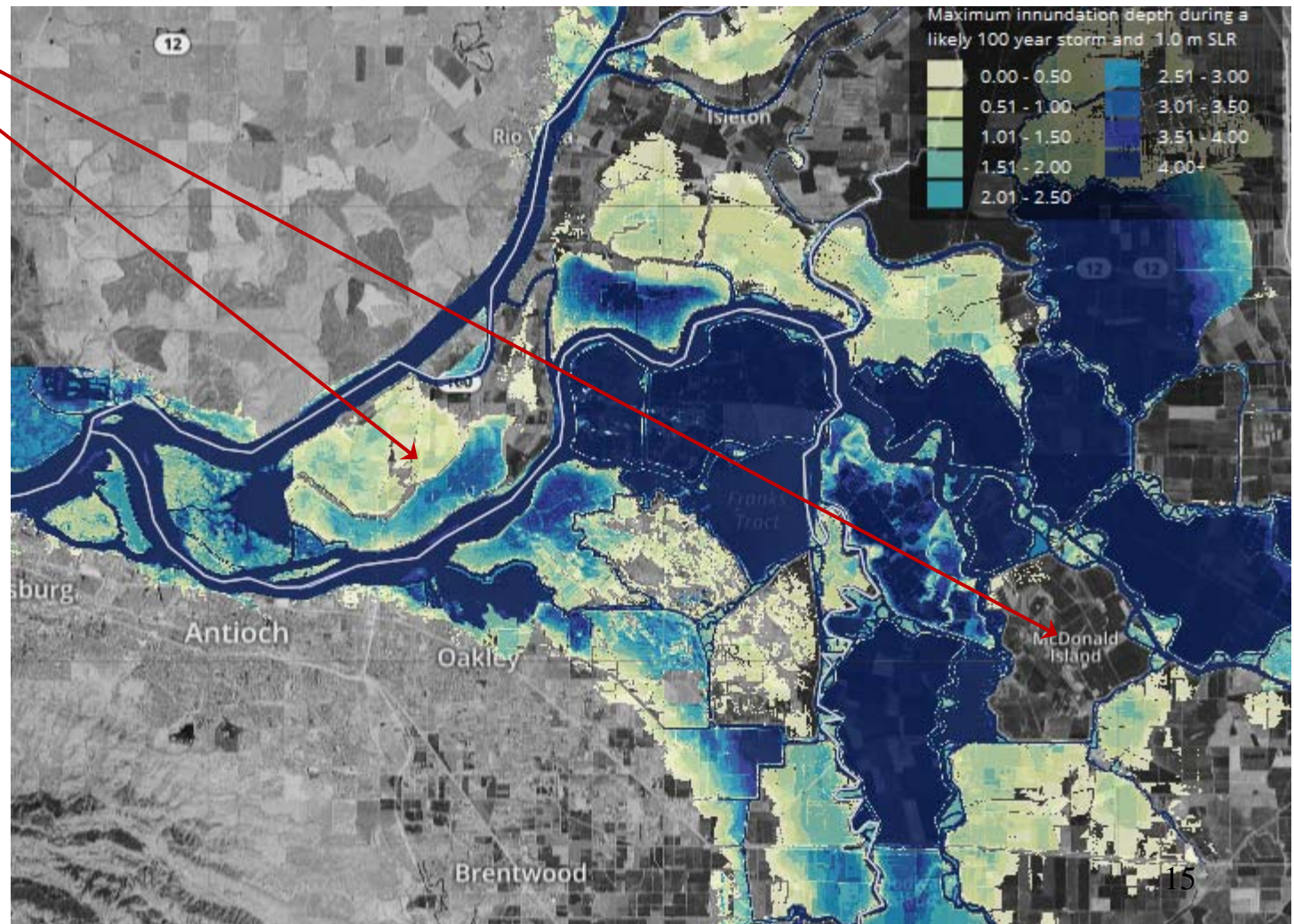
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Delta Flooding: 1.0 m sea level rise + extreme storm event

Infrastructure:

McDonald Island

Sherman Island





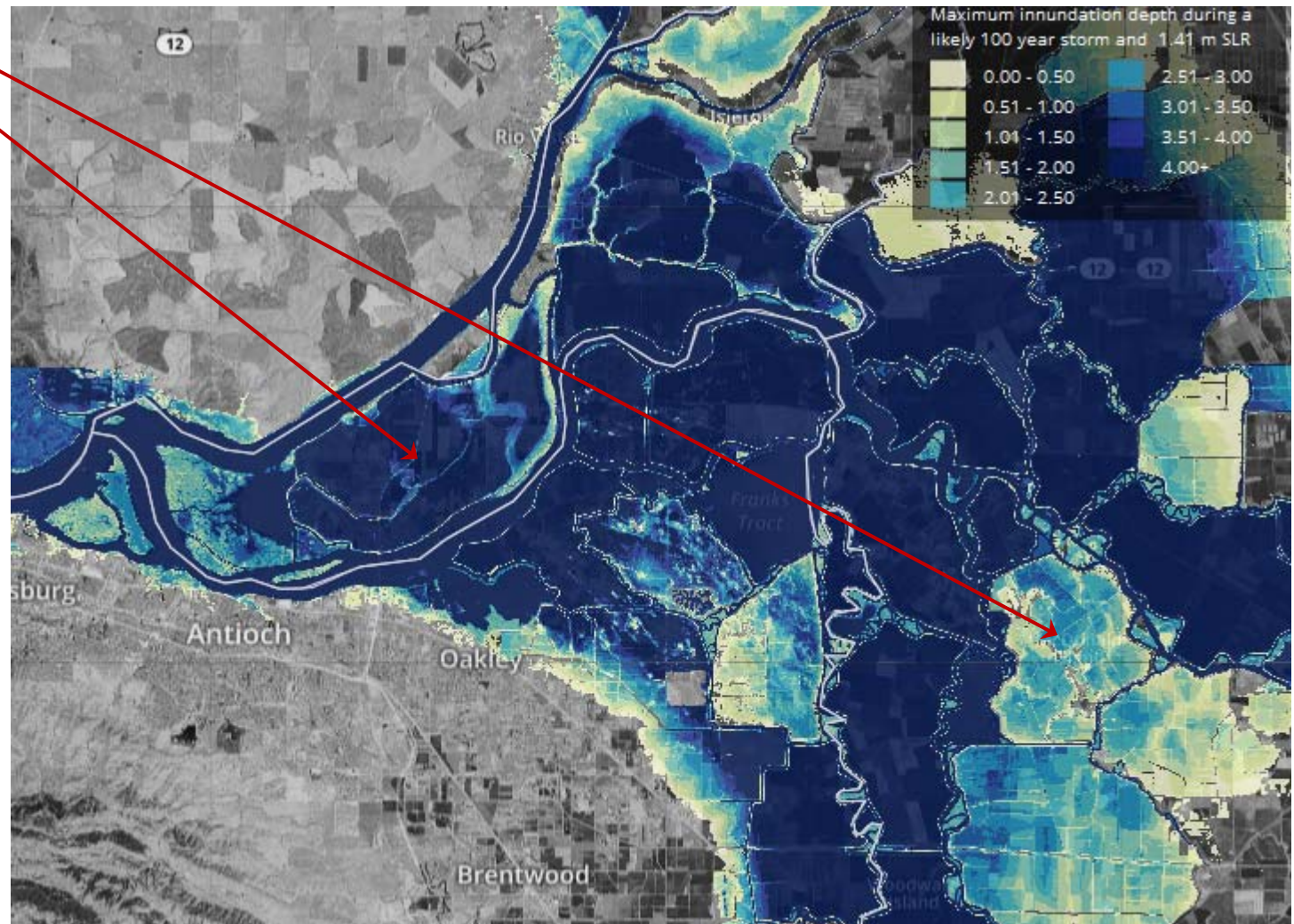
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Delta Flooding: 1.41 m sea level rise + extreme storm event

Infrastructure:

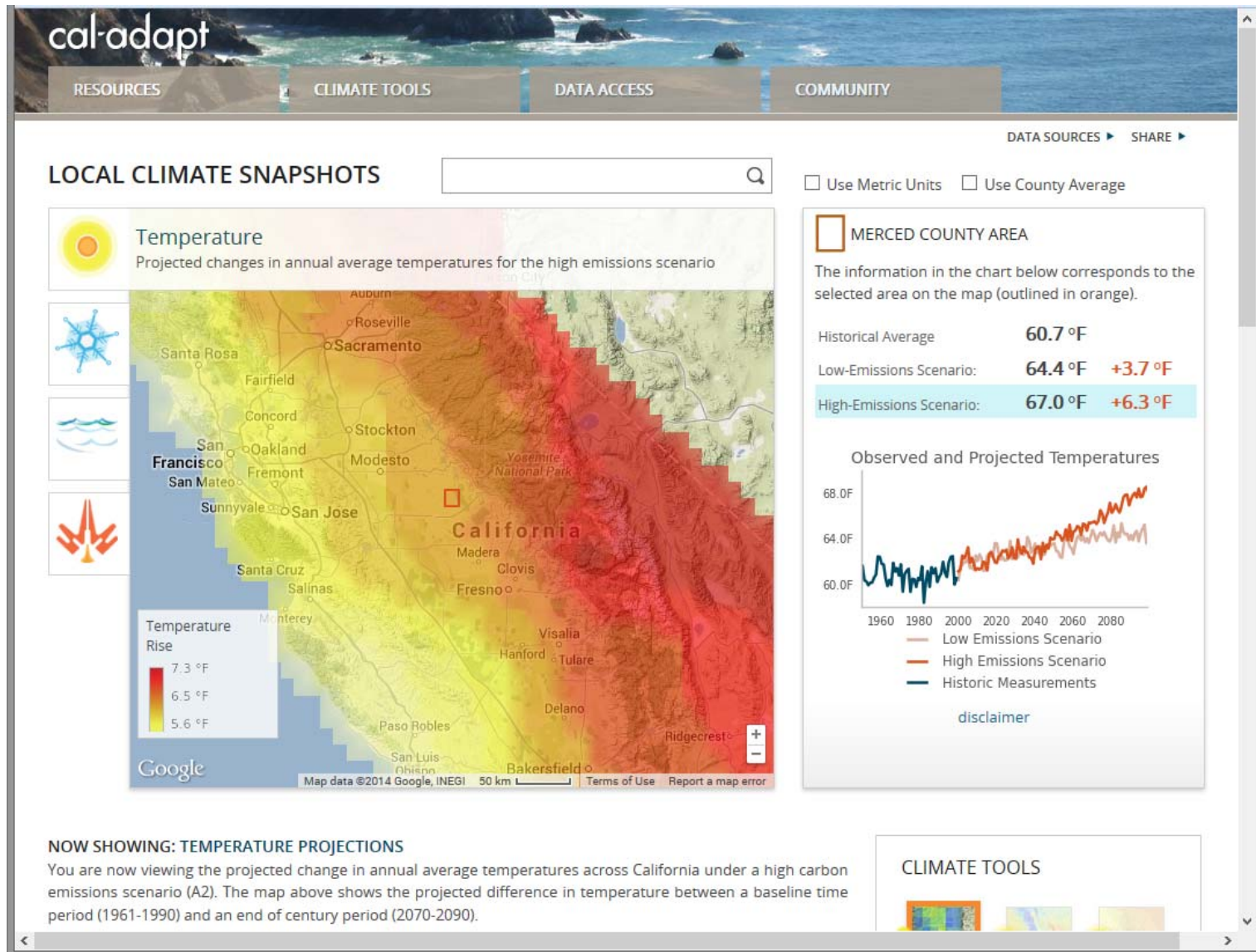
McDonald Island

Sherman Island





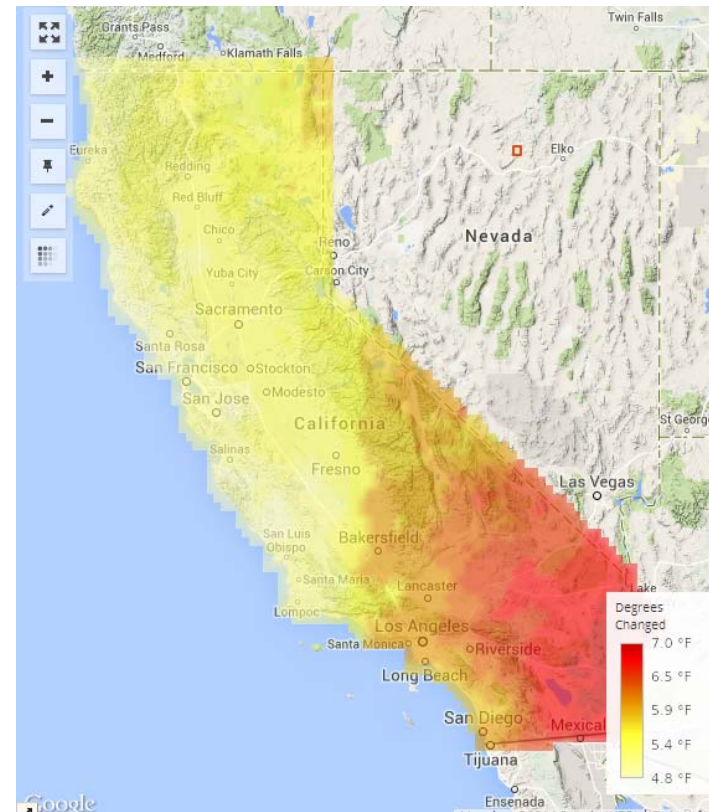
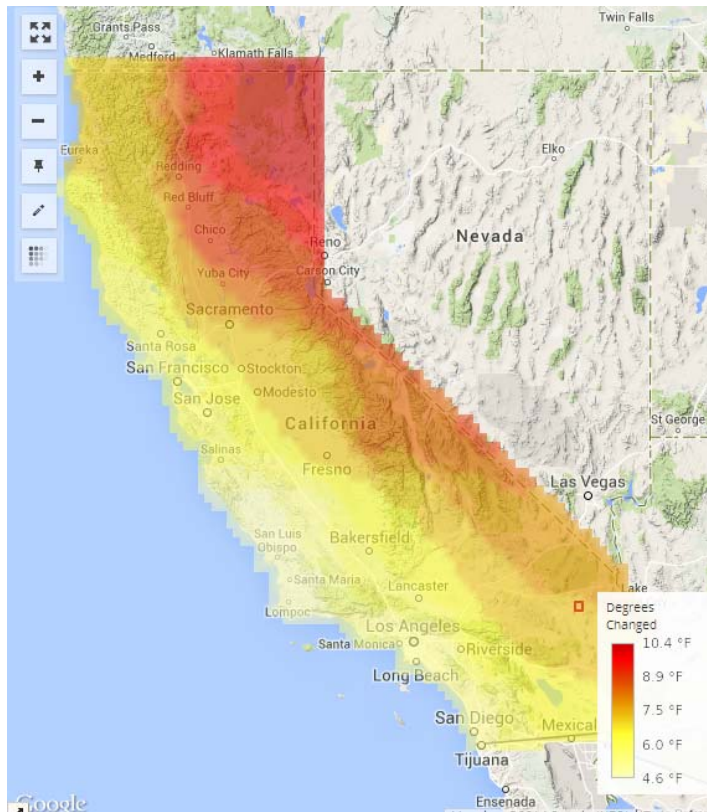
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Degrees of Change: June vs. November <http://cal-adapt.org/>



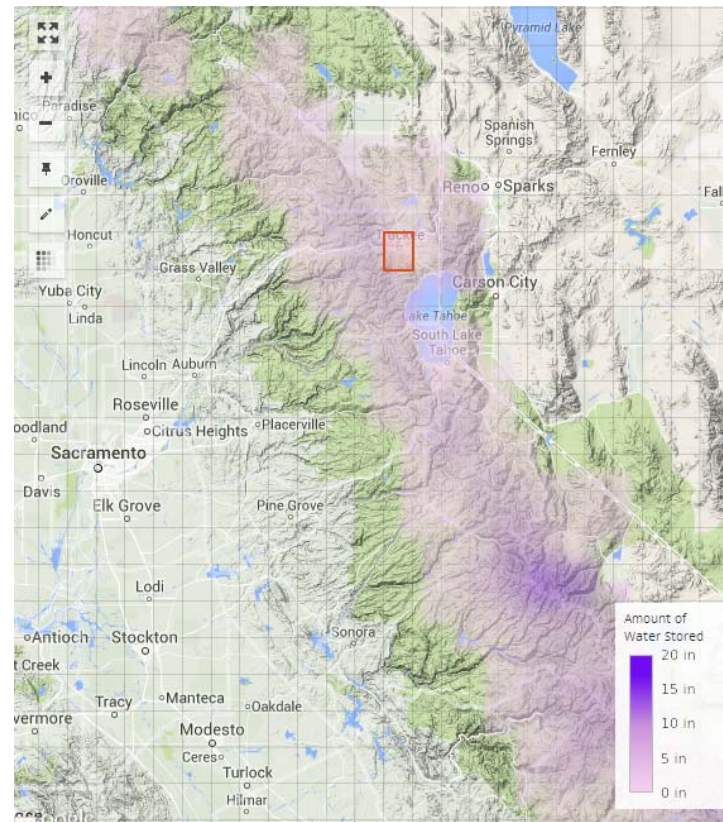
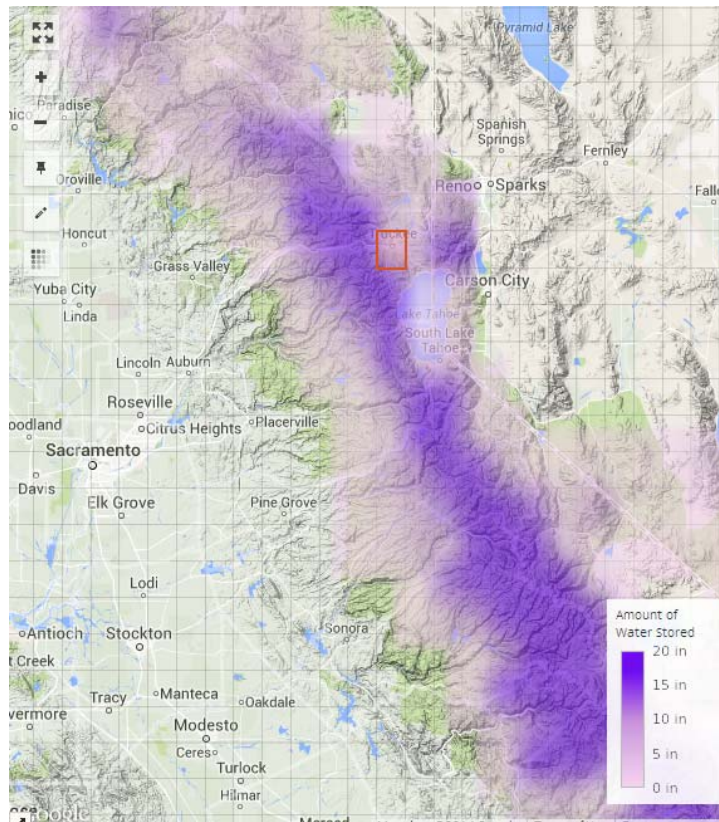
Degrees of change of projected high temperatures in June (left-hand side) vs. November (right-hand side) show under a high emissions scenario (A2), 1961-1990 vs. 2070-2099.

Regional distribution of change is not uniform.



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Projected Snow Water Equivalent: 1950 vs. 2090 <http://cal-adapt.org/>



Projected average April snow water equivalent in 1950 vs. 2090 projected to decrease by 70 to 90% under a high emissions scenario (A2). **Massive implications for water resources and energy sector in California.**



Forthcoming Features: Cal-Adapt 2.0

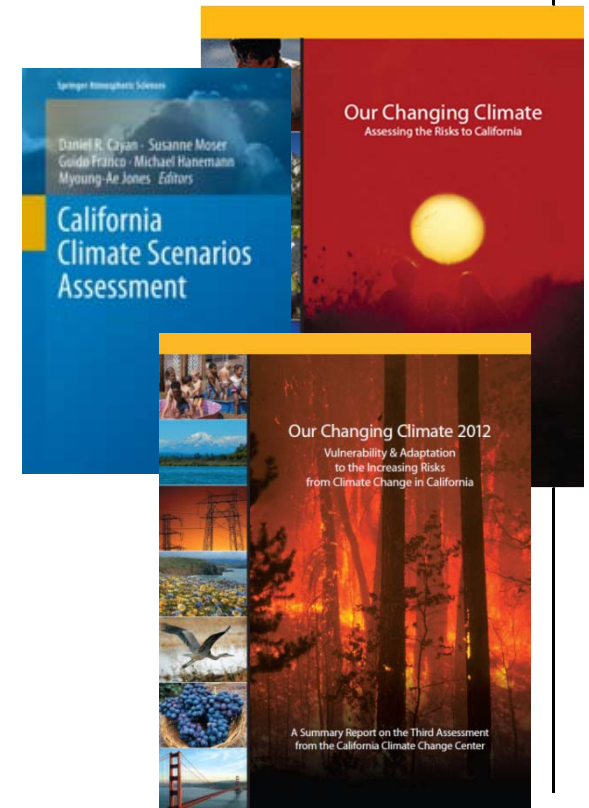
- Data download
 - sea level rise, snowpack, streamflow, wildfire risk, monthly temperature analyses
- New visualizations and tools
 - Aggregated change in area “at-risk” to flooding associated with sea level rise
 - Decadal change in snowpack
 - Change in wildfire risk (aggregated by user-specified shape)
 - Monthly temperature analyses
- Additional shape files (e.g., utility territories) to foster ease of analysis
- Portal to Integrated Climate Action and Resiliency Program(ICARP)
 - Also coordinating with Governor’s Office of Planning & Research re: local hazard mitigation, general planning guidelines, and other adaptation planning resources
- Custom tools to support energy sector planning
 - e.g., support decadal projections of energy demand by providing projected data at ~13 meteorological stations used in the forecast (*historical data increasingly poor proxy*)₂₀



California's Climate Change Assessments

Since California's landmark Executive Order (S-3-05) in 2005, the state has conducted periodic scientific assessments of regional climate change impacts.

- 2006
 - Documented the severity of potential impacts
 - Helped support passage of AB 32
- 2009
 - Concluded adaptation to be an essential complement to mitigation
 - Informed first California Climate Adaptation Strategy (2009)
- 2012
 - Explored regional and local studies, barriers to adaptation, and improved understanding of interactions of local vulnerabilities and climate risks





How Does Cal-Adapt Support the Assessment?

SCENARIOS: Cal-Adapt to serve climate, hydrological, sea-level rise scenarios* as well as projections of wildfire risk. These scenarios serve as a common basis for the Assessment and enable cross-sector integration of results.

VISUALIZING RESULTS: Visualizing and communicating results of Fourth Assessment research via Cal-Adapt (<http://cal-adapt.org/>).

- For example, development of probabilistic forecasting at seasonal and decadal scales, will provide foundation for integrating *projected* climate into infrastructure, planning, and management-related decisions. This is particularly crucial as climate diverges from historical observations.

TOOLS: Development of tools to support decision-making (focus on energy sector due to funding constraints).

*SLR scenarios also available from Our Coast, Our Future tool, which visualizes USGS CoSMoS model.



Interface with Resilience Planning: Policy

- **Integrated Energy Policy Report (IEPR):** State needs to offer utilities explicit guidance for energy sector adaptation planning
 - Points to Cal-Adapt as a resource
 - Sanctions climate scenarios presented on Cal-Adapt as basis for energy sector planning
- **B-30-15 Technical Advisory Group**— forthcoming guidance from the Governor's Office of Planning and Research closely coordinated with Fourth Assessment research guidance
 - Common scenarios enable research results to be leveraged for science-based decisions
 - Climate relevant planning parameters being identified to support infra investments
- **SB 379**— Cal-Adapt named as resource for local hazard mitigation planning



Interface with Resilience Planning: Users

State and regional agencies:

- Governor's Office of Emergency Services Guidance document
- State adaptation planning guide
- Essential support for California Department of Public Health's efforts to "Build Resistance Against Climate Effects" (BRACE)
- Regional water management planning (Prop. 84): anecdotal reports of use

City, county, and tribal entities: climate change plans and documents

Utility sector planning efforts: e.g., DOE's Resilience Partnership



Your input helps shape Cal-Adapt

Climate Tools Data Resources Blog About **Help**

support@cal-adapt.org

Help



Using Climate Projections

Guidance on understanding climate data presented on Cal-Adapt and it's appropriate use.

Katharine Davis Reich at UCLA's Center for Climate Change Solutions



FAQs

Frequently asked questions about terminology and data used on Cal-Adapt.

California Energy Commission & Cal-Adapt



Contact Us

Can't find what you're looking for? Email us at support@cal-adapt.org.

Cal-Adapt

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Adaptation Clearinghouse Version 2.0

July 14, 2016
The Georgetown Climate Center

GEORGETOWN CLIMATE CENTER

- Convenes and serves as resource to states and local governments
- Brings together academics and policymakers to improve climate policy
- Informs the development of:
 - Legislation
 - Regulation
 - Transportation policy
 - Adaptation policy



Goals of AC2.0

- Manage information overload
- Generate expert feedback
- Facilitate peer networking
- Create entry points for different audiences
- Create a flexible and dynamic tool

Average Rating



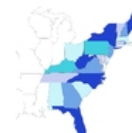
My Networks

Local Government
Professionals



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My Sector Interests

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USDN | urban sustainability
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AMERICAN SOCIETY OF
ADAPTATION PROFESSIONALS

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– an online database and networking site that serves policymakers and others who are working to help communities adapt to climate change.

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Enter a keyword

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Recently Added Resources

Resource

San Francisco Bay Clean Water, Pollution Prevention and Habitat Restoration Measure

June 7, 2016

The San Francisco Bay Clean Water, Pollution Prevention and Habitat Restoration Measure was approved by the nine county San Francisco Bay Area region of California and became law on June 7, 2016. The measure implements a regional tax - approved across the nine counties - to fund coastal habitat rehabilitation programs and adaptations to sea level rise and flooding. The purpose of the measure as stated is "to protect and restore San Francisco Bay to benefit future generations by reducing trash, pollution, and harmful toxins, improving water quality, restoring habitat for fish, birds, and wildlife, protecting communities from flood, and increasing shoreline public access and recreational areas."

Related Organizations: San Francisco Bay Restoration Authority

Resource Category: Law and Governance

Average Rating



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TRANSPORTATION



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Resource Category: Law and Governance

Average Rating



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and hit "search"

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Living Shorelines

APPLY FILTER

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Resource

Living Shorelines Initiative - Virginia

2011

Virginia Marine Resources Commission (VMRC) was directed by SB 964 in 2011 to develop and implement a general permit regulation that authorizes and encourages the use of living shorelines as the preferred alternative for stabilizing tidal shorelines.

Related Organizations: Virginia Institute of Marine Science (VIMS) Center for Coastal Resources Management, Virginia Marine Resources Commission, Virginia Institute of Marine Science (VIMS)

Resource Category: Solutions

SEE RESOURCE

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Resource

Living Shorelines: From Barriers to Opportunities

June 18, 2015

A report from Restore America's Estuaries (RAE), "Living Shorelines: From Barriers to Opportunities," provides a national assessment of institutional barriers that are preventing broader use of living shorelines, and gives recommendations and strategies for progress.

See all relevant resources!

Put the power in your hands
Clearinghouse

- Living Shorelines Initiative - Virginia
- Living Shorelines: From Barriers to Opportunities
- Coastal Resources Management

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ENERGY



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FILTER BY JURISDICTIONAL FOCUS
Select local, state, regional, or national to filter this list

☒ LOCAL ☐ NATIONAL ☐ REGIONAL ☐ STATE

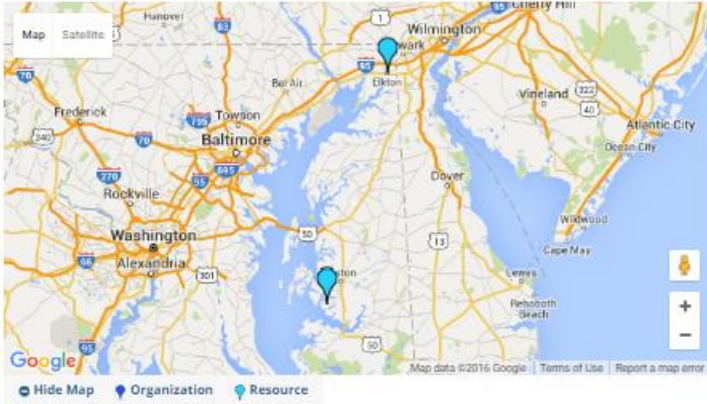
FILTER BY STATES IMPACTED
Select states to filter this list

Maryland

SEARCH BY KEYWORD

Living Shorelines **APPLY FILTER**

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Resource

Oxford, Maryland Stormwater Management and Shoreline Protection Fund, Ordinance 1403
May 13, 2014

On May 13, 2014 the town of Oxford, Maryland adopted a pioneering ordinance to create a Stormwater Management and Shoreline Protection (SMSP) Fund. Oxford commissioners unanimously agreed to increase the town's property tax rate in order to collect fees for the maintenance, enhancement, improvement and repair of the Town's stormwater management and shoreline protection improvements, facilities and systems. The fund will raise approximately \$100,000 per year to help mitigate ongoing and increasing impacts from flooding throughout the community.

Related Organizations: University of Maryland

Resource Category: Law and Governance

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Resource

A Method to Assess Climate-Relevant Decisions: Applications in the Chesapeake Bay (External Review Draft)

Average Rating
★★★★☆

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ECOSYSTEMS



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WATER

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While not addressing climate change or sea level rise directly, Oxford's fund will have the capacity to address coastal flood risks from tidal events, storm surges, and sea level rise through shoreline protection.

Creation of a the SMSP Fund will have a dedicated budget for maintenance of the current infrastructure and a long-term capital improvement plan addressing both current and future infrastructure improvements and upgrades. This infrastructure includes ditches, swales, culverts, drains, outfalls, tide gates, storage areas, bulkheads, living shorelines and other structures placed to control water levels.

The ordinance was established after a stormwater and flood risk study was conducted for the town. This year-long project was funded by the National Wildlife Foundation and was a collaborative effort between the University of Maryland Environmental Finance Center, the Chesapeake Bay Foundation, and Green. A chief recommendation of the study was to create a stormwater and shoreline protection fund.

Publication Date: May 13, 2014

Related Organizations:

- University of Maryland

Sectors:

- Coastal
- Land use and built environment



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3. A Stormwater Management and Shoreline Protection Fund ("SMSP Fund") is established to permit the city and land within the town by addressing stormwater management, controlling flooding, and to protect the natural environment. The purpose of the Fund is to ensure sufficient funds to cover the costs of designing, developing, improving, operating, maintaining and monitoring the town's stormwater management system and dredging and shoreline protection improvements.

Click here to go to the original source

Resource

Climate Ready Boston

June 1, 2016

The City of Boston commissioned the *Climate Ready Boston* report to create a baseline understanding of how Boston will be influenced by climate change that can be used for comprehensive planning and generating solutions for resilient infrastructure in the short and long-term. The report uses various emissions scenarios to create an array of projections for how climate change will affect Boston throughout the century.

Related Organizations: City of Boston, Massachusetts, [Boston Green Ribbon Commission](#)

Resource Category: Assessments

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Resource

Potential Increases in Hurricane Damage in the United States: Implications for the Federal Budget

June 2016

As requested by the Ranking Member of the Senate Committee on the Budget, this report analyzes the relationship between climate change and increased hurricane damage. In its analysis, CBO estimates annual federal spending for relief and recovery as a percentage of expected hurricane damage. It identifies three different strategies to help reduce the burden on federal aid: limiting greenhouse gas emissions, shifting more costs to state and local governments and private entities, and investing in structural changes to reduce vulnerability to hurricanes. The report includes projections of hurricane damage for 3 benchmark years: 2025, 2050, and 2075. It also explains the methodology of how the Congressional Budget Office (CBO) arrived at such projections. The strategies outlined in the report are then evaluated based on feasibility and expected level of success.

Related Organizations: Congressional Budget Office

Resource Category: Assessments

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Resource

Adaptation Case Study and Information Exchange

Developed under the
initiative, the Adaptation
adaptation strategies
interactive map linking
drinking water, waste
as the corresponding

Related Organizations:

Resource Category: Solutions

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Potential Increases in Hurricane Damage to the United States: Implications for the Federal Budget

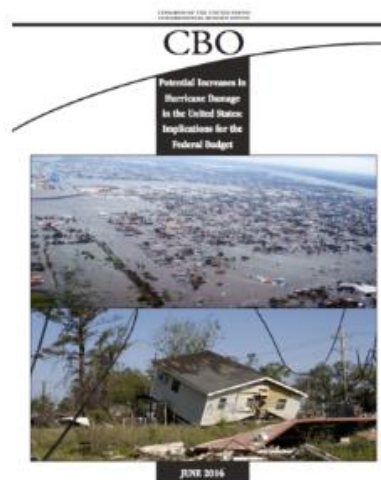
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This report estimates the future cost of hurricane damages to the federal government by examining the two main factors contributing to greater projected levels of hurricane damage: climate change and coastal development. Climate change affects hurricane damage indirectly through sea-level rise, as rising seas promote larger storm surges that stretch farther inland. Additionally, the increasing coastal development puts more assets at risk. The report finds that U.S. counties classified as susceptible to hurricane damage grew 22 percent faster than the national average (Page 4). As a result, hurricanes of similar force today cause much higher levels of damage on areas for no other reason than because there are more assets in their path.

The CBO calculates future hurricane damage by first identifying the four different conditions that contribute to hurricane damage: Sea levels in different states, frequency of hurricanes of various intensities, population in coastal areas, and per capita income in coastal areas. The report points out that sea levels and frequency of hurricanes are a product of climate change, while population and per capita income in coastal areas are attributes of coastal development. Both climate change and coastal development can operate independently as well as in synchrony.

The CBO calculates expected hurricane damage under the current measurements of sea levels, hurricane frequency, population, and per capita income in coastal areas. The reference case depicts Florida as contributing 55% of the total damage in CBO's reference case, followed by Texas at 13% (For a more in-depth analysis of the CBO's reference case, refer to Figure 1 on page 6). The CBO then projects how the four factors will change over time to devise new conditions for years 2025, 2050, and 2075. The CBO uses these new conditions to calculate the expected damages for these benchmark years.

Future trends of federal spending in response to hurricane damage are estimated and described in the report. Utilizing estimates produced by the National Oceanic and Atmospheric Administration, from 2005-present, CBO identified that federal spending made up an average of 60% of hurricane damage assistance. Federal spending is expected



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Potential Increases in Hurricane Damage in the United States: Implications for the Federal Budget

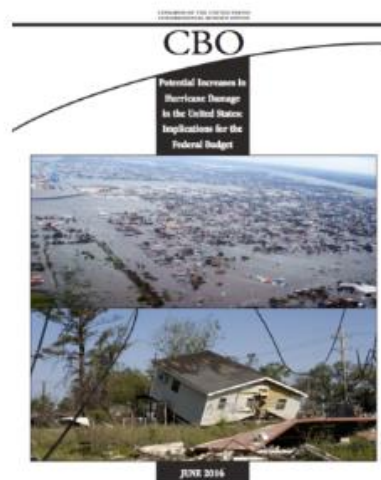
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Select the sectors tab to find sector portals

Sectors

This page allows you to explore the resources in the Adaptation Clearinghouse by sector. Each sector page includes curated lists of resources on adaptation efforts in specific sectors.

Sectors covered include agriculture and food, business, coastal, ecosystems, emergency preparedness, energy, land use, public health, transportation, water, and more.

These pages provide easy-to-navigate lists of resources to help policymakers assess vulnerabilities, develop plans, and respond to climate change impacts in that sector. These pages also allow users to see resources that are most popular among adaptation experts.

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All Sectors



Agriculture & Food

Climate change is changing our assumptions about agriculture and food production. This page includes resources to help policymakers adapt to climate change impacts to the agricultural sector and to food systems.

If you are interested in the agricultural and food sectors, please sign up for email updates to receive monthly notifications about all of the latest agricultural and adaptation resources.

VIEW SECTOR



Business

This page includes resources to help policymakers and businesses understand, plan, and prepare for the impacts of climate change to the business sector, including risks to operations, investments, and profits. Resources describe how climate change consideration in business decisions can promote long-term economic health.

If you are interested in adaptation efforts in the business sector, please sign up for email updates to receive monthly notifications about all the latest business resources.

VIEW SECTOR



Coastal

Climate change will have profound effects on resources, communities, and infrastructure in coastal regions. This page includes resources to help policymakers understand, plan, and prepare for the impacts of climate change to the coastal sector, including coastal communities and infrastructure, and coastal and marine ecosystems. Tabs include climate science & tools, plans, planning guides, funding programs, and other resources tailored for policymakers working in the coastal sector.

If you are interested in coastal issues, please sign up for email updates to receive monthly notifications about all the latest coastal resources.

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Ecosystems

This page includes resources to help policymakers understand, plan, and prepare for the impacts of climate change on biodiversity and ecosystems including fish and fisheries, forests, oceans, and wildlife. It also includes resources tailored for natural resource managers pursuing land management and conservation strategies to prepare for the impacts of climate change.

If you are interested in biodiversity and ecosystems issues, please sign up for email updates to receive monthly notifications about all the latest resources in this sector.

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If you are interested in biodiversity and ecosystems issues, please sign up for email updates to receive monthly notifications about all the latest resources in this sector.

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Emergency Preparedness

This page includes resources to help policymakers assess and adapt emergency preparedness strategies in the face of climate change impacts.

If you are interested in emergency preparedness issues, please sign up for email updates to receive monthly notifications about all the latest resources on adaptation and emergency preparedness.

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Energy

This page includes resources to help policymakers understand, plan, and prepare for impacts of climate change to the energy sector, ranging from changes in energy demand to preparing for threats to energy infrastructure.

If you are interested in adaptation efforts in the energy sector, please sign up for email updates to receive monthly notifications about all the latest energy resources.

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Land Use

Land use involves decisions about the use and development of land. Impacts from climate change (increasing flooding, drought, and urban heat) will affect how and where communities build. This page includes resources on how to address climate change impacts to the built environment and different land uses.

If you are interested in land use issues, please sign up for email updates to receive monthly notifications about all the latest resources and adaptation and land use.

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Public Health

This page includes resources to help policymakers understand, plan, and prepare for the impacts of climate change on public health systems and vulnerable populations, including planning guides, reports on public health impacts, and best practices for public health response.

If you are interested in adaptation in the public health sector, please sign up for email updates to receive monthly notifications about all of the latest public health resources.

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Transportation

Climate change will challenge the ability of transportation agencies to maintain a state of good repair of transportation assets, but many are thinking proactively about how to plan for these impacts and design transportation systems to be more prepared for and resilient to climate change. This page includes resources to help policymakers understand, plan, and prepare for the impacts of climate change to transportation systems and assets.

[VIEW SECTOR](#)

Water

This page includes resources to help policymakers understand, plan, and prepare for impacts of climate change to the water sector including plans, policies, and tools.

If you are interested in adaptation efforts in the water sector (including efforts to adapt to changes in water supply, water quality, and impacts to water infrastructure), please sign up for email updates to receive monthly notifications about all the latest water resources.

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Public Health Resources

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Popular Public Health Resources

The resources below are popular among Clearinghouse users. Users may influence this list by rating resources. Just click on a resource and assign it a 1 (low) to 5 (high) star rating. The highest ratings (4 and 5) should be granted to resources that you have found useful in your own work.

5 results are shown below.

SORT BY ▾

Resource

Oregon Climate and Health Profile Report

September 25, 2014

The 'Oregon Climate and Health Profile Report' from the Oregon Health Authority (OHA) Public Health Division outlines the health risks that may increase with climate change, and describes the populations who are most vulnerable to these risks in Oregon. The report presents a broad, statewide assessment of public health demographic, geographic and occupational vulnerability to climate change risks.

Related Organizations: Oregon Health Authority Public Health Division

Resource Category: Assessments

Average Rating



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Resource

CDC: Assessing Vulnerability to Climate Change - A Guide for Health Departments

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5 results are shown below.

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Resource
On September 10, 2014
The Oregon Climate and Public Health Division of the Oregon Health Authority (OHA) describes the population's vulnerability to climate change, and assesses the potential vulnerability to climate change risks. The report presents a broad, statewide assessment of public health.

Related Organizations: Oregon Health Authority Public Health Division

Resource Category: Assessments

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Resource

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using these
tabs



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Resource

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Popular Resources shows
sector specific resources rated
highly by AC users



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Learn more about
health and adaptation
from the U.S. Climate
Resilience Toolkit



U.S. Climate
Resilience
Toolkit

(EDIT)

The “Basics”
tab provides
an intro to
the sector
and
adaptation

Introduction to the Public Health Sector

(edit)

Climate change impacts are felt across the board, with disproportionate impacts on particularly vulnerable populations, including children, low-income communities, the homeless, and communities of color. This resource provides a better understanding of how climate change will affect the public health sector.

Resource

Climate Change: Integrating Public Health into Climate Action Planning

February 2012

From the California Department of Public Health, this report primarily addresses key GHG emissions reduction efforts in Climate Action Plans (CAPs) that have public health co-benefits. This guidance can be useful for any public health agency, even outside of California, planning for climate impacts.

Related Organizations: California Department of Public Health

Resource Category: Planning

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Resource

CDC: Assessing Vulnerability to Climate Change - A Guide for Health Departments

July 16, 2014

This guidance document from the Center for Disease Control (CDC) Climate and Health Program Technical Report Series is designed to support health departments in assessing local vulnerabilities to health hazards associated with climate change.

Related Organizations: Centers for Disease Control (CDC)

Authors: Arie Ponce Manangan, Christopher K. Uejio, Shubhayu Saha, Paul J. Schramm, Gino D. Marinucci, Jeremy J. Hess, George Luber

Resource Category: Assessments

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Resource

Minnesota Climate and Health Profile Report

February 2015

The Minnesota Department of Health (MDH) Climate and Health Profile Report 2015, “An Assessment of Climate Change Impacts on the Health & Well-Being of Minnesotans,” provides a comprehensive assessment of climate change impacts and potential health implications for the state. In

Average Rating



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Public Health

This tab includes

Resources and

by plan

Within the
other tabs
explore by
adaptation
planning
stage

that discuss adaptation options in the public health sector.

g, but can be sorted by date or title. Apply additional filters to narrow the
functional focus.

(edit)

71 results are shown below.

PLAN TYPE

☐ PLANNING☐ PLANS (OTHER)☐ PUBLIC HEALTH PLANNING

APPLY ADDITIONAL FILTERS ▾

SORT BY ▾

Resource

Cleveland, Ohio Climate Action Plan: Building Thriving and Healthy Neighborhoods

October 2013

Cleveland Mayor Frank G. Jackson's Office of Sustainability convened a 50-member Climate Action Advisory Committee with representatives of leading organizations from the commercial, industrial, educational, government, and non-profit sectors to inform and create Cleveland's Climate Action Plan (CAP). 33 actions are outlined in the plan, within 6 focus areas including: Energy Efficiency and Green Building; Advanced and Renewable Energy; Sustainable Mobility; Waste Reduction and Resource Conservation; Land Use and Clean Water; and Community Engagement and Public Health.

Related Organizations: City of Cleveland, Office of Sustainability**Resource Category:** Planning

SEE RESOURCE

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Average Rating



Resource

The Oregon Climate Change Adaptation Framework

December 2010

The result of a collaborative effort between Oregon's state agencies, and with support from the Oregon Climate Change Research Institute, this report provides a framework for the continued development of strategies and plans to address future climate conditions in the state.

Related Organizations: State of Oregon, Oregon Climate Change Research Institute (OCCRI)**Resource Category:** Planning

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Public Health Sector Plans

(edit)

This tab includes federal, state, and local plans that discuss adaptation options in the public health sector.

Resources are automatically presented by rating, but can be sorted by date or title. Apply additional filters to narrow the list by plan type, impact, region, state, or jurisdictional focus.

2 results are shown below.

FILTER BY REGIONS IMPACTED

Filter by Regions Affected

- ☐ COASTAL STATES ☐ GREAT LAKES ☐ GREAT PLAINS ☐ GULF COAST ☐ MID-ATLANTIC
☒ MIDWEST ☐ NEW ENGLAND ☐ NORTHEAST ☐ PACIFIC NORTHWEST ☐ SOUTHEAST
☐ SOUTHWEST ☐ U.S. TERRITORIES

PLAN TYPE

- ☐ PLANNING ☐ ADAPTATION PLAN ☐ PLANS (OTHER) ☒ PUBLIC HEALTH PLANNING

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Resource

Cook County, Illinois Climate Change and Public Health Action Plan

2012

The Cook County Climate Change and Public Health Action Plan is a strategic plan to help Cook County adapt to predicted public health impacts resulting from climate change. The plan identifies five areas of concern in Cook County: extreme heat and weather; food-borne illness; vector-borne illness; water quality and quantity and waterborne diseases; and air pollution and allergens - which are expected to be more prevalent as climate change continues and extreme weather events become more common. This report was sponsored by the Chicago Physicians for Social Responsibility.

Related Organizations: Chicago Physicians for Social Responsibility

Resource Category: Planning

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Resource

Michigan Climate and Health Adaptation Plan (MI-CHAP) 2010-2015 Strategic Plan

January 18, 2011

As a result of 2009 funding from ASHTO, in January 2011 the Michigan Department of Community Health (MDCH) released their first strategic adaptation plan to "prepare the Public Health System in Michigan to address the public health consequences of climate change in a coordinated manner."

Related Organizations: Michigan Department of Community Health

Authors: Lorraine Cameron, Martha Stanbury, Robert Wahl, Susan Manente

Resource Category: Planning

And
apply
filters to
narrow
the list

POPULAR RESOURCES

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SCIENCE AND TOOLS

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The final tab will allow you to see all resources related to the sector

All Public Health Resources by Region or State

(edit)

This tab includes all resources relevant to adaptation in the public health sectors. Apply filters to view resources for a particular region or state. Alternatively, use the map to explore public health resources.

Resources are automatically presented by date, but can also be sorted by rating and title.

314 results are shown below.

SEARCH BY KEYWORD

Enter a keyword

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Resource

States at Risk: America's Preparedness Report Card

January 20, 2016

America's Preparedness Report Card is a national analysis of state level preparedness for climate change weather-related risks for all 50 states. Climate Central and ICF International identified states with considerable and significantly increasing levels of five major climate threats, including extreme heat, drought, wildfires, inland and coastal flooding, with an emphasis on risks to vulnerable populations. They also assessed climate change preparedness actions that each of the states are taking for their current and future projected impacts. The assessment covered five major sectors of society and the economy through 2050, including: transportation, energy, health, water, and communities. Ultimately, the Report Card assigns grades to each state based on what it has already done, as compared to its threat levels and to other states.

Related Organizations: ICF International, Climate Central

Resource Category: Assessments

POPULAR RESOURCES

Adaptive Transportation Projects and Design Guidelines

[\(edit\)](#)

These resources provide examples of physical adaptation projects in the transportation sector as well as other examples related to project design, such as design guidelines that incorporate climate change projections. Many of the examples in this list are provided by case studies developed through a cooperative agreement with the Federal Highway Administration.

Resources are automatically presented by rating, but can be sorted by date or title. Apply additional filters to narrow the results by region, state, climate impacts, jurisdictional focus, or transportation lifecycle stage.

Some sectors have
sector specific tabs

[PLANNING GUIDES](#)[POLICY](#)[CASE STUDIES](#)[PROJECT DESIGN](#)[OPERATIONS &
MAINTENANCE](#)[ORGANIZATIONS](#)[GEOGRAPHIC SEARCH](#)

53 results are shown below.

DESIGN OR DECISION-MAKING STAGE

Narrow the resources by stage of the transportation decision-making cycle that are related to project design.

☐ COST-BENEFIT ANALYSIS☐ DESIGN STANDARDS AND REQUIREMENTS☐ NEPA/ENVIRONMENTAL REVIEW☐ PROJECT-LEVEL DESIGN AND CONSTRUCTION

SEARCH BY KEYWORD

[APPLY FILTER](#)[APPLY ADDITIONAL FILTERS](#)[SORT BY](#)

Resource

Rebuild of Highway A1A in Fort Lauderdale

December 2015

After Hurricane Sandy washed out a segment of the state highway, the Florida Department of Transportation ("FDOT") and the City of Fort Lauderdale rebuilt a portion of the A1A highway ("A1A") to be more resilient to future impacts. The redesigned highway segments includes several different features that will increase the highway's resilience to future flooding and erosion and will also make the city more walkable and bikeable:

Related Organizations: Florida Department of Transportation, City of Fort Lauderdale, Florida

Resource Category: Solutions

[SEE RESOURCE](#)[ADD TO MY RESOURCE LIST](#)

Average Rating



Resource

Port Authority of New York and New Jersey Engineering Department Manual - Climate Resilience Design Guidelines

Average Rating



And
filters



TURN OFF EMAIL
NOTIFICATIONS

Water

This page includes resources to help policymakers understand, plan, and prepare for impacts of climate change to the water sector including plans, policies, and tools.

If you are interested in adaptation efforts in the water sector (including efforts to adapt to changes in water supply, water quality, and impacts to water infrastructure), please sign up for email updates to receive monthly notifications about all the latest water resources.

The water sector page is powered by the **EPA's Climate Ready Water Utilities Toolbox** and other water resources found in the Adaptation Clearinghouse. The CRWU Toolbox was integrated into the Adaptation Clearinghouse in November 2015.

SHOW LESS



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We also worked with our fantastic partners to help develop content

Water Resources

POPULAR RESOURCES

WATER BASICS

SCIENCE & TOOLS

PLANS

PLANNING GUIDES

EDUCATION &
COMMUNICATION

LAW & POLICY

Climate Ready Water Utilities

(edit)

Climate Ready Water Utilities (CRWU) is an initiative of the Environmental Protection Agency (EPA) to provide water sector utilities (drinking water, wastewater, and stormwater utilities) with the practical tools, training, and technical assistance needed to adapt to climate change. The resources below are part of the CRWU initiative.

15 results are shown below.

SEARCH BY KEYWORD

Enter a keyword

APPLY FILTER

SORT BY ▾

POPULAR RESOURCES

WATER BASICS

Climate Ready Water Utilities

(edit)

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15 results are shown below.

KEYWORD

word

APPLY FILTER

SORT BY

LICITY

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MONITORING

CLIMATE READY WATER UTILITIES

CLIMATE READY ESTUARIES

DROUGHT

GREEN INFRASTRUCTURE

ORGANIZATIONS

GEOGRAPHIC SEARCH

Learn more about CRWU



LEARN MORE

(EDIT)

Resource

Adaptation Case Study and Information Exchange

Developed under the U.S. Environmental Protection Agency (EPA) Climate Ready Water Utilities (CRWU) initiative, the Adaptation Case Study and Information Exchange is a website featuring climate change adaptation strategies that water sector utilities are deploying across the country. The website has an interactive map linking to case studies produced by the EPA. Each point on the map represents a drinking water, wastewater, or combined utility that provides the climate threats facing the utility, as well as the corresponding adaptation measures that the utility considered for implementation.

Related Organizations: U.S. Environmental Protection Agency (EPA)

Resource Category: Solutions

SEE RESOURCE

ADD TO MY RESOURCE LIST

Resource

Sustainable Water Infrastructure Website

May 2016

The Sustainable Water Infrastructure Website, created by the U.S. Environmental Protection Agency, consists of a collection of resources relating to sustainable water infrastructure (SWI). The website aims to educate users on the variety of components that make up sustainable water infrastructure, and to provide data and tools to help state and local officials implement SWI.

Related Organizations: U.S. Environmental Protection Agency (EPA)

Resource Category: Planning

SEE RESOURCE

ADD TO MY RESOURCE LIST

Resource

Climate Resilience Evaluation and Tool Development 2014

And even migrated federal databases into AC2.0

Networks

Network pages in the Adaptation Clearinghouse are designed to help you find the reports, case studies, model laws, and examples most relevant to their work – a task that is becoming even more essential with the growing number of adaptation resources produced every week.

Join networks to locate and share relevant resources rated by expert users with others working in your field or area of practice.

Want to create a network to share resources in the Adaptation Clearinghouse and on your own website? Find out why organizations like the Urban Sustainability Directors Network, the American Society of Adaptation Professionals, and the EPA partner with us.

Select the
networks tab to
explore existing
network portals

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[SUBMIT A RESOURCE](#)

My Networks

Local Government
Professionals



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State Government
Professionals



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The ASAP Network
Portal



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Additional Networks



Georgetown Climate Center

The Georgetown Climate Center created and maintains the Adaptation Clearinghouse. This network page is dedicated to highlighting resources in the Clearinghouse that have been

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Local Government Professionals

The Local Government Professionals Portal is designed to help local officials in their efforts to prepare for the impacts of climate change. Users can find, rate, and share the adaptation resources that are aimed at and most useful to local government officials. It was developed in collaboration with the Urban Sustainability Directors Network (USDN) and features resources developed by USDN and its members.

[READ MORE](#)

Network pages function similar to sector pages, but have additional features

Network Resources & Activity

[Resources](#)[Members](#)

POPULAR RESOURCES

[LOCAL PLANS](#)[TOOLS](#)[PLANNING GUIDES](#)[ADAPTATION STRATEGIES](#)[LAWS & REGULATIONS](#)[FUNDING PROGRAMS](#)[COMMUNICATION & ENGAGEMENT](#)[EDUCATION & TRAINING](#)[MONITORING & REPORTING](#)

Highly Rated Resources

[\(edit\)](#)

This tab features resources that are rated highly by other members of the Local Government Professionals Network. Local Government Professionals members like you may influence this list by rating resources. Just click on a resource and assign it a 1 (low) to 5 (high) star rating. The highest ratings (4 and 5) should be granted to resources that you have found useful in your own work.

[APPLY ADDITIONAL FILTERS ▾](#)[SORT BY ▾](#)

Resource

ULI Returns on Resilience Webpage

May 2016

The Urban Land Institute's Returns on Resilience project features case studies on real estate developments that incorporate resilient design measures while maintaining positive business outcomes.

Related Organizations: [Urban Land Institute](#)**Resource Category:** Solutions

Network Rating

[SEE RESOURCE](#)[ADD TO MY RESOURCE LIST](#)



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You will need to join the network to see content

Resources

Members

Content in this tab may only be accessed by network members. Click on the button below to join the network.

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Related Organizations: [Urban Land Institute](#)**Resource Category:** Solutions[SEE RESOURCE](#)[ADD TO MY RESOURCE LIST](#)

Rankings will be network specific

Network Rating

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Related Organizations: [Urban Land Institute](#)**Resource Category:** Solutions[SEE RESOURCE](#)[ADD TO MY RESOURCE LIST](#)**Network Rating**

In some networks users can submit resources to be viewable automatically by the network

Networks

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Network pages
can be built
around a wide
range of user's
interests

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Local Government Professionals



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Additional Networks



Georgetown Climate Center

The Georgetown Climate Center created and maintains the Adaptation Clearinghouse. This network page is dedicated to highlighting resources in the Clearinghouse that have been

Welcome to the Adaptation Clearinghouse

– an online database and networking site that serves policymakers and others who are working to help communities adapt to climate change.

Search the Clearinghouse

SEARCH FOR: ○ RESOURCES ○ ORGANIZATIONS ○ USERS

Enter a keyword

By State

SEARCH

Select the
“Become a
Member”
button

Put the Power of the Adaptation Clearinghouse to Work for You

- Customize the Adaptation Clearinghouse to meet your needs
- Receive updates about new resources that match your interest areas
- Connect with other professionals

BECOME A MEMBER

LOGIN

Featured Sectors



COASTAL



ECOSYSTEMS



ENERGY



PUBLIC HEALTH



TRANSPORTATION



WATER

Recently Added Resources

Resource

San Francisco Bay Clean Water, Pollution Prevention and Habitat Restoration Measure

June 7, 2016

The San Francisco Bay Clean Water, Pollution Prevention and Habitat Restoration Measure was approved by the nine county San Francisco Bay Area region of California and became law on June 7, 2016. The measure implements a regional tax - approved across the nine counties - to fund coastal habitat rehabilitation programs and adaptations to sea level rise and flooding. The purpose of the measure as stated is “to protect and restore San Francisco Bay to benefit future generations by reducing trash, pollution, and harmful toxins, improving water quality, restoring habitat for fish, birds, and wildlife, protecting communities from flood, and increasing shoreline public access and recreational areas.”

Related Organizations: San Francisco Bay Restoration Authority

Resource Category: Law and Governance

Average Rating



SEE RESOURCE

LOGIN TO ADD TO MY RESOURCE LIST

Log in

EMAIL ADDRESS *

PASSWORD

The password field is case sensitive.

☐ REMEMBER ME ON THIS COMPUTER

SUBMIT

OR

 Sign in with LinkedIn

[FORGOT YOUR PASSWORD?](#)

If you had an account in the old system, you will need to reset your password

[P FOR FREE](#)

Otherwise, just fill out this form



Register

FIRST NAME

MIDDLE NAME

LAST NAME

JOB TITLE

EMPLOYER

[Click here if your employer isn't in the list](#)

EMAIL

RESOURCES YOU HAVE AUTHORED

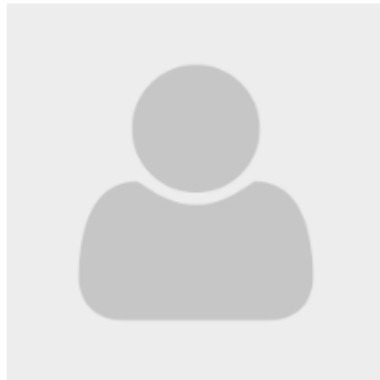
PASSWORD

CONFIRM PASSOWRD

☐ I AGREE

By creating a free Adaptation Clearinghouse account, I agree to the site's basic terms and conditions which are available [here](#). I may cancel my account at any time.

REGISTER



Melissa Deas

INSTITUTE ASSOCIATE AT THE GEORGETOWN CLIMATE CENTER

My Interest Areas

+ ADD AN INTEREST AREA

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✎ EDIT PROFILE

↗ SHARE YOUR PROFILE

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You can add more info and a picture by clicking on this button

New Resources

My Resource List

Network Activity

Authored Resources

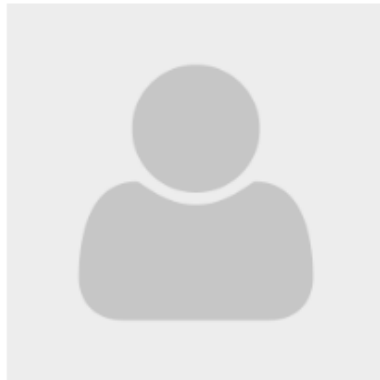
Rate Resources

+ ADD A RESOURCE

New Resources

Below is a list a resources published in the past six months that are connected to your interest areas. You may filter the list to view resources from a particular interest area by using the tabs below.

There are no new resources that match your selected interest areas. Please consider [adding new interest areas](#).



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My Interest Areas

+ ADD AN INTEREST AREA

☒ SUBSCRIBE TO EMAIL UPDATES

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↗ SHARE YOUR PROFILE

LOGOUT

And you can start getting a feed of newly published resources by adding interest areas here

New Resources

My Resources

My Resources

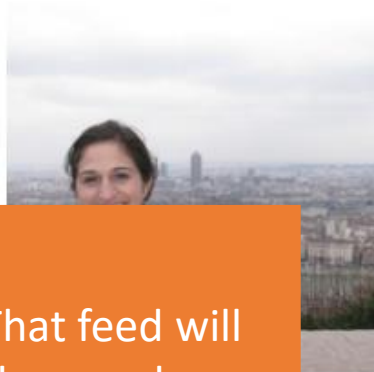
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INSTITUTE ASSOCIATE

My Networks

Local Government Professionals, State Government Professionals, The ASAP Network Portal

My Interest Areas

✕ CALIFORNIA

✕ DISTRICT OF COLUMBIA

✕ FUNDING

✕ PLANNING

✕ AT-RISK COMMUNITIES

✕ COASTAL

✕ ECOSYSTEMS

✕ ENERGY

✕ LAND USE

✕ PUBLIC HEALTH

✕ TRANSPORTATION

✕ URBAN

✕ WATER

+ ADD AN INTEREST AREA

☐ SUBSCRIBE TO EMAIL UPDATES

That feed will
show up here

New Resources

My Resource List

Network Activity

Authored Resources

Rate Resources

+ ADD A RESOURCE

New Resources

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ALL NEW RESOURCES

CALIFORNIA

DISTRICT OF COLUMBIA

FUNDING

PLANNING

VULNERABLE POPULATIONS

Resource

San Francisco Bay Clean Water, Pollution Prevention and Habitat Restoration Measure

June 7, 2016

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Average Rating



My Resource List

The queue below contains all resources that you have added to your personal "Resource List."

CLEAR LIST

SORT BY ▼

Resource

Climate Ready Boston

June 1, 2016

The City of Boston commissioned the *Climate Ready Boston* report to create a baseline understanding of how Boston will be influenced by climate change that can be used for comprehensive planning and generating solutions for resilient infrastructure in the short and long-term. The report uses various emissions scenarios to create an array of projections for how climate change will affect Boston throughout the century.

Related Organizations: City of Boston, Massachusetts, [Boston Green Ribbon Commission](#)

Resource Category: Assessments

SEE RESOURCE

REMOVE FROM MY RESOURCE LIST

Resource

Planning for a New Energy and Climate Future

2010

'Planning for a New Energy and Climate Future' was prepared by the American Planning Association in collaboration with the Environmental and Energy Study Institute, the National Oceanic and Atmospheric Administration, and the University of North Carolina Asheville. This report provides a framework for how to integrate energy and climate into the planning process, and offers strategies for communities to address energy and climate change across a variety of issues, including development patterns, transportation, and economic development. Case studies illustrate communities that have already begun taking steps in these areas. [Download the report for purchase.](#)

Related Organizations: University of North Carolina, University of North Carolina Asheville, [Environmental and Energy Study Institute \(EESI\)](#), [American Planning Association APA](#), [National Oceanic and Atmospheric Administration \(NOAA\)](#)

Authors: Suzanne Rynne, Jan Mueller, Scott Shuford

Resource Category: Planning

SEE RESOURCE

REMOVE FROM MY RESOURCE LIST

Average Rating



Resource

Massachusetts Wildlife Climate Action Tool

November 23, 2015

The Massachusetts Wildlife Climate Action Tools provides information on climate change impacts on the state's species and habitats; as well as adaptation strategies and actions based on those impacts. The online tool is focused on fish and wildlife species, forests and forestry practices, landscapes, and the potential impacts on roads and culverts), land protection, and conservation planning.

Related Organizations: Massachusetts Division of Fisheries and Wildlife, [Department of the Interior \(DOI\)](#), [Northeast Climate Science Center \(CSC\)](#), [University of Massachusetts](#), [U.S. Geological Survey \(USGS\)](#)

Resource Category: Data and tools

SEE RESOURCE

REMOVE FROM MY RESOURCE LIST

Average Rating



Any resources
you saved can
be found here

Rate Resources

Below are resources you have accessed from the Adaptation Clearinghouse. Help inform other adaptation professionals by taking a moment to rate these resources.

Resource

Adaptation Exchange

Developed by the U.S. Environmental Protection Agency (EPA), the Adaptation Exchange is a web-based platform that provides information on adaptation strategies and tools. Each resource includes a brief description, a list of related organizations, and a link to the resource.

Related



RATE THIS RESOURCE

SEE RESOURCE

Resource

Sustainable Water Infrastructure Website

May 2016

The Sustainable Water Infrastructure Website, created by the U.S. Environmental Protection Agency, consists of a collection of resources relating to sustainable water infrastructure (SWI). The website aims to educate users on the variety of components that make up sustainable water infrastructure, and to provide data and tools to help state and local officials implement SWI.

Related Organizations: U.S. Environmental Protection Agency (EPA)



RATE THIS RESOURCE

SEE RESOURCE

Resource

Climate Resilience Evaluation and Awareness Tool Version 3.0 Methodology Guide

May 2016

This guide is a supplement describing how to use the EPA's *Climate Resilience Evaluation and Awareness Tool* (CREAT) Version 3.0, a tool designed for local drinking water, wastewater, and stormwater utilities to conduct climate change risk assessments. CREAT and this guide are part of the EPA's Climate Water Ready Utilities suite of resources.

Related Organizations: U.S. Environmental Protection Agency (EPA)



RATE THIS RESOURCE

SEE RESOURCE

Resource

Resilient Midwestern Cities Improving Equity in a Changing Climate

April, 2016

Developed by the Center for American Progress, *Resilient Midwestern Cities Improving Equity in a Changing Climate* provides users with guidance on how to concurrently address climate change and equity issues by implementing climate change resiliency measures in low-income areas. The report showcases existing initiatives employed in 5 Midwestern cities, and draws out recommendations for further action.

Authors: Cathleen Kelly, Miranda Peterson, Erin Auel, Philine Qian, Gwynne Taraska

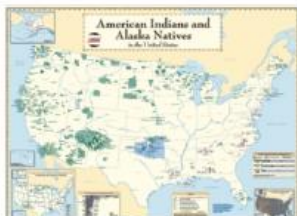
Related Organizations: Center for American Progress



RATE THIS RESOURCE

SEE RESOURCE

Coming Soon



Tribal Government Professionals

This page includes resources to help tribes and people working with tribes understand, plan, and prepare for impacts of climate change.

LEAVE NETWORK

If you are interested in tribal adaptation efforts, please join this network.



Rural

This page includes resources to help policymakers understand, plan, and prepare for impacts of climate change in rural areas and small towns.

If you are interested in rural issues, please sign up for email updates to receive monthly notifications about all the latest resources on rural adaptation.

TURN ON EMAIL NOTIFICATIONS

THE
AMERICAN
SOCIETY OF
ADAPTATION
PROFESSIONALS

JOIN NETWORK

The ASAP Network Portal

The American Society of Adaptation Professionals (ASAP) Portal gives ASAP members a platform to access, share, and rate resources. ASAP members can use this portal to find the most up-to-date catalogue of tools, information and reports on climate change adaptation. Members can also use this portal to rate resources, see what others in the ASAP network rate highly, and submit resources to share with others in the ASAP network. These ASAP network pages are tailored to serve the diverse, multidisciplinary group of adaptation professionals that are members of ASAP.



JOIN NETWORK

Equity and Social Justice

Two of the biggest challenges facing the United States - and the world - are the growing income inequalities that unfairly disadvantage large segments of the population, and climate change, which will exacerbate existing risks. The effects of climate change including rising temperatures, more polluted air, and increased extreme storms, will disproportionately affect already poor and disenfranchised people. Policymakers must find ways to focus not only on the physical impacts of climate change, but also on the ways that policies can have a differential impact on low-income and vulnerable communities.

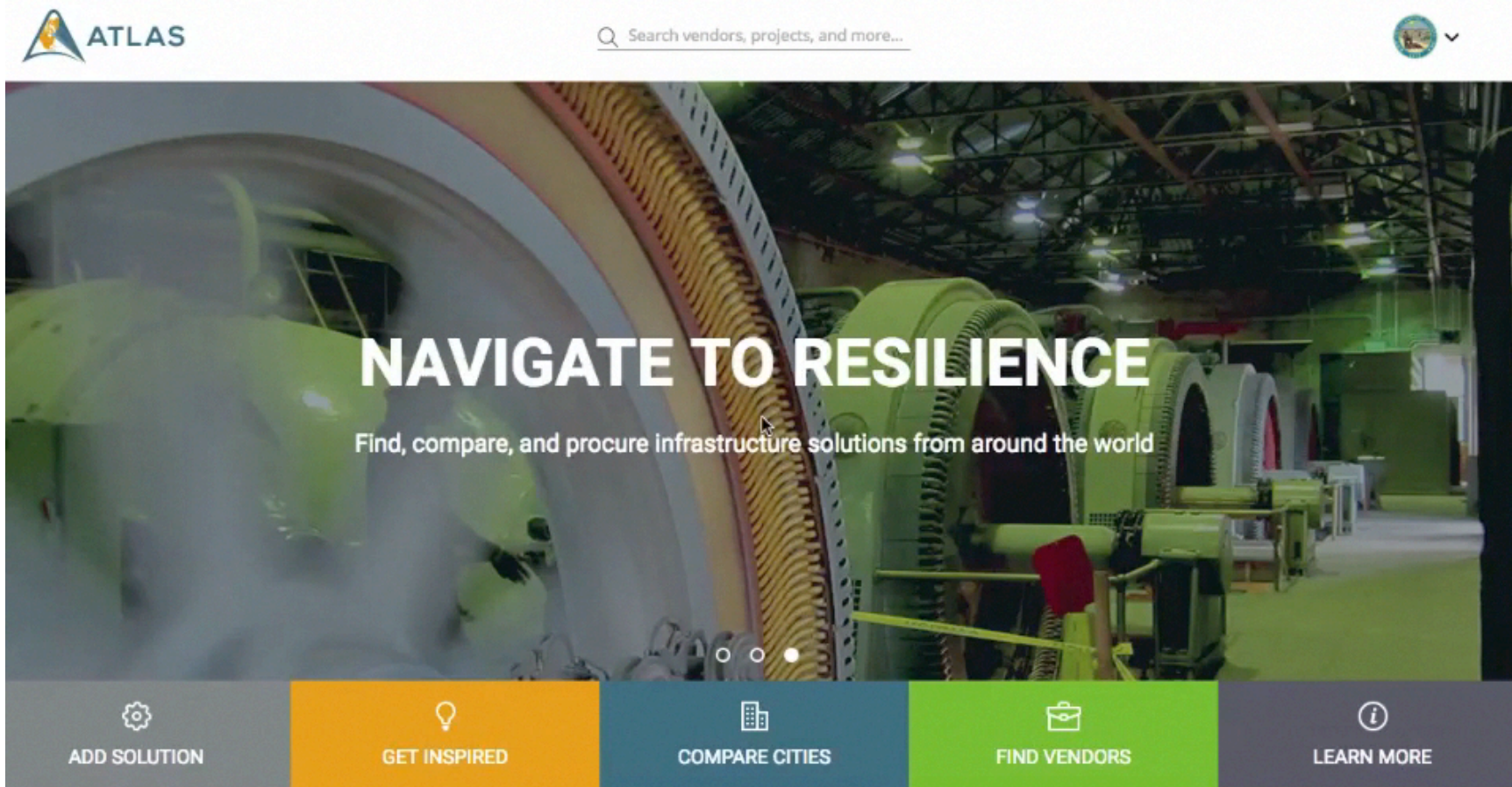
Thank you and please visit
AdaptationClearinghouse.org
to explore on your own!

Melissa Deas at deas@law.georgetown.edu with any questions

Modernizing infrastructure procurement with the **ATLAS**

Elle Hempen
elle@the-atlas.com
858-217-4415

The **Atlas** is a **learning platform & online marketplace** for resilient infrastructure solutions – allowing users to **improve project selection** while **streamlining predevelopment & procurement**.



<https://www.youtube.com/watch?v=Pj8kjLNgCg8>

The Atlas is designed to increase infrastructure investment by modernizing the way it is designed, bought, and built.

Sign-Up

Which describes you best?

**Buyer**

I am interested in buying technologies and services
to make my infrastructure more resilient.

**Vendor**

I offer resilient infrastructure technologies and
services.

Take 2 minutes to complete a free profile and
start using the Atlas to upgrade your
infrastructure at www.the-atlas.com.

Sign-Up

Introduce Yourself

We'll show you the best ideas and vendors

* First Name: * Required

* Last Name:

* Job Title:

Affiliation:

Website:

* E-mail:

Country:

Nearest City:

* Upload a photo that will be represented in your profile

Recommend using a seal or logo if possible.

What types of infrastructure systems are you building or planning to upgrade? Select all that apply.

<input type="checkbox"/> Agriculture	<input type="checkbox"/> Built Environment
<input type="checkbox"/> Coasts	<input type="checkbox"/> Emergency Response
<input type="checkbox"/> Energy	<input type="checkbox"/> Floods
<input type="checkbox"/> Smart Cities	<input type="checkbox"/> Transport
<input type="checkbox"/> Waste	<input type="checkbox"/> Water

Knowing what challenges your community is facing helps us show you the most relevant solutions. What are the most pressing environmental challenges facing your community? Select all that apply.

<input type="checkbox"/> Biodiversity Loss	<input type="checkbox"/> Coastal Floods
<input type="checkbox"/> Drought	<input type="checkbox"/> Heatwaves
<input type="checkbox"/> Infectious Disease	<input type="checkbox"/> Inland Floods
<input type="checkbox"/> Ocean Acidification	<input type="checkbox"/> Severe Storms
<input type="checkbox"/> Snow & Extreme Cold	<input type="checkbox"/> Wildfires

Do you already know what services you need to upgrade your infrastructure? If so, select all that apply.

<input type="checkbox"/> Construction	<input type="checkbox"/> Design
<input type="checkbox"/> Engineering	<input type="checkbox"/> Financing
<input type="checkbox"/> Operations	<input type="checkbox"/> Planning
<input type="checkbox"/> Technology	<input type="checkbox"/> Testing & Analytics

Share basic details about yourself so others can easily contact you on the Atlas.

Include your logo so you are easy to find.

Identify the types of systems you need to upgrade so we can identify relevant solutions for you.

Share your greatest challenges so we can connect you with other communities that look like you.

Know what type of help you need? Tell us so we can show you the most innovative companies.

What do you get by joining?

Strategic Learning

- Get inspired and identify new infrastructure solutions.
- Easily navigate a database of innovative projects built or under construction around the world based on your local priorities.

Curated Connections

- Initiate productive and specific conversations with peers from around the world. Use the safe, hassle-free space to learn from vendors, and when ready reach out to those you find most interesting.
- The Atlas does not let vendors contact cities directly, or share any of your contact information.

Improved Procurement

- Improve procurement outcomes by searching the RFP database for models, and promoting your Requests for Proposals to a wider range of national and international bidders.

Influence on Future Development

- Development priorities include improved database design, developed curation features, expanded customization options, and additional procurement functionality.
- Something else that would help you to upgrade your infrastructure? Join the community of cities working with us to build a solution to help you navigate to resilience.

These cities have already created free profiles. Join them!

- San Francisco, CA
- Los Angeles, CA
- Miami Beach, FL
- Hoboken, NJ
- Norfolk, VA
- El Paso, TX
- Atlanta, GA
- New Orleans, LA
- Denver, CO
- Oakland Park, FL
- Boston, MA
- Arlington, MA
- Hampton, VA

Conclusion

"What I need is a curated list of sustainability solutions that I can pick and choose from."

Mayor Kasim Reed, City of Atlanta (CGI America 2015)

Atlanta joined the Atlas 1 week after launch.

"I could be a PR person for Atlas. I am always trying to think of creative ways to get to a bigger – but targeted-audience. You did it for me."

Rhonda Haag, Director Sustainability and Projects, Monroe County

Monroe County joined the Atlas in September.

"The Atlas is a great tool municipalities can use to explore solutions based on their specific challenges, while providing an opportunity to build a relationship with vendors early in the project development process."

Adam Kurowski, Town of Arlington, Massachusetts

Arlington joined the Atlas in October.

Thank You!

- **To learn more about ARCCA:**
 - Visit www.arccacalifornia.org
 - Contact Julia Kim at jkim@lgc.org or (916) 448-1198 x304
- **To learn more about the tools, please visit:**
 - Cal-Adapt: cal-adapt.org and beta.cal-adapt.org
 - Adaptation Clearinghouse: adaptationclearinghouse.org
 - The Atlas Marketplace: the-atlas.com
- **Stay tuned for our next Learning Session!**