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**
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.
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

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

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

Video tour!
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 CMIPS 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 our about events and funding opportunities, read case studies and recent climate stories for California
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](http://cal-adapt.org).

**ANNUAL AVERAGES**

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

**EXTREME HEAT**

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

**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.

* ... many more tools forthcoming (slide 17)*
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.
High scores indicate vulnerable “hotspots” based on sociodemographic and environmental/pollution indices, according to CalEnviroScreen 2.0
Census Tract ID 6019000400

**Days Above 106.7°F**

**Historical observed data**

- **Projected data**
- **Scale: up to 120 days/year**

**Locally defined extreme heat threshold**

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

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

**Number of Extreme Heat Days**

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:

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 (99th 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 (2060 – 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 z. Use slider below the chart to zoom and pan different time periods in the chart.

RCP 4.5 (continued “BAU” growth at 2%/yr)
Dramatically longer extreme heat season by end of century.

Wider season, higher extremes

Hottest days: 113 to 131 degrees F
Delta Flooding: 0.0 m sea level rise + extreme storm event

Infrastructure:
- McDonald Island
- Sherman Island
Delta Flooding: \textbf{0.5 m} sea level rise + extreme storm event

**Infrastructure:**
- McDonald Island
- Sherman Island
Delta Flooding: 1.0 m sea level rise + extreme storm event

Infrastructure:
- McDonald Island
- Sherman Island
Delta Flooding: 1.41 m sea level rise + extreme storm event

Infrastructure:
- McDonald Island
- Sherman Island

Maximum inundation depth during a likely 100 year storm and 1.41 m SLR

Legend:
- 0.00 - 0.50 m
- 0.51 - 1.00 m
- 1.01 - 1.50 m
- 1.51 - 2.00 m
- 2.01 - 2.50 m
- 2.51 - 3.00 m
- 3.01 - 3.50 m
- 3.51 - 4.00 m
- 4.00+ m
CALIFORNIA ENERGY COMMISSION

LOCAL CLIMATE SNAPSHOTs

Temperature
Projected changes in annual average temperatures for the high emissions scenario.

MERCED COUNTY AREA
The information in the chart below corresponds to the selected area on the map (outlined in orange).

Historical Average: 60.7 °F
Low-Emissions Scenario: 64.4 °F +3.7 °F
High-Emissions Scenario: 67.0 °F +6.3 °F

Observed and Projected Temperatures

NOW SHOWING: TEMPERATURE PROJECTIONS
You are now viewing the projected change in annual average temperatures across California under a high carbon emissions scenario (A2). The map above shows the projected difference in temperature between a baseline time period (1961-1990) and an end of century period (2070-2090).
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.
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*)
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

http://climatechange.ca.gov/climate_action_team/reports/climate_assessments.html
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

support@cal-adapt.org

DISCLAIMER
A staff member of the California Energy Commission prepared this presentation. As such, it does not necessarily represent the views of the Energy Commission, its employees, or the State of California. The Energy Commission, the State of California, its employees, contractors and subcontractors make no warrant, express or implied, and assume no legal liability for the information in this presentation; nor does any party represent that the uses of this information will not infringe upon privately owned rights. This presentation has not been approved or disapproved by the Energy Commission nor has the Commission passed upon the accuracy or adequacy of the information in this presentation.
• 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
AC2.0 FUNDERS

MacArthur Foundation

THE KRESGE FOUNDATION

U.S. Department of Transportation Federal Highway Administration

The Rockefeller Foundation
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  ○ ALL

Enter a keyword

Search

Recently Added Resources

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

Featured Sectors

- COASTAL
- ECOSYSTEMS
- ENERGY
- PUBLIC HEALTH
- TRANSPORTATION
- WATER
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– an online database and networking site that serves policymakers and others seeking information on adaptation to climate change.

See the most recently published resources here

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SEE RESOURCE  LOGIN TO ADD TO MY RESOURCE LIST
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Search the Clearinghouse

Enter in a key word and hit “search”

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Average Rating: ★★★☆☆☆

SEE RESOURCE  LOGIN TO ADD TO MY RESOURCE LIST
Search Results for "Living Shorelines"

33 results

SEARCH BY KEYWORD

Living Shorelines

APPLY FILTER

APPLY ADDITIONAL FILTERS  ▼

SORT RESULTS BY ▼

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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See all relevant resources!
Search Results for "Living Shorelines"

33 results

Apply filters

Search by Keyword

Living Shorelines

Apply additional filters

Filter by...
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- SECTORS
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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

Featured Sectors

- COASTAL
- ECOSYSTEMS
- ENERGY
- PUBLIC HEALTH
- TRANSPORTATION

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.
Apply as many filters as needed to get the specific results you want.
Oxford, Maryland Stormwater Management and Shoreline Protection Fund, Ordinance 1403

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.

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 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 Bayside Study was conducted for the town. This year-long project was conducted by the Maryland Biological and Wildlife Foundation and was a collaborative effort involving the University of Maryland Environmental Finance Center, the Chesapeake Bay Foundation, the Chesapeake Bay Program, and the Nature Conservancy. A chief recommendation of the study was the creation of a shoreline protection fund.

Publication Date: May 13, 2014

Related Organizations:
- University of Maryland

Sectors:
- Coastal
- Land use and built environment
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Click here to go to the original source
Save a resource by adding to your own “clearinghouse”.
Potential Costs in Hurricane Damage

Abstract: Implications for the Federal Government

As requested by Senator Grassley, chairman of the Senate Committee on the Budget, this report analyzes the potential economic impacts of 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.

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 8). 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 to increase, although the CBO’s projections assume that the government’s response remains constant. The CBO concludes that the combination of increased hurricane damage and higher federal spending on recovery will likely lead to a significant rise in federal costs.
Potential Increases in Hurricane Damage in the United States: Implications for the Federal Budget

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.

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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.

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 the latest agricultural and adaptation resources.

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.

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.

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.
Choose the sector you want to explore:

- **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. 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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- **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.

- **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.

- **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 and 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.

- **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 efforts in the public health sector, please sign up for email updates to receive monthly notifications about all the latest public health resources.

- **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.

- **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.
If you want occasional updates select this button.
You can explore the sector portal using these tabs.
Popular Resources shows sector specific resources rated highly by AC users.
The “Basics” tab provides an intro to the sector and adaptation.
Within the other tabs explore by adaptation planning stage.
And apply filters to narrow the list.

Public Health Sector Plans
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.

<table>
<thead>
<tr>
<th>FILTER BY REGIONS IMPACTED</th>
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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

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 Marenite
Resource Category: Planning
The final tab will allow you to see all resources related to the sector.
Some sectors have sector specific tabs and filters.
We also worked with our fantastic partners to help develop content.
And even migrated federal databases into AC2.0
Select the networks tab to explore existing network portals.
Network pages function similar to sector pages, but have additional features.
You will need to join the network to see content.

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

JOIN NETWORK
Rankings will be network specific.
In some networks users can submit resources to be viewable automatically by the network.
Network pages can be built around a wide range of user’s interests

Network pages in the Adaptation Clearinghouse are designed to help practitioners quickly 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.

My Networks

Local Government Professionals

State Government Professionals

The ASAP Network Portal

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 developed around the Georgetown's program's key themes of education, research, policy, and outreach.
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.

Select the “Become a Member” button
If you had an account in the old system, you will need to reset your password.
Register

FIRST NAME: __________________________
MIDDLE NAME: ________________________
LAST NAME: __________________________

JOB TITLE: ____________________________
EMPLOYER: __________________________

EMAIL: ________________________________

RESOURCES YOU HAVE AUTHORED:

PASSWORD: ____________________________
CONFIRM PASSWORD: __________________

☐ 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

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

New Resources
Below is a list of 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.
And you can start getting a feed of newly published resources by adding interest areas here.
And you can start getting a feed of newly published resources by adding interest areas here. That feed will show up here.
Any resources you saved can be found here.
You can also rate resources you viewed here

<table>
<thead>
<tr>
<th>Resource</th>
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<tr>
<td>Adaptation Clearinghouse Exchange</td>
<td>You can also rate resources you viewed here</td>
</tr>
<tr>
<td>Sustainable Water Infrastructure Website</td>
<td>You can also rate resources you viewed here</td>
</tr>
<tr>
<td>Climate Resilience Evaluation and Awareness</td>
<td>You can also rate resources you viewed here</td>
</tr>
<tr>
<td>Tool Version 3.0 Methodology Guide</td>
<td>You can also rate resources you viewed here</td>
</tr>
<tr>
<td>Resilient Midwestern Cities Improving Equity</td>
<td>You can also rate resources you viewed here</td>
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<tr>
<td>in a Changing Climate</td>
<td>You can also rate resources you viewed here</td>
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**Adaptation Clearinghouse Exchange**

You can also rate resources you viewed here

**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)

**Climate Resilience Evaluation and Awareness**

Tool Version 3.0 Methodology Guide

You can also rate resources you viewed here

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)

**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 3 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
Tribal Government Professionals

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

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.

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.

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

https://www.youtube.com/watch?v=Pj8kJLngCg8
Take 2 minutes to complete a free profile and start using the Atlas to upgrade your infrastructure at www.the-atlas.com.
Sign-Up

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.

www.the-atlas.com
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
“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

• Stay tuned for our next Learning Session!