



# Getting the Job Done: How Western US Cities are Preparing for Climate Change

A Western Adaptation Alliance  
Symposium

Concurrent  
Session 6 - Spruce

# The Western Adaptation Alliance

- A “Learning Network” of Western Cities
- Focused on Urban Climate Adaptation for Arid/Semi-Arid Regions
- Initiated in 2010/11 as a USDN Regional Network
- Initial funding from a USDN Innovation Fund Grant in early 2011



# The Western Adaptation Alliance

- Arizona
  - Flagstaff
  - Phoenix
  - Tucson
- Colorado:
  - Aspen
  - Boulder (City & County)
  - Denver
  - Fort Collins
- Nevada
  - Las Vegas
- New Mexico
  - Santa Fe
- Utah
  - Salt Lake City
  - Park City



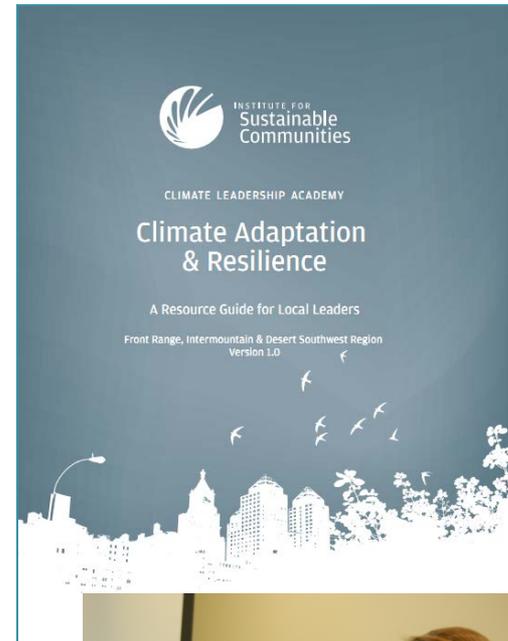
Collectively, these 11 cities represent 25% of the population of these 4 states, but anchor 75% of the combined gross state product

# Alliance Objectives

- Regional Collaboration
  - Recognize and utilize commonalities across the region
  - Collaborate regionally when appropriate
  - Embrace and understand regional differences
  - Respect each other and leverage shared knowledge and collective skills
- Local Application
  - Plan locally, consistently applying shared regional understandings
  - Utilize a multidisciplinary, integrated approach to solutions
  - Plan for multiple time frames and impact scenarios
  - Select strategies with multiple benefits and minimal detrimental impacts
  - Apply a “degrees- of- risk” framework

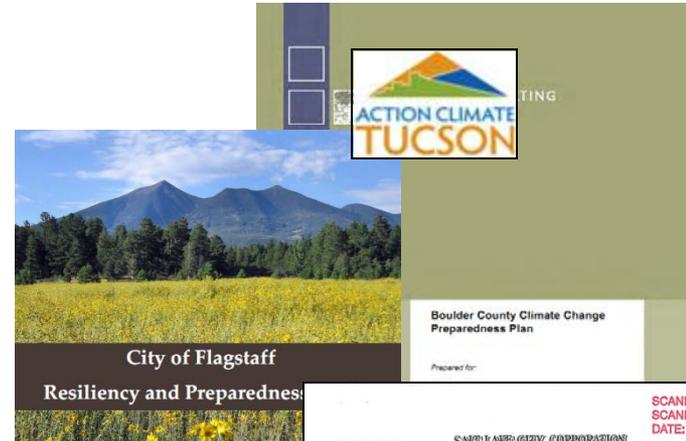
# The Learning Network in Action

- Ongoing engagement of Alliance members via USDN
- Annual Leadership Academies with ISC in 2012, 2013 and beyond
- 2013 Focus on Urban Water Management & Adaptive Pathways



# Alliance Members in Action

- Active Community-wide Initiatives
- Council-Level Policy Enactments
- Sector Initiatives
- Public Engagement Initiatives



RESOLUTION NO. 2012-22

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF FLAGSTAFF, ARIZONA, ADOPTING THE 2012 CITY OF FLAGSTAFF RESILIENCY AND PREPAREDNESS STUDY AS A PUBLIC RECORD AND A MUNICIPAL RESILIENCY AND PREPAREDNESS POLICY STATEMENT.

WHEREAS, the City of Flagstaff has experienced significant damage from natural and human-caused hazards such as flooding, wildfire, drought, thunderstorms, high wind traffic accidents and hazardous materials incidents on many occasions, to property and life, economic hardship and threats to public health and safety; and

WHEREAS, climate variability and weather related disasters can pose a significant threat to the City's ability to deliver on its existing and future community priorities and affect the City's ability to deliver on its existing and future community priorities; and

WHEREAS, historical weather data alone is no longer sufficient to plan for the future, the City should also incorporate proactive climate and associated impacts into its operations; and

WHEREAS, the City of Flagstaff is dedicated to building, maintaining and enhancing its resources, safety, and infrastructure by preparing for and effectively managing natural and human-caused hazards; and

WHEREAS, the City of Flagstaff is dedicated to the active management of natural resources, water resources, forest health and public health and safety; and

WHEREAS, the City of Flagstaff recognizes that changes in local and regional climate patterns and opportunities in the region and supports a diverse and thriving economy that is resilient to natural and human-caused hazards; and

WHEREAS, the Mayor and Council are committed to building resilient communities by implementing existing emergency response and relief efforts by implementing proactive measures so that potential weather impacts can be identified and addressed as a strategy to avoid more significant costs in the future; and

WHEREAS, the City of Flagstaff has completed the 2012 City of Flagstaff Preparedness Study which identifies natural and human-caused hazards it faces, assesses the vulnerability and risk posed by those hazards, and recommends preparing for those identified hazards; and

RESOLUTION: That the City Council of the City of Flagstaff, Arizona, do hereby adopt the 2012 City of Flagstaff Resiliency and Preparedness Study as a Public Record and a Municipal Resiliency and Preparedness Policy Statement.

APPROVED AND ADOPTED this 17th day of January, 2012.

\_\_\_\_\_  
Soren Simonson, Mayor

\_\_\_\_\_  
Rick Graham, Director of Public Services

\_\_\_\_\_  
David Everett, Chief of Staff

RESOLUTION NO. 2012-22

SAIT LAKE CITY CORPORATION  
DEPARTMENT OF PUBLIC SERVICES  
DIRECTOR'S OFFICE

CITY COUNCIL TRANSMITTAL

DATE RECEIVED: 01/18/2012  
DATE SENT TO COUNCIL: 01/15/2012

TO: Salt Lake City Council  
Soren Simonson, Chair

DATE: January 17, 2012

FROM: Rick Graham, Director of Public Services

SUBJECT: Salt Lake City's support for, and participation in, the Regional Climate Adaptation Planning Alliance.

STAFF CONTACT: Vicki Bennett, Division Director, Division of Sustainability and Renee Zollinger, Environmental Program Manager, Division of Sustainability

DOCUMENT TYPE: Resolution

RECOMMENDATION: Approve a resolution supporting establishment of, and Salt Lake City's participation in, the Regional Climate Adaptation Planning Alliance.

BUDGET IMPACT: None

BACKGROUND/DISCUSSION: Changes in our local climate have the potential to impact the livability of Salt Lake City in real, tangible ways. How Salt Lake City is affected, positively or negatively, by the changing climate and weather patterns will depend on the resiliency and adaptability of the City government, federal, state and local agency partners, institutions, private businesses, and citizens. A white paper, discussing the City's role and responsibility in planning for future changes in climate, is attached.

By coordinating and collaborating with other communities throughout our arid, western region, we can develop more effective plans for protecting and sharing our scarce natural resources and existing and other in responding to, and recovering from, emergencies and natural disasters. The communities of Fort Collins, Denver, Boulder City, Boulder County, Aspen, Phoenix, Flagstaff, Tucson, Las Vegas, Park City, and Salt Lake City have been working together for the past year to identify our shared vulnerabilities and to discuss the ways we can work together to strengthen the region in the face of changing global and regional climate patterns.

At this time, the City Councils of Park City, Utah and Tucson, Arizona have approved resolutions that recognize, and join, the Regional Climate Adaptation Planning Alliance. The other cities listed above are also working to adopt this resolution. We request that the Salt Lake City Council

LOCATION: 401 SOUTH STATE STREET, ROOM 120, SALT LAKE CITY, UTAH 84111-1010  
MAILING ADDRESS: PO BOX 78888, SALT LAKE CITY, UTAH 84178-0888  
TELEPHONE: 801-535-7775 FAX: 801-535-7463

# Boulder County, Colorado

Climate change threatens  
human and natural resources.



# What are Potential Boulder County Impacts?

- more frequent droughts and flash floods
- greater spread of vector-borne diseases
- increased heat waves and wildfires
- warmer springtime temperatures that would cause snowpack to melt earlier in the year
- potential challenges in storing water for municipal supplies,
- reduced stream flows with subsequent impacts to water quality and ecological resources
- higher temperatures and fewer days with precipitation will likely increase the frequency and severity of episodes of poor air quality and associated human health impacts.

# Climate Change Preparedness Plan Adopted October 2012

The plan focuses on four key sectors:

- water supply,
- emergency management,
- public health, and
- agriculture and natural resources.



# Implementation Steps

Initial steps formalize key recommendations:

- Coordinated drought planning
- Planning for extreme heat events
- Seeking funding for a full-time wildfire prevention coordinator
- Maintain Climate Adaptation Planning Committee



# Climate Adaptation in Denver



# Denver Planning Approach

- Convened working group (primarily city agencies)
  - Environmental Health                      Public Works
  - Parks & Recreation                      Denver Water
  - Emergency Management                      General Services
  - Denver International Airport                      Planning & Devlpmt
  - Economic Development                      Human Services
- Initially internally focused
  - Familiarize ourselves and gain buy-in
  - Establish priorities

# Accomplishments to Date

- Front range climate science summary
  - Higher temperatures
  - More extreme weather events
  - Early snowmelt and late snowpack formulation
- Relationships to existing Denver plans
- Vulnerabilities assessment
- Response strategies
- Planning documents
- Environmental Management System targets for 2013
- Gaps assessment RFP (Spring/Summer 2013)

# Vulnerabilities

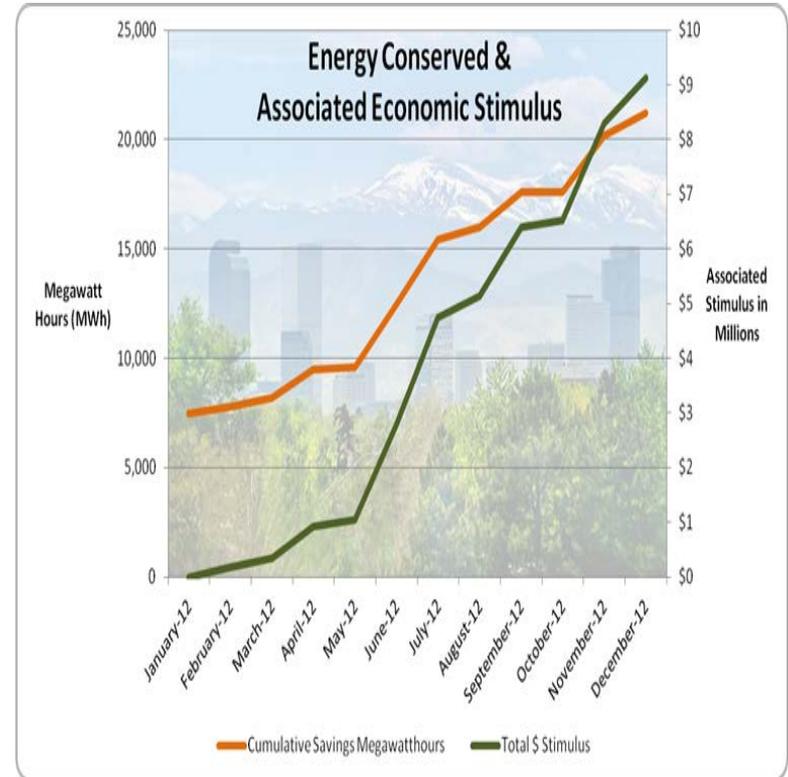
- High water and energy demands/cost
- Impacts on vulnerable populations (cooling, working conditions, inadequate housing, extreme weather, etc.)
- Effects on built environment
  - Design considerations (buildings, stormwater management, pavement, etc.)
  - Extreme weather impacts (housing, transportation, cooling systems, etc.)
- Livability/Health
  - Air and water quality impacts (ozone, particulate)
  - Recreation
  - Habitat (people, plants, animals)
- Economic impacts (tourism, transportation /business disruption)

# 2013 EMS Adaptation Targets

- Adaptation Plan
- Extreme Heat Response Plan
- Increase City water conservation measures
- Increase tree canopy
- Community outreach on extreme weather concerns
- Reduce City building energy use
- Conserve resources city-wide (energy, waste, water)

# Lessons Learned

- Start somewhere – learn by doing
- Already working towards many goals
  - Water conservation
  - Energy conservation
  - Green infrastructure
  - Dense development
  - Connected communities
- Many mitigation co-benefits available
- Sustainable communities are resilient communities



# Salt Lake City



# Salt Lake City

- Mayor Becker convened a Climate Adaptation Steering Committee, led by the Sustainability Division:

Airport

Emergency Response

Loss Prevention

Finance

Police

Fire

Public Utilities

Transportation

CED

Public Services

Engineering

Parks and Open Lands

Sustainability

Health

# Vulnerability Assessment

- Over 80 potential climate impacts were identified, which were then categorized by risk and current resilience. Areas of significant impact include:
  - Water Supply & Treatment
  - Ecosystem Degradation
  - Infrastructure losses
  - Community Health/Safety

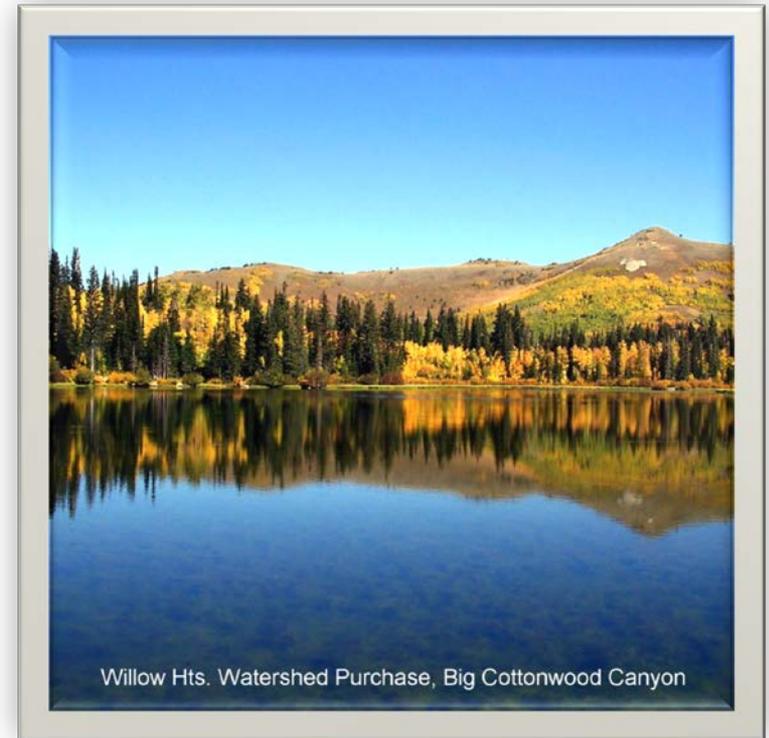


# Secondary Consequences

- Impact to City budgets
  - Large swings in weather result in swings in budget needs
    - Heavy snow vs. light year
    - More unpredictable storm response needs
  - Long-term infrastructure planning
- Emergency response needs
  - Wildfire
  - Windstorms
  - Flooding
  - Heat stress

# Incorporating Resiliency into all City Planning

- Identify all City plans where future climate change should be considered
- Update plans to include adaptation responses
- Ensure that future climate scenarios are considered in all planning processes.
- Include partners as required



# Tucson



# Tucson



- 2008 commitment to:

*Development and implementation of strategies to enable the community to **adapt to unavoidable climate change**. The adaptation component will require an examination of the anticipated consequences of climate change; and*

*Outreach and education to the community to ensure that **residents are informed about climate change drivers, expected impacts, community consequences, and options for mitigating or adapting to this change.***

- Climate Change Committee

# Tucson

- Grant funded process:

- Downscaled data
- Vulnerability assessment
- Messaging

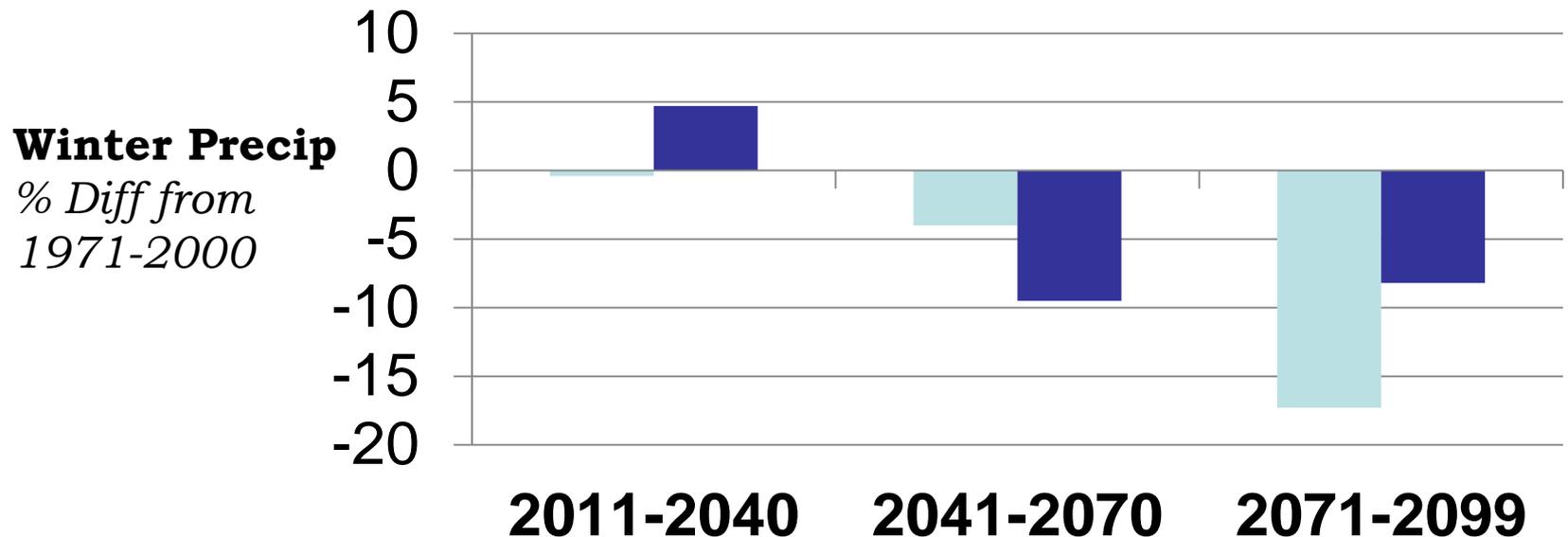
- Engagement opportunities:

- Hosted kick-off of national event
- Regional adaptation workshop



# Tucson

- Key Process Lessons:
  - Translators can be key
  - Climate not a major factor in city planning
  - We «plan» but aren't often geared to be truly proactive
  - Community-wide approach can be a big plus
  - Just using annual averages can miss important info



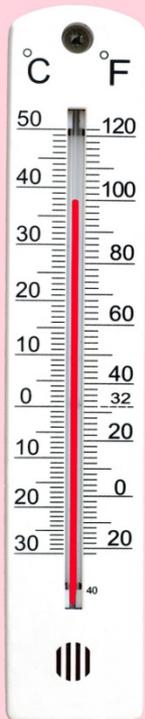
# Tucson

- **Messaging Lessons:**

- People want to know
- Hotter, dryer; so what?
- Personalize!
- Vulnerability =

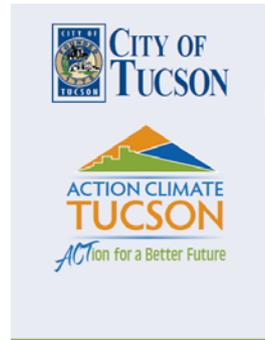
Exposure \* We live in a desert \* 6<sup>th</sup> poorest city

- Brutal honesty, but this is just a trajectory...



110

**25** more days per year



City of Tucson Invites you to

## The Power to Prepare Tucson:

A SUMMIT TO READY OUR COMMUNITIES FOR A CHANGING CLIMATE

To be a desirable destination for businesses and residents in the 21st Century, cities need to prepare for the growing risks of extreme weather and climate disruption while building communities that use clean energy efficiently.

In preparation for this changing future, Tucson's Office of Conservation and Sustainable Development, in collaboration with the University of Arizona, recently completed a report of climate impacts on the City of Tucson. We want to discuss these vulnerabilities with the broader community. This discussion will be a unique opportunity to learn how climate change may impact you and your community, while collaborating on priorities and solutions for addressing these vulnerabilities.

This unique event will be moderated by AmericaSpeaks, a national nonprofit whose mission is to help citizens participate more directly, and with greater impact, in issues that affect their lives. AmericaSpeaks will bring their 21st Century

Calling all Community Leaders and Residents of Tucson and Pima County

Saturday, March 31, 2012

3 p.m.-7:15 p.m.

Temperatures Delivered by Evaporative Coolers

		% Relative Humidity																
		2	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
Air Temperature	75	54	55	57	58	59	61	62	63	64	65	66	67	68	69	70	71	72
	80	57	58	60	62	63	64	66	67	68	69	71	72	73	74	76	76	77
	85	61	62	63	65	67	68	70	71	72	73	74	75	76	77	79	81	
	90	64	65	67	69	70	72	74	76	77	78	79	81	82	83	84	86	
	95	67	68	70	72	74	76	78	79	81	82	84	85	87				
	100	69	71	73	76	78	80	82	83	85	87	88						
	105	72	74	77	79	81	84	86	88	89								
	110	75	77	80	83	85	87	90	91									
	115	78	80	83	86	89	91	94										
	120	81	83	86	90	93	95											
	125	83	86	90	93	96												

Optimum conditions for Evaporative Coolers



# Alliance Contacts

- Lisa Friend – Boulder County
  - [lfriend@bouldercounty.org](mailto:lfriend@bouldercounty.org)
- Celia Vanderloop – Denver
  - [celia.vanderloop@denvergov.org](mailto:celia.vanderloop@denvergov.org)
- Vicki Bennett – Salt Lake City
  - [vicki.bennett@slcgov.com](mailto:vicki.bennett@slcgov.com)
- Leslie Ethen – Tucson
  - [Leslie.Ethen@tucsonaz.gov](mailto:Leslie.Ethen@tucsonaz.gov)
- Steve Adams – Institute for Sustainable Communities
  - [sadams@iscvt.org](mailto:sadams@iscvt.org)