

Watershed Management Plan

Protecting Our Drinking Water Supply



Public
Utilities




Keep It Pure

DON'T POLLUTE THE WATERSHED

Mentimeter Word Cloud

Introductions

Agenda

- Introductions – SLCDPU & Stakeholder Committee
 - Meeting Agenda, Meeting Courtesies – Cindy Gubler
 - Plan's purpose – Laura Briefer
 - Human Impacts Conditions – JW Associates
 - Human Impacts Facilitated Discussion – The Langdon Group & Stakeholder Committee
 - Next Steps – Cindy Gubler
- 

Meeting Courtesies

- Mute your microphone
- Leave your camera on
- Use the comment tool or the raise your hand tool
- Our ground rules:
 - Want everyone to participate
 - There are no right or wrong answers – every opinion counts
 - Be respectful; no one interrupts or talks over another person
 - Keep an open mind, listen carefully, and try to understand other people's view
 - Respond to others how you want to be responded to

What To Expect:

- Ask if there are slide questions during presentation
- Facilitated discussion at the start and at the end
- Want your input, ideas and recommendations
- We appreciate your time, knowledge, and views
- We will prepare a meeting report

Plan Need & Historical Context



GOAL

Protect the high-quality source of drinking water supply that originates from our watershed areas.



NEED

Salt Lake City Department of Public Utilities is required by the Safe Drinking Water Act to create and implement a plan that documents how our source waters are protected. The conditions in our watershed areas have changed and they are under pressure on multiple fronts. It's time to update the plan.



VISION

Develop sound policy that can be executed methodically by Salt Lake City Department of Public Utilities through collaborative management with trusted partners.

“The eyes of the future are looking back at us, and they are praying for us to see beyond our time”

– Local author and naturalist Terry Tempest Williams

Keeping Our Drinking Water Pure Is The Purpose Of The Watershed Management Plan



Human Impacts Conditions

JW Associates



Little Dell Reservoir

Photo: JW Associates – Jessica Wald

Critical concerns for watershed health

- ❖ Climate Change
- ❖ Wildfire
- ❖ Human Influence

What are we going to talk about/agenda

1. How to think about human influence in the watershed
2. Past population growth and future projections
3. Why people are coming here
4. Types of impacts on watersheds due to human development and recreation
5. Funding and partnerships

Utah is the **FASTEST GROWING** state in the nation with the Wasatch Front being home to **75%** of the population (2020 Census)



Watershed Condition – Vulnerability to Stress

“Watershed condition changes over time due to natural processes and anthropogenic influences. The most pervasive impacts to watershed condition are expected to come from **population increases** . . . and **climate change**”

US EPA, Healthy Watersheds Protection: Developing a Watershed Vulnerability Index, EPA.gov.



Mountain Dell and Little Dell Reservoirs, Parleys Canyon

Photo: Patrick Nelson

Higher source water quality → Lower treatment costs → Higher quality at the tap

Strategies to protect water quality have been working, but ...

Entering the WTPs

Water quality has been consistently high, requiring minimal treatment

Leaving the WTPs

Treated water leaving the WTPs exceeds all US EPA requirements (SLCDPU Water Quality Report, 2021)

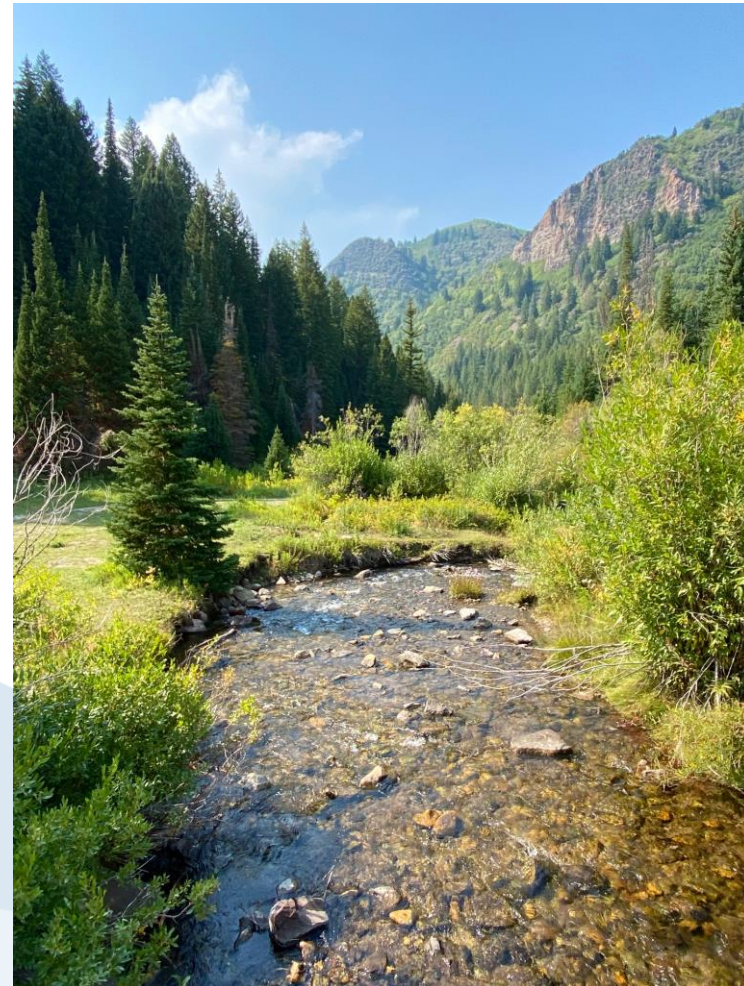
- Increasing population
- Pressure for more recreational opportunities
- Continued development
- New threats from climate change
- Existing & amplified wildfire threat

... We need to proactively protect our water from new and increasing threats.

A healthy and resilient watershed = Long-term protection of water quality

- Healthy riparian areas
 - Intact wetlands
 - Natural stream flows
 - Functional flood plains
- ✦
- Healthy, diverse upland vegetation
 - Mix of openings/meadows
 - Good ground cover
 - Wildfires in natural disturbance regime
- ✦
- Minimal impervious or compacted cover
 - Lower road density
 - Well designed stream/road crossings

A HEALTHY RIPARIAN ZONE



Big Cottonwood Canyon

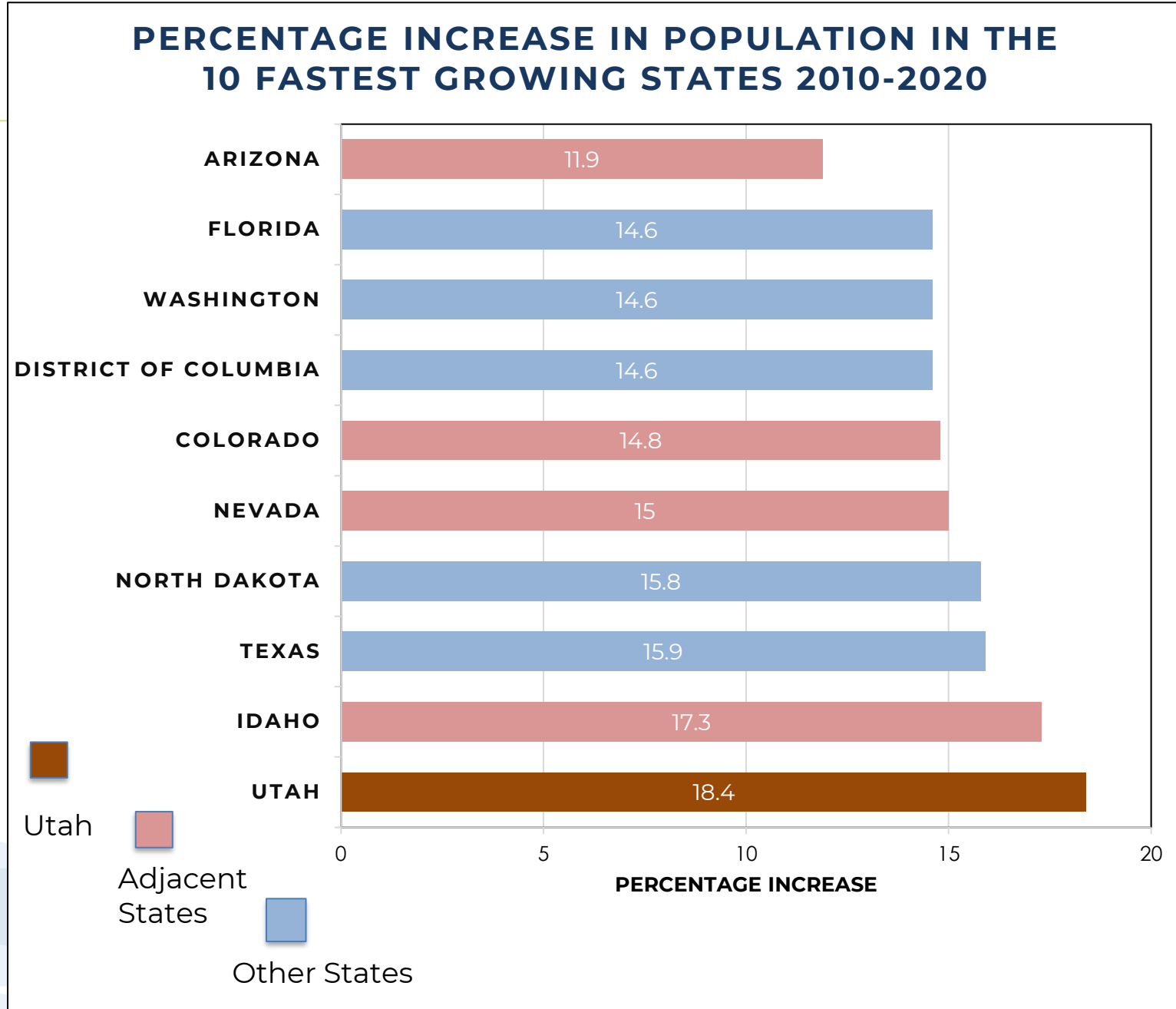
Photo: Sharon Turner

Utah is the fastest growing state in the U.S.

The **Uinta-Wasatch-Cache National Forest** is among the top five most visited in the nation

More visitors annually than Yellowstone NP (average of 4.2 million past 5 years)

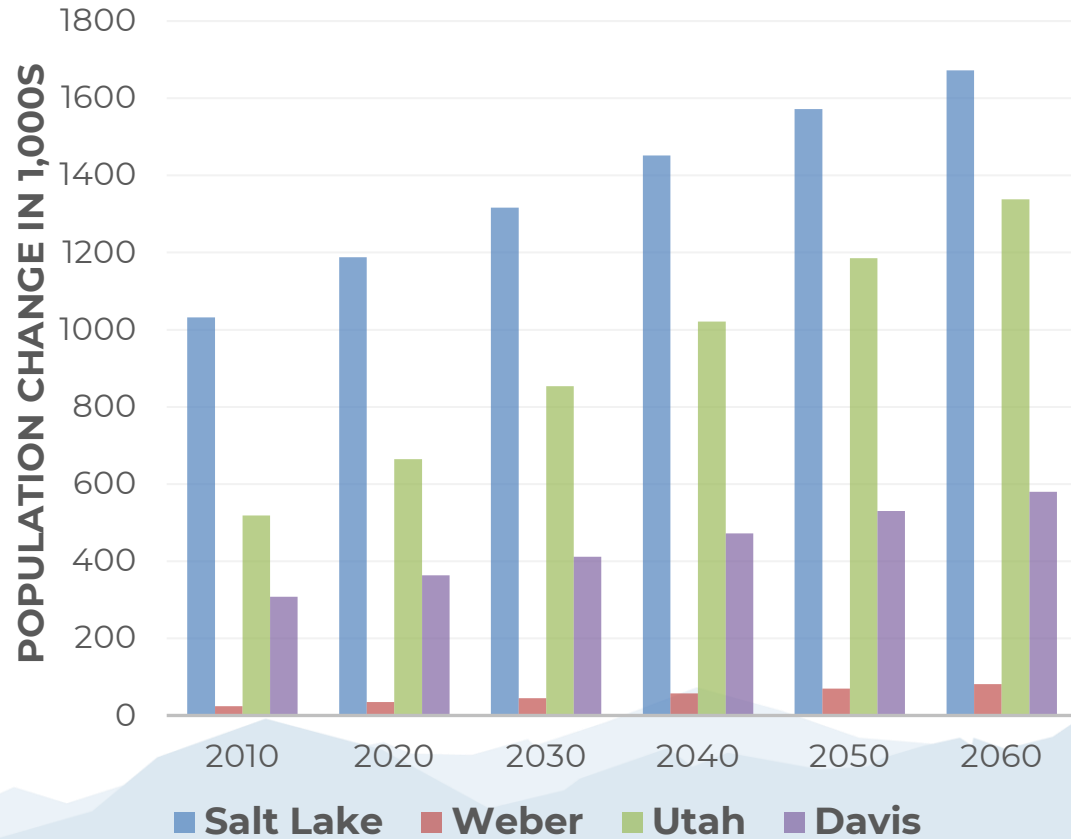
(Source: Best Practices for Watersheds and Recreation: 2018 Research Paper by Headwaters Economics)



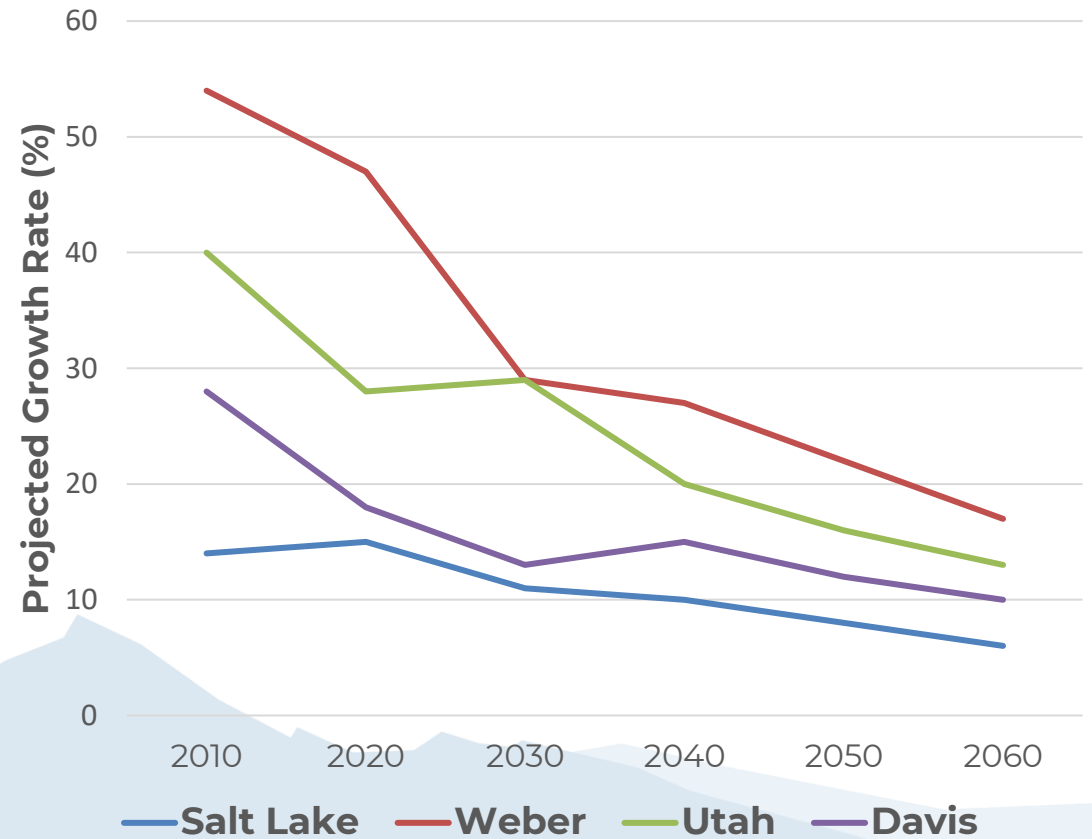
Source: Census Bureau

Population Growth and Growth Rate in Counties along Wasatch Front

PROJECTED POPULATION GROWTH BY DECADE IN COUNTIES ALONG WASATCH FRONT

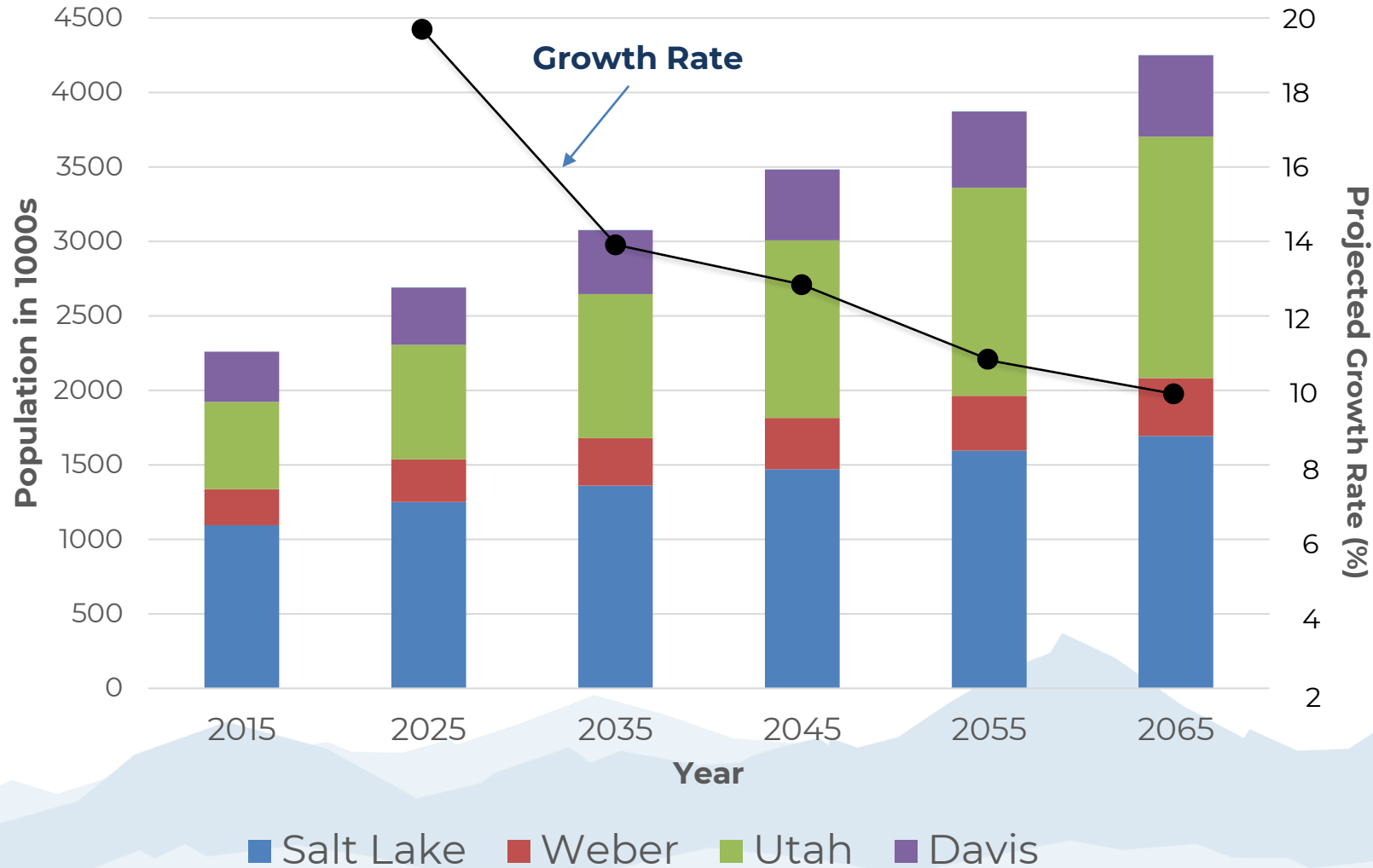


PROJECTED GROWTH RATE FROM 2010-2060 IN COUNTIES ALONG WASATCH FRONT



Sources: County Profile Pages, Kem Gardner Policy Institute. David Eccles School of Business. University of Utah. Website accessed April 28, 2022. <https://gardner.utah.edu/demographics/projections/state-and-county-demographic-and-economic-projection-county-profiles/>.
 Maps and Data Portal: Informing Decision Making. Wasatch Front Regional Council. Website accessed April 28, 2022. <https://wfrc.org/maps-data/>.
 2020 Census Data, Census Bureau.

Population growth by County along Wasatch Front



Wasatch Front

Population Increase from 2015-2065 = 1,988,879
 Percentage Change = 88%

State of Utah

Population Increase from 2015-2065 = 2,997,404
 Percentage Change = 94%

Why people want to be here - The Wasatch Mountains and the outdoor recreation they provide

Figure 2: Being able to access the Central Wasatch Mountains is important to my lifestyle and quality of life (N = 289)

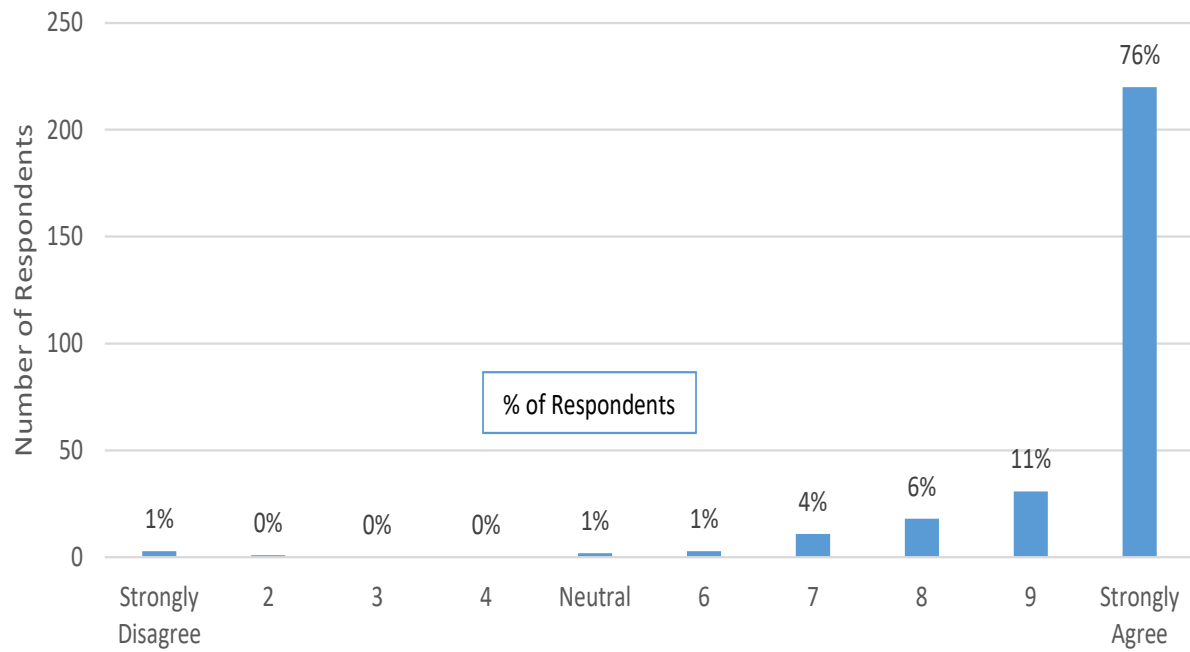
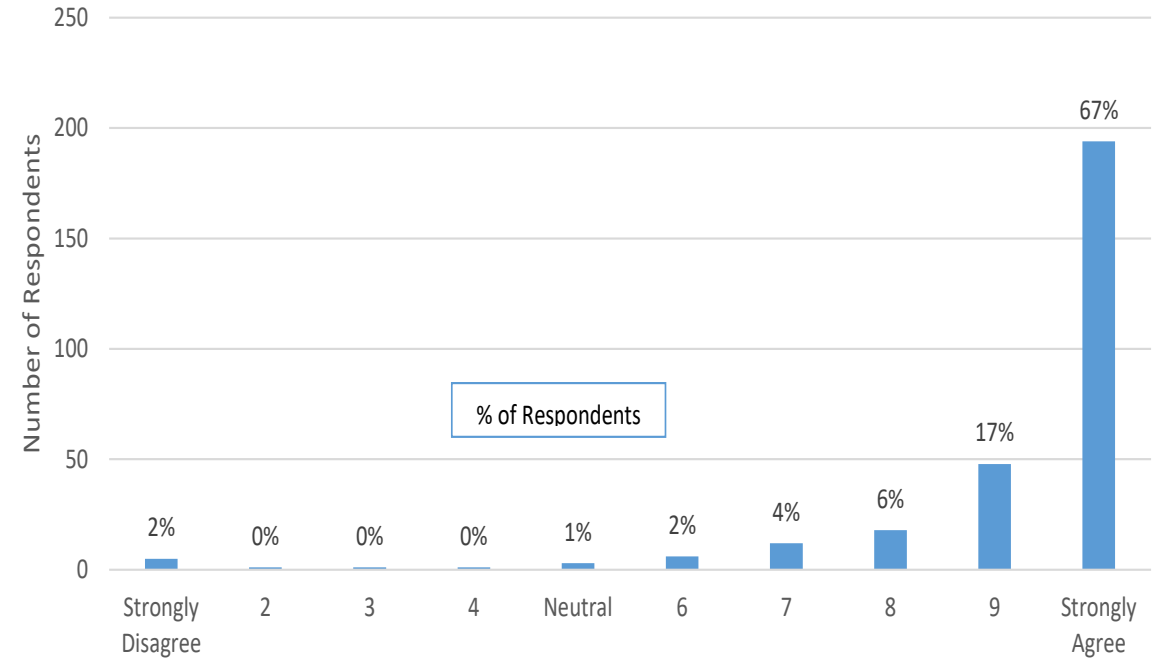
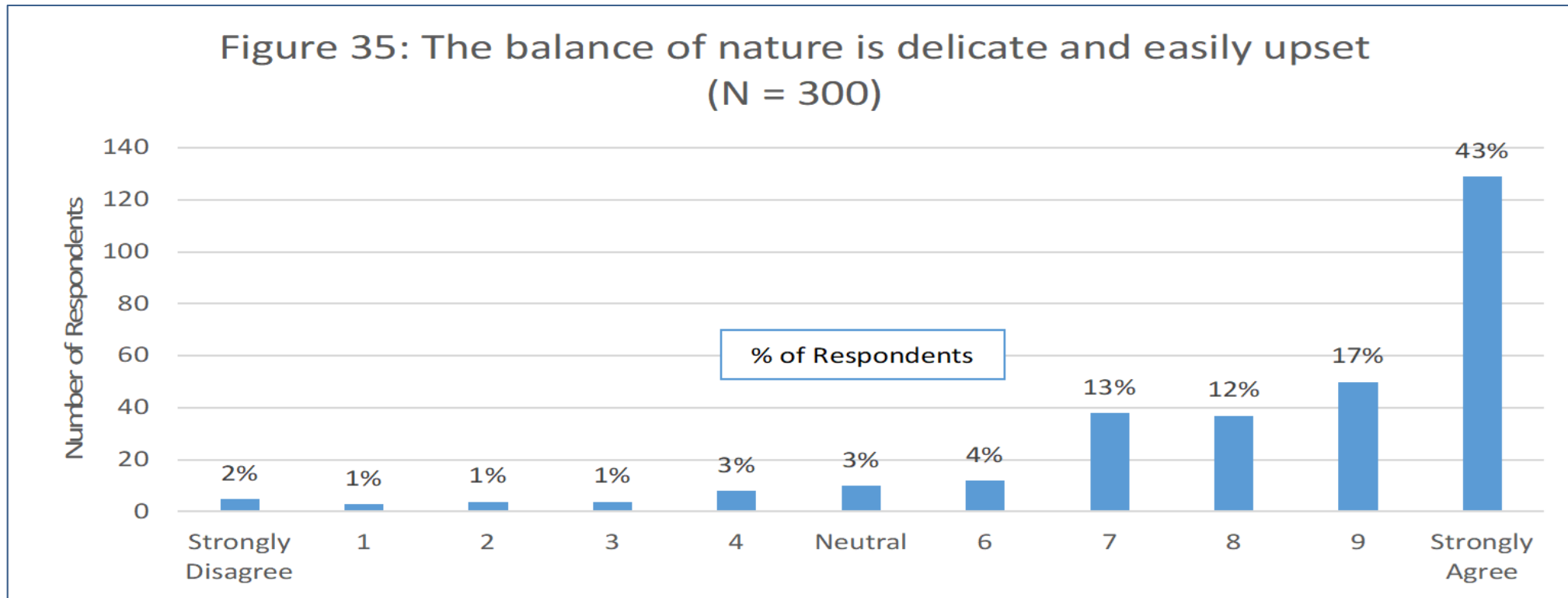


Figure 3: The access to recreational opportunities is an important reason why I live in this area (N = 289)



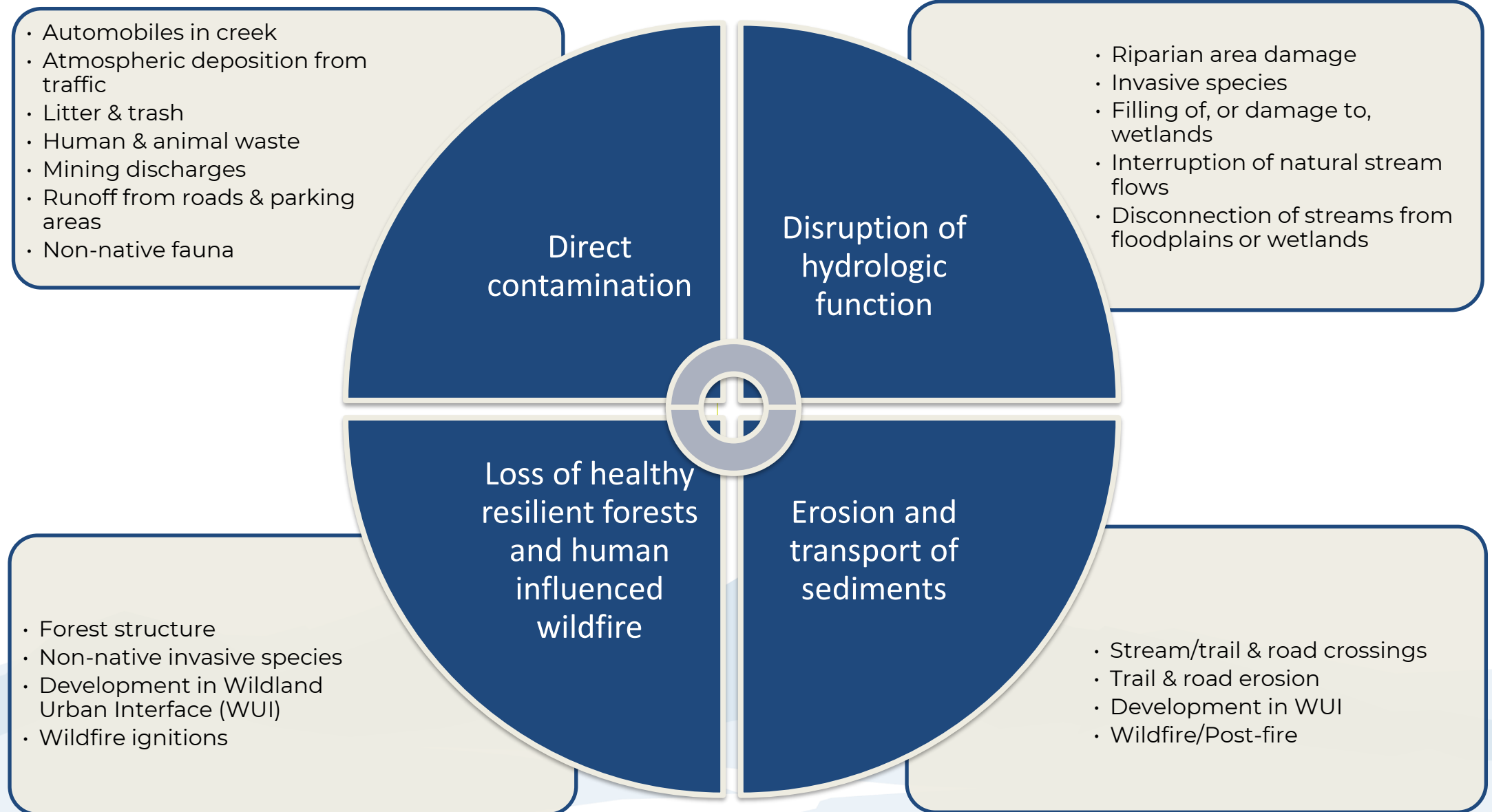
Source: 2014-2015 Central Wasatch Visitor Use Study: Follow-Up E-Survey (Institute for Outdoor Recreation and Tourism, Utah State University, 2015)

People recognize the ecological sensitivity of the region



Source: 2014-2015 Central Wasatch Visitor Use Study: Follow-Up E-Survey (Institute for Outdoor Recreation and Tourism, Utah State University, 2015)

Human Influence & Potential Impacts



Potential for Direct Contamination

CHALLENGES

- Automobiles in creek
- Atmospheric deposition from traffic
- Litter & trash
- Human & animal waste
- Mining discharges
- Runoff from roads & parking areas
- Non-native fauna
- Septic Systems

CBS Denver – Car Crash in Poudre River

The Spectrum – City of St. George

Human Impacts Facilitated Discussion

The Langdon Group

Comments Always Welcome
slcwatershedmanagementplan.com

Potential for Direct Contamination

WHAT CAN BE DONE?

- Guardrails and warning signs at key locations
- Traffic reduction to minimize emissions
- Informational signs, education, clean up crews
- Appropriate facilities and enforcement of regulations
- Monitoring and BMP implementation in collaboration with responsible parties and agencies
- Improve drainage and settling basins
- Move houses from septic to sewer systems

Potential for Disruption to Hydrologic Function

CHALLENGES

- Riparian area damage
- Invasive species
- Filling/damage to wetlands
- Interruption of natural stream flows
- Channelization of streams – disconnecting them from floodplains or wetlands

Photo: Beschta et. al, 2012. *Environmental management*

Wetlands of the Great Salt Lake. Photo: Sarah Arnoff, *Oasis Lost*: Salt Lake City Weekly

Potential for Disruption to Hydrologic Function

WHAT CAN BE DONE?

- Riparian restoration and/or fencing
- Invasive weed control program
- Wetland restoration & source control
- Stream restoration
- Policy for review of building plans to ensure connections are maintained
 - ✓ Establish new connections where lost

Potential for Erosion and Transport of Sediments to Water Sources

CHALLENGES

- Stream/trail & road crossings
- Trail & road erosion
- Development in Wildland Urban Interface (WUI)
- Wildfire/Post-fire

Potential for Erosion and Transport of Sediments to Water Sources

WHAT CAN BE DONE?

(PHOTO) – photo of something positive illustrating what can be done...I would like something mountain bike related. Maybe a well designed trail or river crossing

- Appropriately designed crossings
- Appropriately designed roads & trails
- Inventory of riparian areas, signage in heavily used areas, fencing in damaged areas
- Education, review of ground disturbing projects
- Pre- and post-fire planning, quick actions after fires

Loss of Healthy Resilient Forests and Potential for Human Influenced Wildfire

CHALLENGES

- Forest structure
- Non-native invasive species
- Development in Wildland Urban Interface (WUI)
- Wildfire ignitions

Loss of Healthy Resilient Forests and Potential for Human Influenced Wildfire

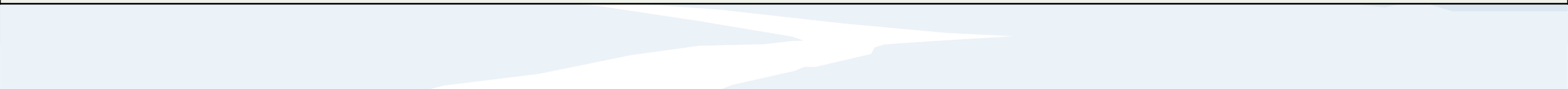
WHAT CAN BE DONE?

- Collaborative design of forest management projects to reduce density and restore openings
 - ✓ Create fire breaks
- Non-native weed control program, forest health and resiliency improvements
- Education, fuel breaks, open fire bans when needed
 - ✓ Defensible space program in WUI
- Ban fires from picnic areas and backcountry
 - ✓ Fire and grill bans during times of high fire risk
 - ✓ Signs, quick actions during fire season
 - ✓ Cell phone alert and reporting system
 - ✓ Education

Watershed management in other communities around the west



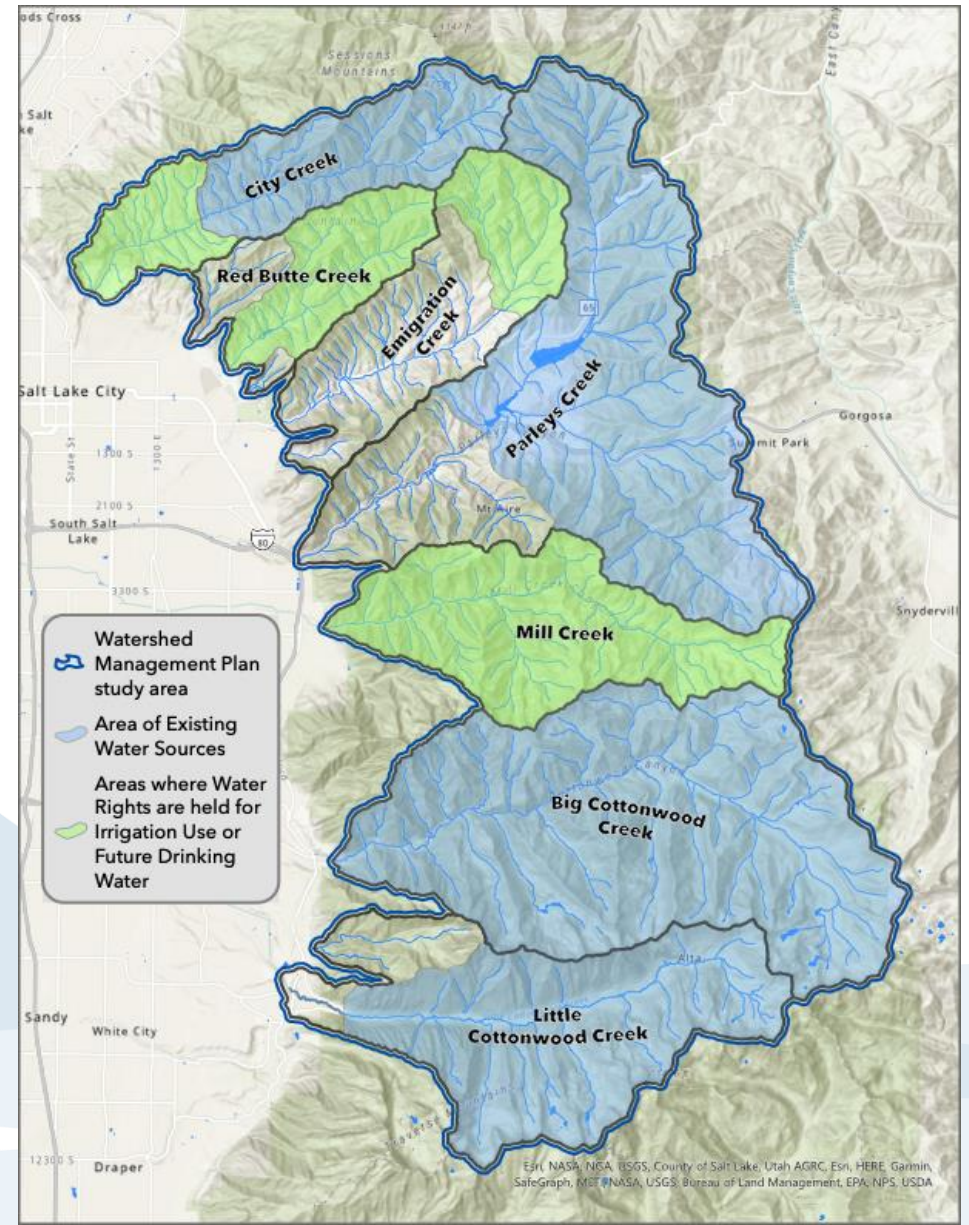
City/ Watershed	Approx Service Pop.	Primary Water Source	Distance from Source	Watershed Area/ % of supply	Other details	Characterization of Watershed
Portland, OR/ Bull Run	645,000	Rainfall	<30 miles	89,000 ac (65,000 ac protected) Augmented by groundwater	2 reservoirs 30,700 ac-ft	Since late 1800s, 2/3 of watershed has been mostly closed to all activities
The watershed was opened to logging for a brief period (1958-1977). Closed again after evidence of contamination and public opposition. Only access to the watershed now is guided educational tours.						
Santa Fe, NM Upper Santa Fe	91,000	Snowmelt	<30	17,200 acres 35-40% from the watershed 45-50% San Juan-Chama Proj 20-25% Groundwater	2 reservoirs 4,000 ac-ft	Entire watershed closed to public use since 1932 (wildfire risk, contamination cited in ordinance)
Due to fire suppression, watershed has overly dense vegetation at risk of catastrophic fire. City is treating and thinning the forest. Hiking is permitted only when guided by City of Santa Fe Utilities or partner organizations (TNC, Santa Fe Watershed Assn.).						
Boulder, CO Numerous sources	175,000	Snowmelt, rainfall	Varies	40% Silver Lake 40% Barker Reservoir 20% West slope (Boulder Res)	3 reservoirs 27,000 ac-ft	Silver Lake Watershed and Lakewood Reservoir have been closed to public since 1920
Water comes from numerous sources with different management. Silver Lake is completely closed. Watersheds above Barker Reservoir include 2 small towns and Eldora Ski Resort. These watersheds have no restrictions. Remaining portion comes from west slope.						



City/ Watershed	Approx Service Pop.	Primary Water Source	Distance from Source	Watershed Area/ % of supply	Other details	Characterization of Watershed
City of Tacoma Upper Green River	320,000	Snowmelt/ Rainfall	<30 miles	147,000 acres (2/3 closed to recreation) Almost 100% small amount of groundwater	1 reservoir 20,000 ac-ft	Lower portion closed to nearly all recreation. Limited hunting and timber harvest. Dispersed recreation in upper watershed.
City owns 11% of watershed and has been strategic in land acquisition. Access tightly controlled using locked gates, staffed entry points video surveillance. Has agreements with USFS whereas public use rights were relinquished and Tacoma assumed road maintenance. Other agreements in place with landowners to control access allow water quality monitoring						
Boise, ID Lower Boise River	240,000	Groundwater Boise River	Varies	30% Boise River 70% Groundwater		Access is unrestricted. 200 mile trail system offers on and off leash trails for dogs, horses, bikes, ebikes, ATV, motorcycles
“The entire mainstem Boise River and many of its tributaries have too much sediment. Within the river, temperatures are elevated, phosphorous concentrations are high, and bacteriological pathogens have also been found.” (lowerboisewatershedcouncil.org)						
Colorado Springs, CO	500,000	Snowmelt, rainfall	Varies	80% from a system of trans- mountain diversions that collects water from over 1.2 million acres		Extensive network of pipes, pumps, reservoirs over vast area with wide variety of management
City manages recreation on several of their reservoirs including building and operating visitor centers, hiking trails, boat docks, etc. City employees operate some of these facilities.						

How do these areas compare to Salt Lake City and the Wasatch Mountains?

- Approximate Service Population = 330,000
- Proximity to urban core – 28 miles to ski areas
- Snowmelt dominated system
- Currently 60% of municipal water for SLC comes from 82,559 acres (protected watershed area)
- 2 Reservoirs with total capacity of 23,550 ac-ft



Also in the Watersheds

- **4 world-famous ski resorts** less than 30 miles from downtown Salt Lake City
- **3 Wilderness Areas** with trailheads a few miles from Salt Lake City
- Major Freeway
- **Extensive trail network** for hiking and biking: some walking distance from the edge of town
- Rapidly growing **mountain bike opportunities** that are gaining national attention
- Fastest growing state in US

BRIGHTON SKI AREA

Management - watersheds are open to most recreation with minimal restrictions on traffic in City Creek and domestic animals in the protected watershed areas

Brighton Ski Area

Photo: JW Associates - Jessica Wald

The Challenge - Balancing **human activity**

with the **long-term protection** of the **watershed** and the **water** it provides to the **community**?

Lake Blanche, Big Cottonwood Canyon

Photo: Sharon Turner

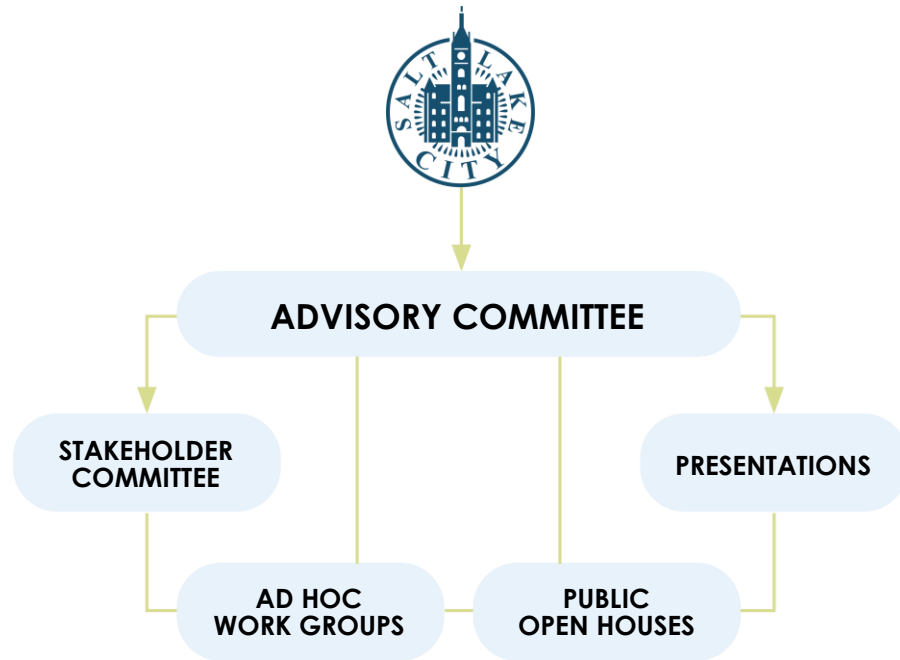


Critical to Successful Management – Funding and Partnerships

- Watershed management solutions cross ownership & jurisdiction boundaries
- Consistent communication from multiple agencies, municipalities, non-profits, and others is important for public understanding and support
- Consistent recurring funding is critical for multi-year projects
- Funding from multiple sources builds support and ownership of projects



Wrap Up



Advisory Committee Meetings (3 total)

- **Meeting 1 – Process Framework**
March 14, 3:00 – 4:00 pm

Stakeholder Committee Meetings (8 total)

- **Meeting 1 – Need, Characteristics & Framework**
March 24, 1:00 – 3:00 pm
- **Meeting 2 – Climate Change**
April 11, 3:00 – 5:00 pm
- **Meeting 3 – Wildfire**
April 21, 10:00 – 12:00
- **Meeting 4 – Human Impacts**
May 6, 10:00 – 12:00
- Meeting 5 – Elements To Be Explored
TBD
- Meeting 6 – Draft Guidelines/Practices/Tools
TBD
- Meeting 7 – Draft Plan
TBD
- Meeting 8 – Updated Draft Plan
TBD

Public Open Houses (4 total)

- **Meeting 1 – Need, Characteristics, Framework, Areas Of Focus**
May 25, 5:00 – 7:00 pm

Thank You



Public Utilities



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