



COMMUNITY

Parks and green spaces in our backyards contribute to our wellbeing, social connection, and enjoyment of the outdoors for all ages, abilities, and backgrounds. In the Salt Lake Valley, barriers between east and west-side communities limit mobility, access to employment, services, and entertainment, and silo communities. Greenways carry people across these divides, bridging communities and ecosystems from the Wasatch Range to the Jordan River.

Youth clean the Three Creeks Confluence in Salt Lake City.

OUR URBAN CREEKS HAVE THE POTENTIAL TO BECOME AN EQUITABLE, INNOVATIVE, AND RESILIENT SYSTEM OF GREENWAY CORRIDORS.

VALUES

According to the “Your Utah, Your Future” survey, Utahns want their communities to be:

- Safe, secure and resilient;
- Prosperous;
- Neighborly, Fair and Caring; and
- Healthy, Beautiful and Clean.

Respondents want communities that provide convenient access to nature and recreation. Furthermore, they want these destinations to be accessible by walking, biking, and transit, rather than driving alone. Of 100 points available, 23 were allocated to improving alternative transportation systems without a vehicle. To do so, a key strategy is to “connect communities with a system of trails and parks.” It is particularly important to integrate trails into regional systems and provide access to destinations and transit. The *Transportation & Communities Vision Book* suggests cooperatively planning networks at both the community and regional levels before significant population growth.¹

DEMOGRAPHICS

Approximately 388,908 residents live within one

mile of the seven creeks. The total population of Salt Lake County is 1,204,222. The population living within one-mile of the creeks grew by one percent between 2010 and 2020. For comparison, the population in Salt Lake County, as a whole, grew by 1.5 percent between these ten years.²

The population within one-mile of the creeks is 50-50 male and female. The median age is 35. The gender distribution is the same county-wide and the median age is similar at 33. The majority of the population is 82 percent white, compared to 87 percent in Salt Lake County. Table 4 shows the population by race within one mile of the creek corridors.

There are 155,329 households within one-mile of the seven creeks, compared to 397,918 in Salt Lake County. The average household size is 2.47–2.99 in Salt Lake County. Nearly 80 percent of homes within one-mile of the creeks were constructed before 1990. County-wide, 65 percent of homes were constructed before 1990. Median price of homes within one mile of the seven creeks is \$374,384, compared to \$345,284 County-wide.³

According to membership figures provided by the Church of Jesus Christ of Latter-day Saints, approximately 49 percent of Salt Lake County residents are Mormon, which includes active and nonactive members. The number of devout Mormons is lower. It is estimated about 40 percent of Mormons are active—24 percent of Salt Lake County residents as a whole.⁴ This dichotomy plays into the cultural narrative of the Salt Lake Valley between religious folks and the counterculture.

2 - Esri, *Forecasts for 2020 and 2025 with converted Census 2000 data into 2010 geography using one-mile buffer to creek* (2021).

3 - Esri, *Forecasts for 2020 and 2025 with converted Census 2000 data into 2010 geography using one-mile buffer to creek* (2021).

4 - Associated Press, *Mormons now a minority in Utah's biggest county, new figures show* (2018).

1 - Envision Utah, *Transportation & Communities Vision Book* (2014).

Table 5: Race & Ethnicity Within One Mile of Creeks

RACE/ETHNICITY	NUMBER	PERCENT (%)
White	293,644	82
Black	7,696	2
American Indian	3,764	1
Asian	13,214	4
Pacific Islander	3,732	1
Some Other Race	22,818	7
Two or More Races	11,335	3

Source: Esri, *Forecasts for 2020 and 2025 with converted Census 2000 data into 2010 geography using one-mile buffer to creek* (2021).

INDIGENOUS PEOPLES

The Salt Lake Valley includes the ancestral lands of the Eastern Shoshone Tribe, Goshute Indian Tribe, Northwestern Band of the Shoshone Nation, Ute Indian Tribe, and Shoshone-Bannock Tribes. These communities stewarded our creeks for centuries—hunting, fishing, and gathering along their banks. Each creek tells a story that makes up the cultural narrative of tribes in the Salt Lake Valley.⁵

As Mormon settlers moved into the Salt Lake Valley and spread along the Wasatch Front, native peoples were displaced and conflicts arose. Many tribes were pushed to the eight reservations in Utah. However, not all live on reservations. Approximately 46% of the total population of indigenous peoples in Utah live in Salt Lake County.⁶

UNDERREPRESENTED POPULATIONS

In the Salt Lake Valley, there is a divide between east and west-side communities. The north-south Interstate-15 and railroad tracks create a barrier to connectivity and cultural exchange between these communities. This limits mobility, decreases access to jobs, creates dangerous

5 - Seven Canyons Trust, *Land Acknowledgement* (2020).

6 - U.S. Census Bureau, *2009-2013 ACS 5-Year Estimates* (2010).

encounters between people, cars, and trains, and silos communities.

Examples of underrepresented groups include: people of racial and ethnic minorities, people that are 65 years or older, people with physical or cognitive disabilities, people with housing insecurity or experiencing unsheltered homelessness, and people with low income (below twice the official poverty threshold or \$38,000 for a family of four). Western and central areas of Salt Lake City, South Salt Lake, and western areas of Millcreek have higher concentrations of underrepresented groups. The poverty rate in these communities ranged from 11 to 31 percent, compared 2 to 16 percent in other Salt Lake County communities. Of the 12 census tracts that border the western edge of the creek corridors, racial and ethnic minorities make up an average of 59 percent of the population.⁷

ENVIRONMENTAL JUSTICE

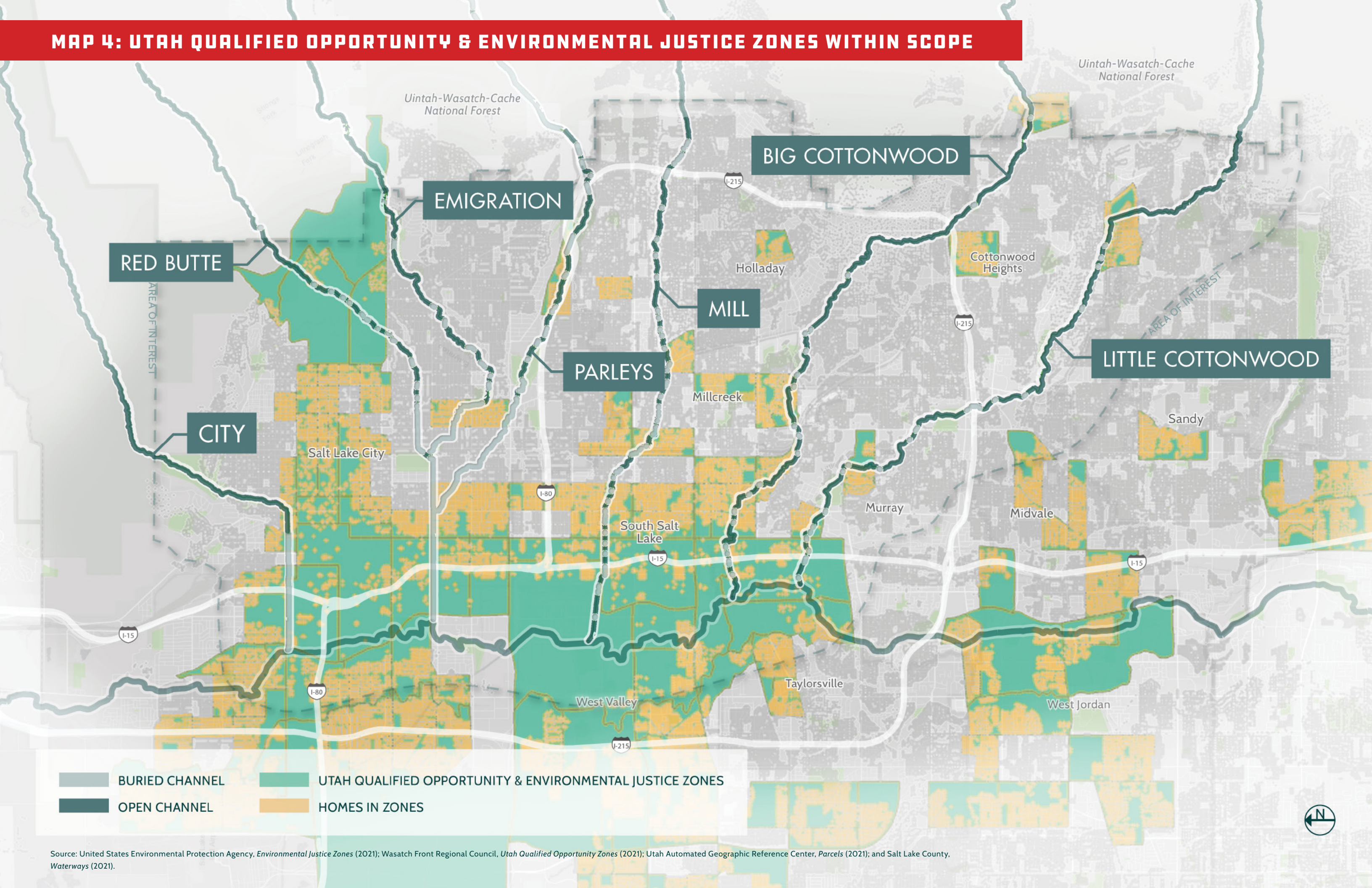
Our creeks slip underground as they flow west, passing unseen through west-side neighborhoods until spilling into the Jordan River within buried culverts. Three of the top five most diverse cities in Utah fall within the project area: South Salt Lake, Midvale, and Salt Lake City.⁸

In South Salt Lake, Mill Creek is impaired for *E. coli*, dissolved oxygen, and degraded aquatic habitat condition (observed-to-expected bioassessments). In Salt Lake City, City, Red Butte, Emigration, and Parleys Creeks flow underground as they pass underneath Interstate-15 and the central city core. Additionally, the lower watersheds of the creeks are impaired for *E. coli* and degraded aquatic habitat condition (observed-to-expected bioassessments). Midvale features only a small portion of Little Cottonwood Creek, which is impaired for *E.*

7 - Esri, *Forecasts for 2020 and 2025 with converted Census 2000 data into 2010 geography using one-mile buffer to creek* (2021).

8 - U.S. Census Bureau, *2015-2019 ACS 5-Year Estimates* (2021).

MAP 4: UTAH QUALIFIED OPPORTUNITY & ENVIRONMENTAL JUSTICE ZONES WITHIN SCOPE



Source: United States Environmental Protection Agency, *Environmental Justice Zones* (2021); Wasatch Front Regional Council, *Utah Qualified Opportunity Zones* (2021); Utah Automated Geographic Reference Center, *Parcels* (2021); and Salt Lake County, *Waterways* (2021).

Table 6: Utah Qualified Opportunity & Environmental Justice Zones

ZONE	DESCRIPTION
Environmental Justice Zone	Environmental Protection Agency identified zones of greater environmental injustices, such as air and water pollution, in areas with greater densities of underrepresented populations
Utah Qualified Opportunity Zone	Utah Governor's Office of Economic Development identified zones of economically distressed communities where new investments may be eligible for preferential tax treatment

Source: Utah Governor's Office of Economic Development, *Opportunity Awaits: Statewide Opportunity Zones Announced* (2018).

coli, cadmium, temperature, total dissolved solids, and degraded aquatic habitat condition (observed-to-expected bioassessments).⁹ Loss of green space due to creek burial and water quality impairments have left many residents on the west-side without access to nature or connectivity via riparian corridors and pathways.

According to the Environmental Protection Agency, environmental justice is “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” In the United States, communities of color are three times more likely than white communities to live in a place that is nature deprived. An estimated seventy percent of low-income communities live in nature-deprived areas.¹⁰

Put simply, the conditions of our creeks that flow through wealthy areas should be the same as those that flow through our lower-income communities. That is not the case in Salt Lake County. According to the Environmental Justice Screening and Mapping Tool, many of the environmental justice parameters—particulate matter 2.5, ozone, traffic, Superfund sites, hazardous waste, and wastewater—are concentrated along western stretches of the creeks, particularly along the Interstate-15 corridor and west.¹¹

Air quality is the Salt Lake Valley's biggest environmental injustice. Atmospheric inversions cause acute air pollution days, and limit urban outdoor activity. Travel east to higher elevations and one can see the thick layer of pollution in the western part of Salt Lake County. In December 2019, a red-level day registered particulate levels nine times greater than Los Angeles.¹²

Pollution is the leading cause of disease and death in the world, contributing to nine million deaths in 2015 alone. Health effects caused by pollution are most severe among low-income and underrepresented communities.¹³ The Utah Society for Environmental Education conducted a study asking west-side residents about problematic issues in their community. The most noted problem was air quality.¹⁴

Geography plays a role as pollution settles in the lower parts of the Salt Lake Valley. Additionally, the largest emitters are located in west-side neighborhoods—factories, highways, and refineries. A 2014 study found higher pollution days increase school absenteeism. By cutting pollution in half, the Salt Lake City School District would save \$426,000 per year. Benefits would be greatest in schools located in underrepresented areas.¹⁵

Nearly nine percent of Utah adults and six percent of children have asthma. During air pollution days, more emergency room visits and hospital

admissions occur.¹⁶ Climate change threatens to make pollution worse. Higher temperatures due to climate change will increase extreme heat events and wildfires. Summertime PM 2.5, created by wildfire smoke, decreases air quality and the health of residents. In some cases, it can lead to premature death.¹⁷

The urban forest plays a key role in improving air quality. Yet, tree coverage in Salt Lake County declines in neighborhoods with higher percentages of underrepresented populations—residents who are most impacted by poor air quality.¹⁸ In new neighborhoods, there is no relationship between household income and vegetation abundance. However, as neighborhoods age, time strengthens the relationship as low-income residents do not have the financial resources or social capital to replace trees after their natural life span.¹⁹

According to the *Parks & Public Lands Needs Assessment*, the Central, Northwest, and West Salt Lake communities, in Salt Lake City, are the highest need planning areas. These are Salt Lake City's most diverse and lowest income. The Central Community has the least access to parks and trails, and is slated for the most future growth. An estimated 94 acres of new green space, throughout Salt Lake City, is required to meet future needs at the same level of service.²⁰

Communities on the west-side have high numbers of park acres and amenities due to the Jordan River corridor. However, west-side residents are less likely to visit parks. When they do, they are more likely to travel and use east-side parks.²¹ Many west-side residents feel their parks and open spaces do not get the same level of maintenance. In *Reimagine Nature*, Salt

Lake City is committed to investments in capital improvements and maintenance on the Jordan River Trail that matches Liberty Park, acre for acre.²²

UNSHeltered Homelessness

According to 2019's Point-in-Time count, approximately 1,844 people are experiencing unsheltered homelessness on any given night in Salt Lake County. Public parks and open spaces sometimes provide more comfortable spaces for those experiencing homelessness than resource centers. In our greenways, evidence of homelessness can be seen as unsanctioned encampments.

The most immediate impact can be belongings within encampments. While the belongings do not present an ecological impact, the visual impact can affect user experience. Public complaints to park managers, health departments, and police enforcement lead to costly clean-up and removal of camps, belongings, and waste left behind. However, for individuals living on as little as \$11 a day, belongings are not easily replaced.²³

Additional ecological impacts from encampments may include bank erosion when regrading or digging into the creek bank is involved, trampling of sensitive habitat areas, and water quality issues related to microplastics and *E. coli* from feces running into waterways. According to researchers, these impacts may be overstated to justify removal and clean-up mitigation efforts. Drug paraphernalia presents a safety hazard for volunteer groups without experience handling sharp materials.

Wildfires are possibly the largest risk of encampments in natural areas. Fires easily get

9 - Salt Lake County, *Integrated Watershed Plan* (2015).

10 - Borunda, *How 'nature deprived' neighborhoods impact the health of people of color* (2020).

11 - Environmental Protection Agency, *Environmental Justice Screening & Mapping Tool* (2020).

12 - Biskupski, *Testimony before the Committee on Energy and Commerce Subcommittee on Environment and Climate Change* (2019).

13 - The Lancet, *Commission on Pollution & Health* (2017).

14 - Chand, *Environmental Racism* (2018).

15 - Mendoza, *Impact of low-level fine particulate matter and ozone exposure on absences in K-12 students and economic consequences* (2020).

16 - Utah Department of Health, *Asthma basics* (2014).

17 - Biskupski, *Testimony before the Committee on Energy and Commerce Subcommittee on Environment and Climate Change* (2019).

18 - Lowry, *Spatial Analysis of Urbanization in the Salt Lake Valley* (2010).

19 - Martin, *Neighborhood socioeconomic status is a useful predictor of perennial landscape vegetation in residential neighborhoods and embedded small parks of Phoenix, AZ* (2004).

20 - Salt Lake City, *Parks & Public Lands Needs Assessment* (2019).

21 - Salt Lake City, *Parks & Public Lands Needs Assessment* (2019).

22 - Salt Lake City, *Reimagine Nature Preliminary Engagement Findings* (2020).

23 - Neild, *An exploration of unsheltered homelessness management on an urban riparian corridor* (2018).

out of hand in the summertime when vegetation is dry. Natural areas frequently burn along the Jordan River, jeopardizing habitat, utilities, and other infrastructure. For example, an acre of wildlife habitat, in a restoration project at the Mill Creek Confluence, burned in 2017 and then again in 2020. Fires were linked to campfires in encampments at the site.²⁴

SAFETY

Our communities are grappling with designing parks and open space for safety, while balancing goals for access, wildlife habitat, and water quality.

Utah's violent crime rate of 2.3 residents per 1,000 is lower than the national average. The national average is 3.7. South Salt Lake reports 9.6, Salt Lake City: 7.3, Murray: 4.3, Sandy: 1.6, and Cottonwood Heights: 1.3. Holladay, Millcreek, and Midvale were not reported. Being assaulted by a stranger is the number one violent crime concern in Utah, and it's the crime most people feel is most likely to happen.²⁵

According to *Blueprint Jordan River Refresh Survey Findings*, 24 percent said they don't feel safe visiting the Jordan River Trail. When surveying by gender, females' concern for safety went up to 35 percent. Out of 100 points, females spent 17 points on safety, the highest of their allocation to improve the Jordan River corridor. Most did not feel safety prevented them from using the river corridor.²⁶

The *Parks & Public Lands Needs Assessment* shows some inconsistencies. Most respondents felt safe alone in their neighborhood parks during the day and at night. When asked about the two major trail networks in Salt Lake City, 73 percent

felt safe alone during the day and 44 at night on the Bonneville Shoreline Trail. On the Jordan River Trail, 43 percent felt safe alone during the day and 16 at night.²⁷

According to the National Recreation and Park Association, "keeping park and recreation facilities safe is a key to community wellness and has a direct relationship to their usage rate." Integrated approaches are required to create and maintain safer parks and open spaces, including design, programming, maintenance, and engagement.²⁸ Efforts should address safety equally in all genders and cultures.

COMMUNITY INSTITUTIONS

An estimated 20 commercial activation points, 80 civic activation points, and 116 recreation activation points are located within 1/2 mile of the seven creeks. Currently, access to our greenways is focused at existing public lands, such as parks, natural areas, and open space. Private property complicates access. However, through partnerships with landowners, especially near commercial and civic activation points, access has been granted in formal or informal agreements.

For example, a trail winds along Big Cottonwood Creek through the Cottonwood and Old Mill Corporate Centers. The landowner donated rights-of-way as a means for tenants to access the creek and recreation opportunities.²⁹ The trail connects the city of Cottonwood Heights, the Old Mill Open Space, and the mouth of the Big Cottonwood Canyon underneath Interstate-215 to Knudsen Park and the rest of the city of Holladay.

Access agreements and partnerships with schools, churches, and other community

24 - Seven Canyons Trust, *Mill Creek Confluence Adaptive Weed Management Plan* (2020).

25 - United States Federal Bureau of Investigation, *Crime in the United States* (2018).

26 - Envision Utah, *Blueprint Jordan River Refresh Survey Findings* (2020).

27 - Salt Lake City, *Parks and Public Lands Needs Assessment* (2019).

28 - National Recreation and Park Association, *Creating Safe Park Environments to Enhance Community Wellness* (2012).

29 - Chakraborty, *5-mile trail coming to foothills near you* (2006).



Figure 10: Students learn about the Three Creeks Confluence in Salt Lake City.

institutions create quasi-public private space for the greenways. At the Bonneville First Ward in Salt Lake City, access agreements have extended the Miller Bird Refugee and Nature Park into The Bonneville Glen along Red Butte Creek. The connection creates access from 1500 E and 1000 S up to 900 S and 1700 E.

Our creeks flow within 1/4 miles of 40 schools and universities, 90 churches and other religious institutions, 11 community centers, and 10 other anchor community institutions.

PROGRAMMING

Activation is one of the key ways to improve safety. Programs, events, maintained landscaping, infrastructure, and facilities, particularly in low-income and diverse neighborhoods, draw more users to green spaces.³⁰ Events bring positive activity.

Through programming, participants interact with and learn about our creeks and the surrounding riparian environment. Environmental education teaches about ecosystems, issues they face, and ways humans cause harm. Participants are empowered through teachings to take action, become stewards, and improve ecosystems around them.

The Seven Creeks | Walk Series is a program to

30 - Dolash, *Factors that influence park use and physical activity in predominantly Hispanic and low-income neighborhoods* (2015).

observe and share stories, insights, and visions to better manage, restore, and love our creeks. Participants engage in on-the-ground actions to build community connection and improve their local ecosystems. After programming, 90 percent of participants reported they understood why creeks are important and 90 percent understood the issues they face. Approximately, 64 percent felt they made a difference during programming and 65 wanted to participate in stewardship actions again.³¹

Creeks function as living laboratories for nearby schools and institutions. For example, Westminster College students in the Environmental Studies program survey the hydrology of Emigration Creek, through the Seven Creeks | Walk Series. Students follow the creek as it goes below ground outside of campus, tracing it underneath houses, parking lots, and roads, to Liberty Park. They learn about opportunities to uncover the creek and actions they can take to improve its health. Students take this knowledge back to campus and use it to frame water quality testing on the creek and further education on its hydrology.

Programming improves inclusion. Events can express community identity, promote shared values, and create a sense of place. They can showcase underrepresented voices and be a format for public discourse. Parks and open spaces provide residents with gathering space to celebrate diverse traditions.

31 - Seven Canyons Trust, *Seven Creeks | Walk Series survey data* (2021).

OPPORTUNITY

Addressing equity and access in our COMMUNITY

Greenways bridge the east-west divide in the Salt Lake Valley to create a more resilient society and environment. Communities from the Wasatch Range to the Jordan River will have equitable access to public lands and connections to recreation, celebration, learning, and enjoyment. Inclusive park planning and design will systemically reduce barriers for underrepresented populations and provide space for diverse cultures, traditions, interests, uses, abilities, and ages.

Greenways are important to mitigate environmental injustices experienced by many in Salt Lake County. Through daylighting and restoration, creeks and adjacent riparian forests can more effectively clean water and air quality. Downstream communities on the west-side are faced with pollution from the more affluent east-side, including fertilizers, lawn debris, and other floatables that enter the storm drain. Natural creeks retain nutrients and clean water quality through streamside vegetation, streambank deposition, and groundwater infiltration.³² Increasing the urban forest and tree coverage, through the greenways, would filter air pollutants in the most impacted communities.³³ Whereas, underground streams provide no filtering of air and water through vegetation, both in-river and along streambanks.

Greenways will link west and east-side communities from the Wasatch Range to the Jordan River. Connections to destinations, regional transit systems, and other active transportation corridors reduces reliance on vehicles to commute, run errands, and recreate. Corridors will provide access to services, jobs,

entertainment, recreation, and leisure with a focus on adding parks, open space, and trails in the highest need communities.

Meaningful engagement requires building trust and a forum for dialogue. Addressing environmental injustices requires hearing from the populace that solutions would benefit. Programming should partner with existing community groups to engage residents through existing and trusted channels, while building capacity for the future.

Greenways provide spaces for cultural activities, as well as space for artists to perform, create, and display their works. At the Three Creeks Confluence in Salt Lake City, community designs were laser cut into steel plates featured on the east-west bridge that spans the uncovered creeks. Efforts showcase local west-side artists and designs that represent the surrounding community, while offering artists generous stipends for their work. Similar opportunities exist throughout the greenways.

Goals for our greenways can be contradicting. Healthy riparian habitat with a dense vegetation structure, including ground, shrub, understory, and canopy layers, can feel wild and unmaintained with plenty of places to hide. However, removal of all or some of these layers can diminish habitat value.

Nevertheless, greenways can be pleasant, welcoming, and well-used spaces. Graffiti, vandalism, and littering in natural, outdoor spaces is less frequent than comparable vegetation-devoid spaces.³⁴ There is a link between vegetation and lower crime in residential areas, particularly low-income and diverse urban neighborhoods. The presence of trees and well-maintained understory can strengthen ties among neighbors, increase informal surveillance, and deter crime.³⁵



Figure 11: A painted creek channel above underground creeks in Salt Lake City.

Conventional mitigation strategies for unsheltered homeless often have the opposite effect. They increase dependency on parks for residency with displacement and loss of belongings. Housing can take longer than 6 months to secure.³⁶ A comprehensive strategy to address unsheltered homeless in our greenways will be required. Limiting clean-up of camps and longer posting times would mitigate loss of belongings. Helping individuals get access to services or having service providers respond to public complaints would address the underlying reasons of homelessness.

Efforts are underway to provide resources and facilities for unsheltered folks. Practitioners along Red Butte Creek are exploring platforms that could serve as unsanctioned campgrounds. To provide bathrooms facilities for those experiencing homelessness, park managers are developing easily-cleanable portable toilets housed within established framed outhouses.

Showers can be an added amenity to support transitions into finding employment and housing.

Greenways should prioritize all ages and abilities. Identifying underrepresented populations is an important first step in removing barriers for equal access. An estimated 22 percent of Utah adults are living with disabilities.³⁷ To ensure equitable access, greenways should prioritize ADA-accessible trails, crossings, and facilities. Additionally, facilities and signage should use inclusive language and include Spanish translations, where feasible.

Loneliness in older adults is linked to higher risks for a variety of physical and mental conditions.³⁸ Greenways provide a place for meaningful activity, which maintains well-being and may improve cognitive function.³⁹ They can be areas to recharge our “Vitamin N,” as Richard Louv put it in his 2005 book, *Last Child in the Woods*.

32 - Salt Lake County, *Stream Care Guide* (2014).

33 - Klapproth, *Understanding the science behind riparian forest buffers* (2009).

34 - Brunson, *Resident Appropriation of Defensible Space in Public Housing* (1999).

35 - Kuo, *The Role of Arboriculture in a Healthy Social Ecology* (2003).

36 - Neild, *An exploration of unsheltered homelessness management on an urban riparian corridor* (2018).

37 - Utah Department of Health, *Disabilities and Health in Utah* (2020).

38 - Cacioppo, *Older adults reporting social isolation or loneliness show poorer cognitive function 4 years later* (2013).

39 - Cacioppo, *Loneliness: clinical import and interventions* (2015).