Final Closeout Report

EPA Urban Waters Small Grant

Reawakened Beauty: Jordan River Interactive Website

Revised with Comments

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UW 968178-01

Grant Final Technical Report prepared by:

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Urban Waters Small Grant
Reawakened Beauty: Jordan River

EPA Contract # UW-96817801-0
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Final Report
Reporting Period: May 1, 2013-April 30, 2015
Status: Project is complete

The "*Reawakened Beauty*" EPA Urban Waters Small Grant has been a very successful project. Although the project location is along the Jordan River within a section of the Salt Lake City, the project is very inclusive to all communities around the Jordan River and within the Jordan River Watershed. Due to this the outreach and capacity building of *Reawakened Beauty* project has been very effective in expanding the education and capacity building component beyond the original scope of the grant application. In addition the project encouraged collaboration with a variety of local municipalities, agencies, nonprofit organizations, students, and the interested public.

A watershed public opinion survey was performed at the end of the project to determine if this and other outreach efforts have been effective in capacity building as well as raising awareness of water quality issues throughout the watershed. This is a follow-up from surveys performed in 2010 and 2007.

	Total Partner Match	**Total Grant Funds**
Task 1-Adminstrative	$12,721.55	$7,264.90
Task 2-Education	$30,591.61	$29,460.10
Task 3-Interactive Webpage	$13,494.59	$23,275.00
	$56,807.75	**$60,000**

Tasks Accomplishments:

I. Task: Administrative

This is the final report. The majority of the initial administrative setup was completed in the first quarter. These responsibilities include the development of a draft contract with CDEA and an Interlocal Agreement with the Jordan River Commission, attending the River Rally Grant Administration Training, and organizing a method a to share and add information for stakeholders. Post the initial setup, reports updating the progress of the project were submitted quarterly to the EPA. The MBE/WBE reporting was done annually. Paying invoices to the partners was done quarterly or as needed. Invoicing the EPA was done every six months or as needed.

Table 1. Reporting Data

REPORT TYPE	REPORT NUMBER	DATE SUBMITED
EPA Quarterly	1	September 3, 2013
EPA Quarterly	2	December 5, 2013
EPA Quarterly	3	February 28, 2014
EPA Quarterly	4	May 29, 2014
EPA Quarterly	5	August 20, 2014
EPA Quarterly	6	November 24, 2014
EPA Quarterly	7	February 27, 2015
MBE/WBE	1	February 27, 2014
MBE/WBE	2	October 1, 2014
MBE/WBE	Final	May 27, 2015

Table 2. Administration Match Hours (81.13 hours, $12,721.55)

Reporting Period	Salt Lake County	Jordan River Commission	CDEA
May 1, 2013-July 31, 2013	24.5	20	6
August 1, 2013-October 31, 2013		3	-
Nov 1, 2013-January 31, 2014	-	-	-
Feb 1, 2014-April 30, 2014	-	-	6
May 1, 2014-July 31, 2014	-	-	11.75
August 1, 2014-October 31, 2014	8	-	-
Nov 1, 2014-January 31, 2015	-	-	-
Feb 1, 2015-April 30, 2015	1.88	-	-
Total Match Hours	**34.38**	**23**	**23.75**
Total Match Funds	**$1,280.31**	**$928.74**	**$712.50**
Watershed Opinion Survey	**$9,800**		
Total Match	**$11,080.31**	**$928.74**	**$712.50**

Table 3. Administrative Charge Hours and Travel (181.1 hours, $7,264.90)

Reporting Period	Salt Lake County	Jordan River Commission	CDEA
May 1, 2013-July 31, 2013	57	-	-
August 1, 2013-October 31, 2013	10.5	-	-
Nov 1, 2013-January 31, 2014	10	-	-
Feb 1, 2014-April 30, 2014	17.5	-	-
May 1, 2014-July 31, 2014	15.5	-	8.73
August 1, 2014-October 31, 2014	10.5	-	-
Nov 1, 2014-January 31, 2015	17.25	-	2.5
Feb 1, 2015-April 30, 2015	31.62	-	-
Total Charge Hours/Travel	**169.87**	**0**	**11.23**
Total Charge Funds	**$6925.00**	**0**	**$339.90**

A watershed public opinion survey was performed at the end of the project to determine if this and other outreach efforts have been effective in capacity building as well as raising awareness of water quality issues throughout the watershed (Appendix A). This is a follow-up from surveys performed in 2010 and 2007, which can be found at http://slco.org/watershed/pdfWLibr/index.html. The survey found residents knowledge about the watershed and water quality related issues has increased. Also, many residents are willing to pay a fee or tax to help with watershed stewardship.

Overall this task was completed on time and did not face any issues therefore all goals and accomplishments were met.

II. Task: Program 1 (Educational Program)

The education component started off strong and continued to grow as success of the project grew. This includes contacting interested stakeholders, developing outreach material, presenting at community councils, develop a draft Press Release, and host booths at community fairs.

- Contacted various additional potential stakeholders. This included Salt Lake City Parks and Recreation and the University Neighborhood Partners Group. This was ongoing endeavor of the project.
- Multiple meetings and communication on the Community Workshop material and information for the communities and neighborhoods.
- Presented project information at Community Council Meetings-This was to inform the communities about the project, get buy in and feedback and a method to seek out interested individuals and stakeholders. The community councils included: Rosepark, Northpoint, and Jordan Meadows.
- Developed a project outreach brochure.
- Hosted outreach booth at community events: This was to inform the neighborhoods and communities about the project as well as get feedback and buy in. Events include: Partners in the Park Community Fair, Poplar Grove Community Fair, and Northwest River Fest Community Fair.
- Developed a Draft Press Release for the local newspapers and press.
- Posted information on the JR Commission Newsletter and Website, Salt Lake County Facebook and listserv as well as various sources. This was an ongoing endeavor of the project.

The location of the project outreach and residencies was selected due to the strong Environmental Justice (EJ) component. Environmental justice (EJ) is defined by U.S. Environmental Protection Agency (EPA) as "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" (EPA, 2011). The overall goal of EJ considerations is to ensure that no group of people bears a disproportionate share of the negative environmental consequences of industrial, commercial, or governmental operations or policies.

The focus area for the project has a high minority population (95th State Percentile), is low income (88th State Percentile) as well as linguistically isolated (95th State Percentile). The EJ Index for water discharge proximity is in the 97th percentile for the State and 95th percentile for the EPA Region. This means this means that only 3 percent of the State population and 5 percent of the EPA Region population has a higher block group value than the average person in the Urban Waters Outreach project location being analyzed. The school residencies focused on West High School, which is the high school for the population of the project area. The attached EJ Screen Report gives additional detail (Appendix B). Furthermore, the outreach events and workshops occurred at related community councils as well as NeighborWorks Salt Lake.

Table 4. Environmental Justice Index for Urban Waters Outreach Project Area (EPA EJScreen Tool).

Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
EJ Indexes			
Particulate Matter (PM 2.5)	96	95	81
Ozone	95	93	85
Traffic Proximity and Volume	96	96	91
Lead Paint Indicator	98	96	89
NPL Proximity	98	99	98
RMP Proximity	96	95	90
TSDF Proximity	95	86	65
Water Discharger Proximity	96	94	87

The eight week residency at West High School (WHS) residency started with 60 students and three teachers participating in an introductory field trip to the Jordan River. However, after consultations with WHS faculty in mid-October 2013, we modified the residency to run an extra month fully meet student and faculty needs.

The WHS residency targeted three freshman classes—Earth Science, Geography, and Language Arts. Implementing a residency that interfaced simultaneously with three subject areas was challenging, yet the *Reawakened Beauty* syllabus was multi-faceted and interfaced well with science and humanities content. Our deeper challenge was helping students

develop content for use in the mobile website. Students had limited language arts and science backgrounds, so many of them struggled to find ways to present their responses to the residency and the river. Intensive restoration work on the river on October 25th 2013 impacted them powerfully, though, and seemed to offer the best opportunity for strong writing and photographing.

On the 15th November 2013, students returned on a follow-up field trip. The trip's goal was to complete earlier restoration work by placing ID markers on newly planted shrubs and saplings and scattering wood chips and grass seeds. Students also toured the Jordan River parkway trail that skirts the restoration site and discovered (and photographed) the closed-up Fisher Mansion.

January 2014 work involved several meetings with Salt Lake Center for Science Education (SLCSE) faculty to reintroduce the purposes of the grant, and review syllabus content for the second eight-week residency, which was began in the first week of February 2014.

The bulk of CDEA's fourth quarter activities dovetailed with its Salt Lake Science Education Center (SLCSE) artists/scholars-in-residence program. The residency's first class started on Monday February 3, 2014; students turned in final residency work on Friday April 11, 2014, right before the school went on spring break. For approximately ten weeks, residency presenters, supported by SLCSE faculty and administration, met with twenty-six SLCSE juniors (taking an advanced Language Arts course) to engage them with residency content and the Jordan River. CDEA's *Reawakened Beauty* curriculum had been discussed earlier with SLCSE faculty, and there was great teacher buy-in into the subjects students would explore, discuss, write about, and physically engage.

The residency used CDEA's 30-page *Reawakened Beauty; the Past, Present, and Future of the Jordan River* catalogue to introduce students to the human and natural history of the Jordan River and the residency itself. The catalogue establishes the residency's context by using photography, personal writing, and more formal scientific writing with illustrations to present the river's human and natural history. The catalogue was complemented by readings in *Entering Wild Space*, CDEA's 75-page student reader, which engages students with the writings of Aldo Leopold, Rachel Carson, Scott Momaday, Terry Tempest Williams, Mary Oliver, and other American writers who portray the nation's evolving ecological consciousness and experience with the natural world or the "wild."

Residency meetings built toward two Jordan River field trips, while encouraging students to experience the river during their free time. On the first field trip, which took place half-way through the residency, students were guided on an ecological survey of a portion of the river located just blocks from their school. Ecologist-in-Residence Dr. Ty Harrison introduced the

students to the invasive species proliferating on the river (Russian Olive, Oriental Elm, and others), the positive and negative impacts of beavers, and the habitat patches Salt Lake City's Open Space crew recently planted to introduce clusters of native plants. Students also photographed, wrote about the river, and recorded their perceptions, feelings, concerns, questions, etc.

The final field trip took place closer to the residency's conclusion and focused on planting Peach Leaf Willow saplings and germinated Peach Leaf branches on the east bank of the river to provide bank stability and beaver food (this was meant to distract beavers from girdling some of the larger native trees further inland). Students prepared for the work by carrying out a food web exercise. Salt Lake City's Open Space Crew joined the students and provided planting bars, shovels, and work gloves. The field trip was followed by the final residency project, in which pairs of students prepared content for use on the mobile website.

May 2014 (first month of the first quarter of 2014-2015) was focused on completing evaluations for both West High School (WHS) and Salt Lake Center for Science Education (SLCSE) *Reawakened Beauty* residencies. A new set of WHS evaluations was made possible by WHS faculty's request to bring students back to the Habitat Patch they had worked on in the fall of 2013. Teachers and students wanted to see how well their plants were doing and to carry out site clean-up activity. The return of students to the restoration site allowed CDEA to bring in a small video crew and conduct on-site video interviews with a number of WHS students, exploring what they had gained or learned from the residency in general and what they received from the field work specifically. The SLCSE student evaluation was a written, post-residency questionnaire that was developed in May; it asked students to respond to all facets of the residency. It was completed by SLCSE students during one full class session, about 75 minutes.

June and July 2014 were primarily focused on preparing student- and adult-generated residency material for use in the forthcoming mobile website. The website was planned to go live at the end of July or beginning of August. The website content-preparation process began in early June with a presentation of SLCSE student content at a Rose Park Community Council meeting. The presentation aimed at engaging adult Rose Park residents with student-generated content to show them how they could provide a range of similar content for the website. There was a substantial and enthusiastic turnout. Following the CDEA-JRC presentation about twenty Rose Park Community residents signed up to participate in the next community meeting at which residents would learn to upload mobile website content. Additionally, CDEA staff and consultants worked during the month of July to edit student writing and select student images for use in the community-based Mobile Website. The CDEA and consultants team made contributions—now on line—to all five website learning paths: History, Community, Water, Ecology, and Recreation.

Second quarter of 2014 (August, September, October) activities supported the Jordan River Commission's effort to populate the mobile website with additional content and to utilize community networks and local media (newspapers and television) to get the word out on the existence, usability, and importance of the website. All these activities are continuing, and CDEA expects to stay involved in community outreach for the duration of the grant and, if possible, beyond.

In the seventh quarter, CDEA completed the *Reawakened Beauty: The Past, Present, and Future of the Jordan River* artists/scholars-in-residence program at the Salt Lake City Pacific Heritage Academy (PHA), a new public charter school located at 1755 West 1100 North. Although this residency was not funded by the EPA, place-based learning at the academy (located three blocks from the river and adjacent to Rose Park, one of our original target neighborhoods), provided content that will be used to further populate the Jordan River Commission's (JRC) mobile website, enhance environmental stewardship education for students and the local community, and contribute toward the health of the Jordan River.

Specifically, seventh grade PHA students worked with residency ecologists Ty Harrison and Eric McCulley to co-design a *Wildlife Grove* for the school's campus. The campus is located on the corner of 1100 North and Redwood Road and faces residences on its north, west, and east sides. The grove was ceremonially planted on Friday morning, November 14, 2014, with significant press coverage and contains trees and shrubs common to the Jordan River and aims to provide students and local residents a unique observation garden to learn about native trees and plants and study the birds, insects, and mammals that are attracted to them. The grove's native species also reminds students and residents that the same shrubs and trees can be planted along the Jordan River in continuing ecological restoration projects as well as in people's yards to attract wildlife.

Overall, the education and student residency component of the EPA Urban Waters *Reawakened Beauty* Project was a great success. It educated both students, faculty, and staff at local schools that would normally not be given such opportunities. The field trips gave students hands on experience and open a window of possibilities to ecological stewardship. This portion expanded the capacity building of the Jordan River community and continues to do so.

Table 5. Education Match Hours (947.05 hours, $30,591.61)

Reporting Period	Salt Lake County	Jordan River Commission	CDEA
May 1, 2013-July 31, 2013	5.5	88	30
August 1, 2013-October 31, 2013	22.5	102.5	56.31
Nov 1, 2013-January 31, 2014	-	-	67.38
Feb 1, 2014-April 30, 2014	-	-	119.96
May 1, 2014-July 31, 2014	-	-	-
August 1, 2014-October 31, 2014	-	-	348.9
Nov 1, 2014-January 31, 2015	-	-	106
Feb 1, 2015-April 30, 2015	-	-	-
Total Match Hours	**28**	**190.5**	**728.55**
Total Match Funds	**$1,042.72**	**$7,692.39**	**$21,856.50**

Table 6. Education Charge Hours (823.30 hours, $29,460.10)

Reporting Period	Salt Lake County	Jordan River Commission	CDEA
May 1, 2013-July 31, 2013	-	-	90
August 1, 2013-October 31, 2013	-	-	254.85
Nov 1, 2013-January 31, 2014	-	-	154.41
Feb 1, 2014-April 30, 2014	-	-	209.19
May 1, 2014-July 31, 2014	-	-	123.85
August 1, 2014-October 31, 2014	-	-	-
Nov 1, 2014-January 31, 2015	-	-	-
Feb 1, 2015-April 30, 2015	-	-	-
Total Charge Hours	**$0**	**$0**	**823.3**
Total Charge Hours	**$0**	**$0**	**$29,460.10**

Overall this task was completed on time and did not face any issues therefore all goals and accomplishments were met and far exceeded expected accomplishments and outcomes. In addition, due to this project, the CDEA has continued the residency program and meet with students and the community.

III. Task: Program 2 (Smartphone App/Interactive Website Development)

The JRC has initiated work to develop the mobile website component of this project. A Request for Proposals was issued, and a consulting team, Braindunk, was selected through this competitive bid process. Braindunk and the JRC held a full-day kickoff workshop to get started on this piece of the project in January to outline the objectives and goals of the mobile website development process with all key grant partners. Community members joined the meeting to help think through the ways the general public will use and contribute to the mobile website, and an afternoon meeting went through the same process with students and educators participating in the school residencies. Braindunk prepared a summary of the comments and ideas gathered through these user-group meetings to help guide the development of the mobile tool.

Following the kick-off meeting, Braindunk developed a draft "Functional Specification," a document that outlines the basic framework the mobile website. The JRC reviewed this and provided feedback which was then incorporated into a final Functional Specification. The domain name www.myjordanriver.org and Braindunk has completed four rounds of prototype website designs before arriving at the design found at this URL. The Jordan River Commission sifted through the content developed by the students during the residencies and populated the mobile website with content developed by the students and the Jordan River Commission's Technical Advisory Committee (TAC).

The website went through extensive testing and stakeholder input before becoming live the end of July 2014 (Figure 1). A press release announcing the website was released to the local newspapers however the press release was not picked up by the papers. In addition, announcements were made on social media including the Salt Lake County Watershed Planning & Restoration Program Facebook page and the Jordan River Commission Facebook Page. As part of the interactive webpage kickoff, it was encouraged that the community contribute stories and information to the webpage and community contributors were eligible to win fun prizes including four Flash 18 backpacks donated by REI.

Figure 1. Reawakened Beauty myjordanriver.org Interactive Website

After the interactive website went live the partners continued to populate and update the website with additional content and to utilize community networks and local media (newspapers and television) to get the word out on the existence, usability, and importance. Since the start of the interactive website there have been around 32,000 site visits (Table 6). The website continues to be updated and used. It is the hope of the partners that this website can expand to the entire Jordan River Watershed and increase the capacity building of the all communities it represents.

The final website is very interactive and contains multiple layers including:

- A digital map of the Parkway including trailheads, transit connections, water quality data, and parkway features (fishing ponds, restoration areas, dog parks, wildlife viewing areas).
- A Report an Issue feature, which allows trail users to help identify needs for parkway improvement and aid parkway managers with early identification of issues. For example, user can report a water quality or public safety issue along the river (Figure 2).
- A series of interpretive stops that contain educational information about the river corridor including water quality, river habitat, ecology, and wildlife (Figures 3-4).
- The website includes information on river restoration and water quality improvement projects, nonpoint pollution, and stormwater pollution.
- Includes a calendar of upcoming events associates with the river and watershed.

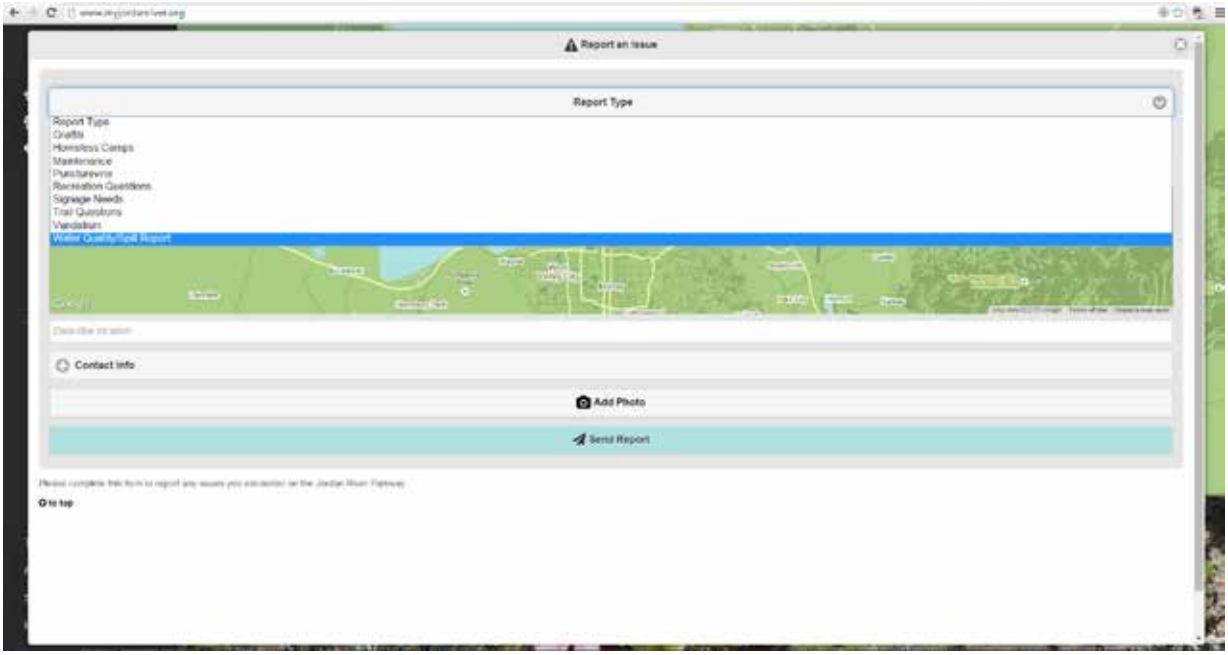


Figure 2. myjordanriver.org Webpage Report an Issue Component

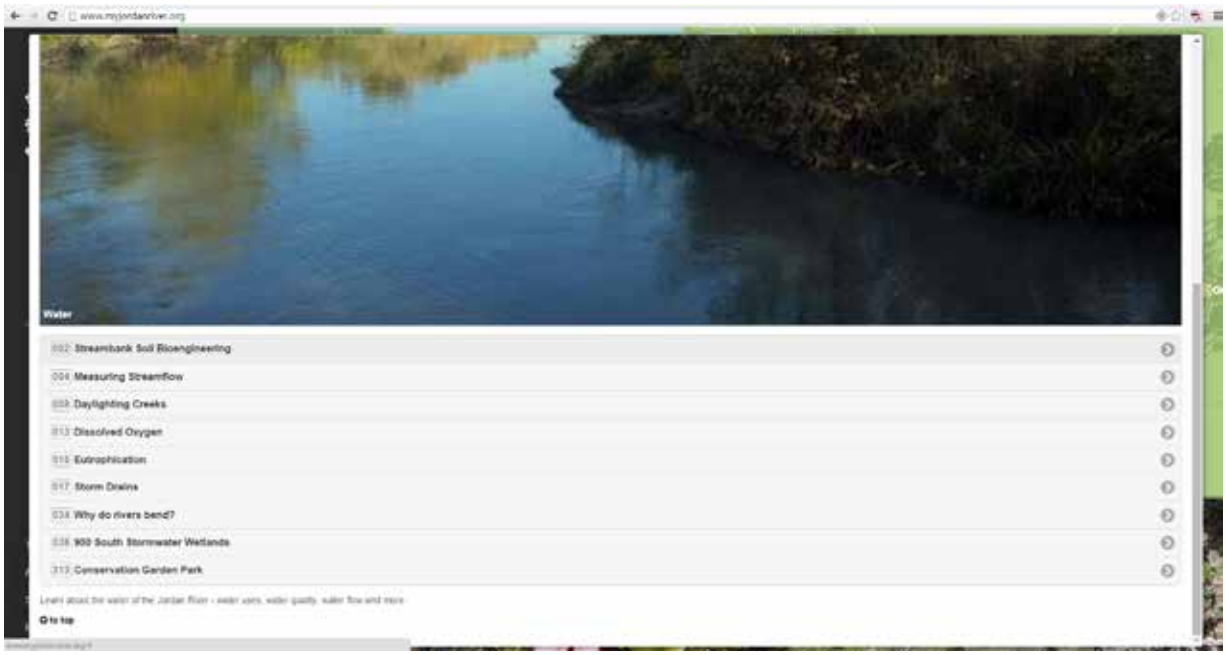


Figure 3. myjordanriver.org Webpage Water Quality Components

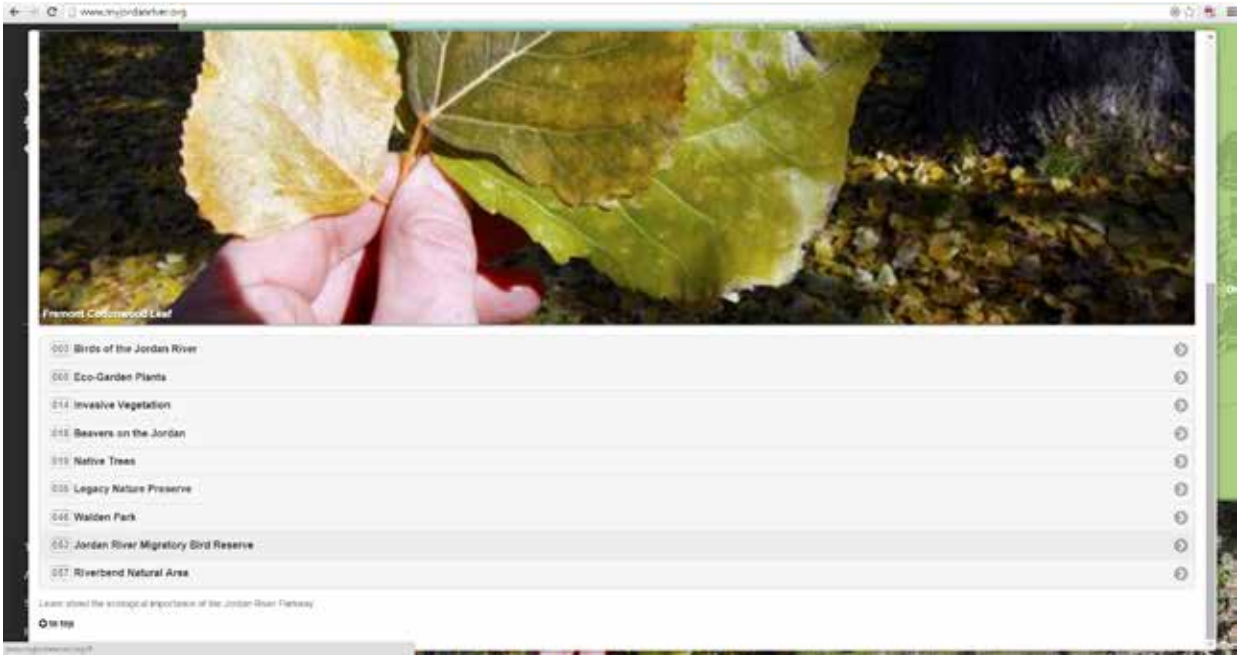


Figure 4. myjordanriver.org Webpage Ecology Components

Table 7. myjordanriver.org Interactive Site Visits

	Individual Visits	Unique Visits
2014	4,907	8,626
2015	5,853	12,231
Total	**10,760**	**20,857**

Table 8. Interactive Website Match Hours (339.75 hours, $13,494.59)

Reporting Period	Salt Lake County	Jordan River Commission	CDEA
May 1, 2013-July 31, 2013	-	16	-
August 1, 2013-October 31, 2013	2.5	15	-
Nov 1, 2013-January 31, 2014	4	34.5	-
Feb 1, 2014-April 30, 2014	1	29.25	-
May 1, 2014-July 31, 2014	4.5	185	18
August 1, 2014-October 31, 2014	-	26	-
Nov 1, 2014-January 31, 2015	-	4	-
Feb 1, 2015-April 30, 2015	-	-	-
Total Match Hours	**12**	**309.75**	**18**
Total Match Funds	**$446.88**	**$12,507.71**	**$540.00**

Table 9. Interactive Website Charge Hours/Website Development (0 hours, $23,275.00)

Reporting Period	Salt Lake County	Jordan River Commission	CDEA
May 1, 2013-July 31, 2013	-	-	-
August 1, 2013-October 31, 2013	-	-	-
Nov 1, 2013-January 31, 2014	-	-	-
Feb 1, 2014-April 30, 2014	-	-	-
May 1, 2014-July 31, 2014	-	-	-
August 1, 2014-October 31, 2014	-	-	-
Nov 1, 2014-January 31, 2015	-	-	-
Feb 1, 2015-April 30, 2015	-	-	-
Total Charge Hours	**0**	**0**	**0**
Website Development	**$0**	**$23,275.00**	**$0**
Total Charge Funds	**$0**	**$23,275.00**	**$0**

Overall this task was completed on time and did not face any issues therefore all goals and accomplishments were met. Although in the fourth quarter this task was a little behind schedule due to the RFP process, Braindunk quickly made up time and the interactive website went live July 2014.

IV. Conclusion

This project has been a tremendous accomplishment and has far exceeded the goals and objectives of the Urban Waters Grant. The project and deliverables we completed on time and with outstanding success. There was a significant Environmental Justice component to the project and also directly addressed water quality and watershed stewardship issues in the Jordan River Watershed. Although the grant has expired, the www.myjordanriver.org interactive website continues to be updated with additional and new material. Also, the website visitation continues to grow as knowledge of the website expands.

Salt Lake County Watershed Planning & Restoration Program, the Jordan River Commission, and the Center for Documentary and Expression Arts as well as all the stakeholders, communities and the interested public are very appreciative to the EPA for the opportunity to pursue this project along the Jordan River. This has been a very enjoyable project to work on and one that will continue as well as expand for many years to come.

APPENDIX A

SALT LAKE COUNTY

WATERSHED PLANNING & RESTORATION PROGRAM

PUBLIC OPINION SURVEY

APPENDIX A

ENVIRONMENTAL JUSTICE (EJ) ANALYSIS REPORT

EPA URBAN WATERS

PROJECT AREA

EDUCATION AND OUTREACH

http://ejscreen.epa.gov/mapper/

Project Overview

Salt Lake County commissioned this public opinion survey of the County's residents to assess residents' attitudes and practices related to local watersheds. The objective of this research is to determine the public's priorities to help guide the efforts of the County's Watershed Planning and Restoration Program. The survey explored what residents value in their watersheds, the threats they feel local waters face, land use priorities, perceptions of water quality, public policy proposals, funding availability, and outdoor recreation.

Project Team and Methodology

Steve Raabe was the project manager of this effort for OpinionWorks and has authored this analysis. The County's team was led by Marian Hubbard and Lynn Berni of the Salt Lake County Watershed Planning & Restoration Program. The survey questionnaire was designed to track results from prior surveys conducted in 2007 and 2010.

For this countywide survey, OpinionWorks interviewed a total of 400 randomly-selected adult residents of Salt Lake County by telephone January 21–30, 2015. Sampling error is no more than ±4.9% at the 95% confidence level. A more detailed description of the survey methodology is found at the conclusion of this research summary.

Tracking Changes in Attitudes from 2007 and 2010

Many questions on the current survey were carried forward from prior surveys commissioned by Salt Lake County in 2007 and 2010. Where questions on the surveys are directly comparable, those results are tracked and highlighted in this report's tables, graphics, and narrative. Where a question was not previously asked, or where there were significant wording changes that made a question not comparable year-to-year, no historical trend data will appear in this report.

As a general observation, nearly all the questions that can be tracked from prior surveys showed a decline from 2007 to 2010, but many bounced back in 2015 to levels at or near their 2007 baseline. This may be due to externalities such as economic recession and recovery, and/or it may reflect a changing experience of residents with their local waters and the outdoors. This report makes note of these changes and will attempt to explain them where possible.

An abstract of findings follows.

Abstract of Findings

This comprehensive survey of Salt Lake County residents shows a public that is heavily engaged with the outdoors, and places a high priority on clean water. In a variety of ways in the survey they indicated support for more action by the County to promote watershed health, and a willingness in the public to pay more for water protection.

These are the high-level findings:

- The survey documents strong engagement with the outdoors, with more than three-quarters of the County's residents picnicking or walking in neighborhoods or parks at least monthly, and large numbers getting outdoors in the wilder areas of the County on a regular basis.

- Residents place great *value* on spending time in the outdoors. Nearly two-thirds said that outdoor leisure and recreational activities are "very important" to their overall satisfaction and happiness.

- As a personal priority, conservation of the natural environment is important to residents, with many more residents feeling an above-average commitment to conservation compared to those who feel a below-average commitment – in fact *six times* more.

- Only one resident in ten feels "very familiar" with water quality concerns in the County, and nearly four in ten said they do not feel familiar *at all* with those concerns.

- What residents value the most in the County's watersheds is water quality, which by itself is more valued by residents in their watersheds than recreational opportunities, scenery, wildlife habitat, and a strong economy – *combined*.

- Having an adequate supply of good drinking water is the top concern out of eight tested, when it comes to residents' concerns about local watersheds.

- Industrial pollution and litter problems are also significant concerns, rounding out the top three. Following those are concerns about loss of fish or wildlife habitat, restrictions on activities due to water contamination, and loss of open space from development pressures.

- The Jordan River is generally understood to have poor water quality, though only one in five are aware that it is "impaired and a plan is underway to clean it up." Residents have varied impressions of how clean and heathy is the stream or creek closest to where they live.

- Residents see a positive relationship between better water quality and economic development, and they do not believe water quality should be – or needs to be – traded off to promote economic development.

- Residents fall all across the spectrum of whether they believe their own actions affect water quality – in nearly equal numbers strongly agreeing and strongly disagreeing that their actions affect water quality, and every point in between.

- In terms of land use, residents would like to see more wildlife habitat, river corridors in their natural condition, and protection of open space. Residents would also like to see more outdoor recreational activities available to them.

- Nearly six in ten residents think the County government should be doing more to protect local waters. Only one in four think the County is doing enough today.

- Residents strongly support four public policy ideas that would promote water quality, including requiring streamside plantings, and requiring new developments to set aside open space and make built-in improvements to address water quality.

- There is overwhelming support for more public funding to protect local waters, with four out of five residents favoring a "reasonable" amount of additional public funding if County leaders said it was necessary.

- Majorities of residents support each of four specific funding measures tested, with support reaching as high as 61%.

Our detailed report follows.

Outdoor Recreation and Valuing the Outdoors

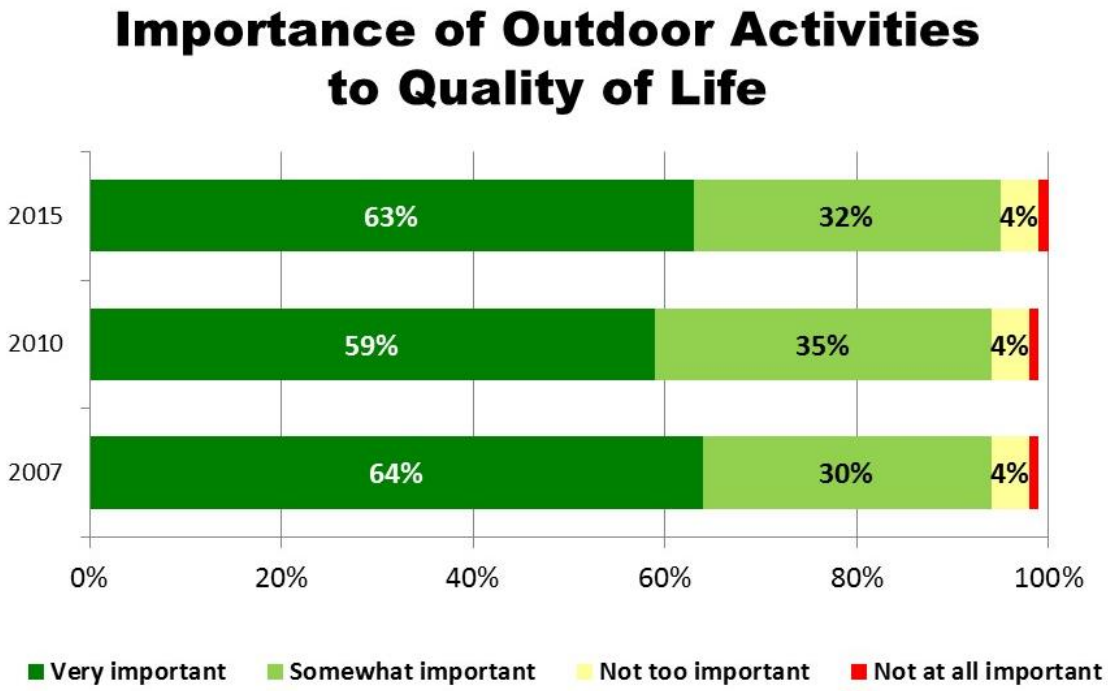
To understand County residents' connection to the outdoors, we explored their outdoor recreational pursuits. We found that Salt Lake County residents engage in a wide variety of outdoor activities. The overall picture is a public that likes to get outdoors. Their outdoor activities are summarized in the chart below, which identifies the percentages of residents who engage in each activity on at least a weekly (in dark green), monthly (light green), or annual (yellow) basis.

Q12 "On overage, how often do you participate in the following recreational activities within the Salt Lake County area? At least 1 or 2 times a week, at least 1 or 2 times a month, at least 1 or 2 times a year, or not at all?"

- Picnicking or walking in parks or neighborhoods is the most common outdoor activity for County residents, with 95% of those surveyed taking part at least once a year, and 40% saying they picnic or walk at least once or twice a week.
- A very large number of residents (83%) use trails along the County's creeks and rivers on at least an annual basis, with 52% doing so monthly.
- There is very high use of the canyons and other wild areas of the County through hiking, mountain biking, or camping. Eighty-four percent of Salt Lake County residents get out in the surrounding wild areas at least once a year; almost half (45%) said they do so at least monthly.
- With regard to the Jordan River Parkway Trail specifically, 52% of residents said they use the trail at least once a year. Almost one in four (22%), said they use it monthly.
- Forty-four percent hunt or fish at least once a year, with 12% doing so at least once a month.
- Bird watchers account for 31% of the public, with 17% bird watching at least once a month.

Salt Lake County residents place great value on outdoor recreation. Nearly two-thirds (63%) said that outdoor leisure and recreational activities are "very important" to their "overall quality of life, in other words your overall satisfaction and happiness." Another 32% consider outdoor leisure and recreational activity to be "somewhat important" to their quality of life, for a total of 95% of County residents who said outdoor leisure and recreational activities are important to their overall satisfaction and happiness.

Compared to prior years, the overall importance of outdoor recreation has remained very high, with the percentage who said it is "very important" increasing slightly since 2010.



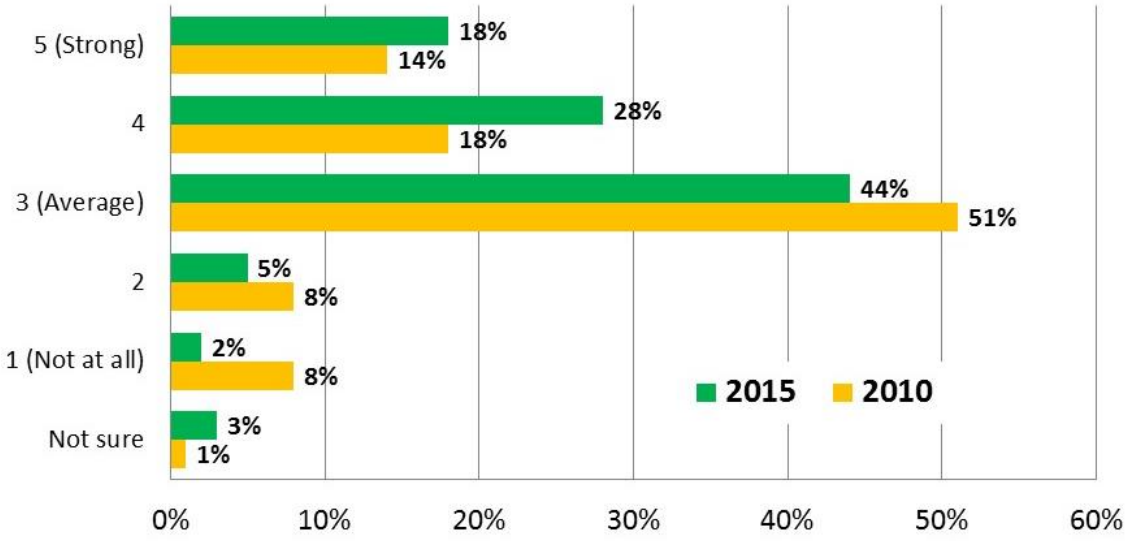
Q13 "How would you rate the importance of outdoor leisure and recreational activities to your overall quality of life, in other words your overall satisfaction and happiness? Very important, somewhat important, not too important, not at all important?"

The Natural Environment as a Personal Priority

On balance, Salt Lake County is strongly conservation-minded. Conservation of the natural environment is a personal value for many residents. Asked to rate themselves on a 1 to 5 scale where "5" means "strongly committed to conservation of the natural environment" and "1" means "not a conservationist at all," 46% of Salt Lake County's residents rated themselves above average on that scale, compared to only 7% who considered themselves below the average. Many residents (44%) feel they have an average concern (a "3") for conservation of the natural environment.

Conservation-Minded Residents

A Self-Assessment



2015: "On a scale of 1 to 5 where 5 means you are strongly committed to conservation of the natural environment, 3 is average, and 1 is not a conservationist at all, where would you put yourself?"

2010: "On a scale of 1 to 5 where 5 is a strong environmentalist, 3 is average, and 1 is not an environmentalist at all, where would you put yourself?"

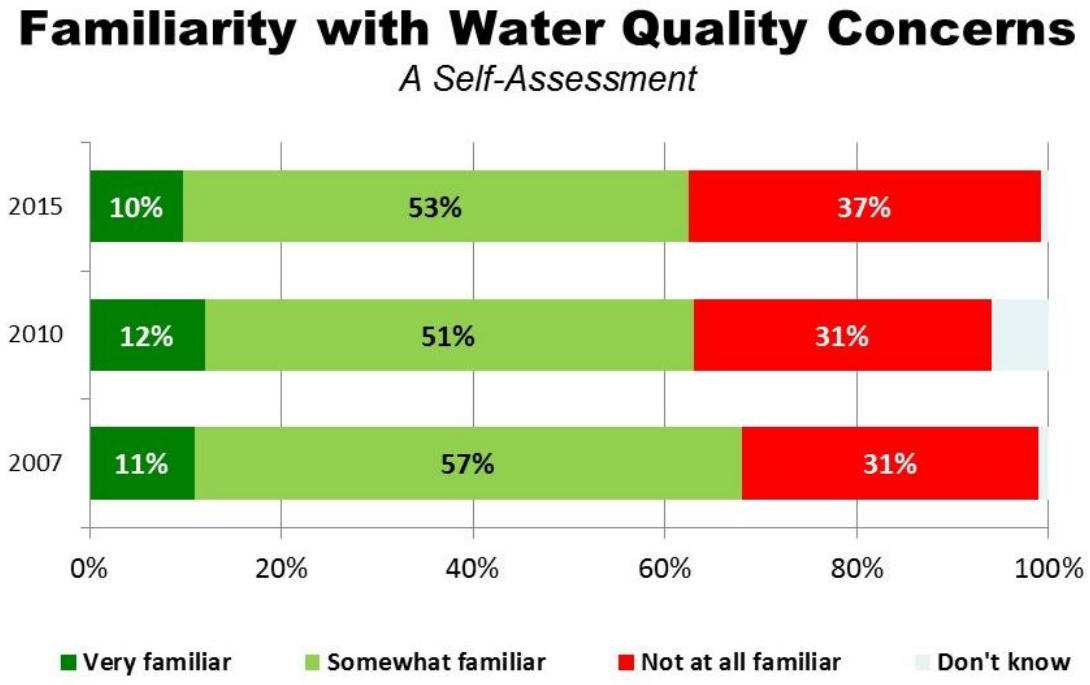
In 2010, this question asked how strongly residents considered themselves to be an "environmentalist," rather than "committed to conservation of the natural environment." Worded that way, 32% gave themselves an above-average score, a rating that is 14 percentage points lower than in 2015.

Water Knowledge, Priorities and Concerns

Familiarity with Water Quality Concerns

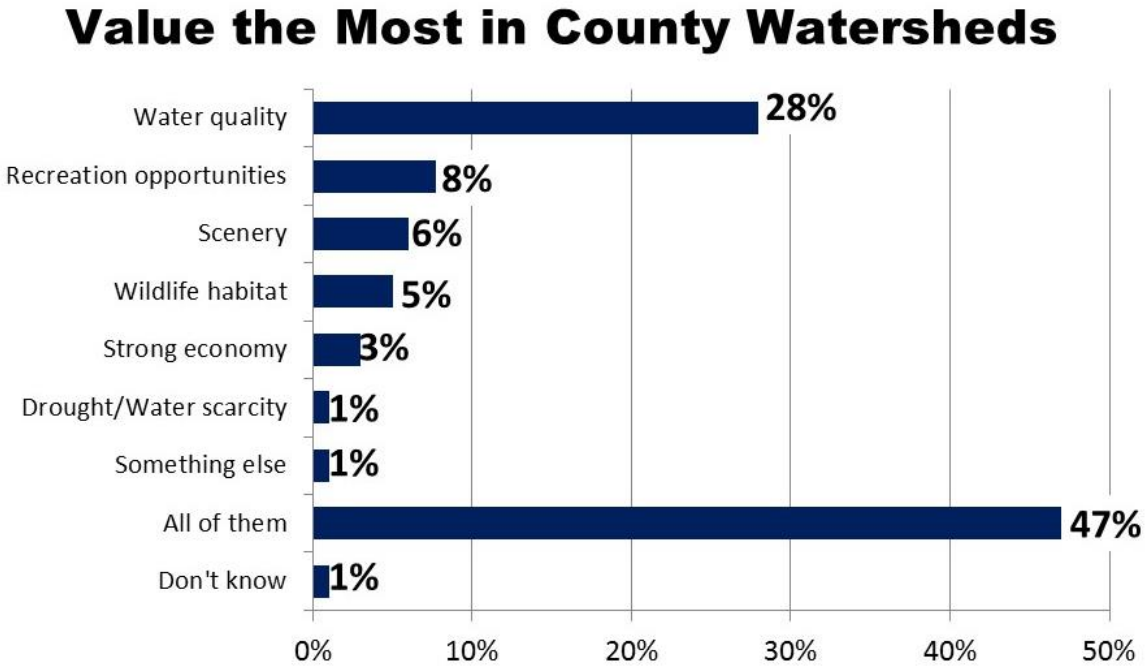
The public does not have great confidence in its knowledge of water quality concerns. More than one-third of the public (37%) said they are "not familiar at all" with water quality concerns in the County's streams and rivers. Another 53% feel "somewhat familiar." Only 10% consider themselves "very familiar" with those concerns.

The public felt slightly more familiar with water quality concerns in 2007, with 68% feeling at least somewhat familiar, compared to 63% in 2015.



Q1 "Are you very familiar, somewhat familiar or not at all familiar with water quality concerns in our streams and rivers in Salt Lake County?"

When asked what they value most in the County's watersheds, residents value water quality by more than three-to-one over any other asset. When read a list that included water quality along with wildlife habitat, recreation opportunities, scenery, strong economy, market value of property, "or something else," 28% of residents said they value water quality most of all, compared to 8% who said recreation opportunities, 6% who said scenery, and 5% who chose wildlife habitat. Nearly half (47%) did not choose a single response but instead said "all of them."



Q2 "A watershed is a land area where all the rainwater and snow melt drain into a single creek, river, or body of water. What do you most value in Salt Lake County's watersheds?"

Comparing these numbers to past surveys, water quality has consistently scored the highest. Note that "all of them" was not offered as an option in prior years, causing some of the ratings in 2015 to appear lower.

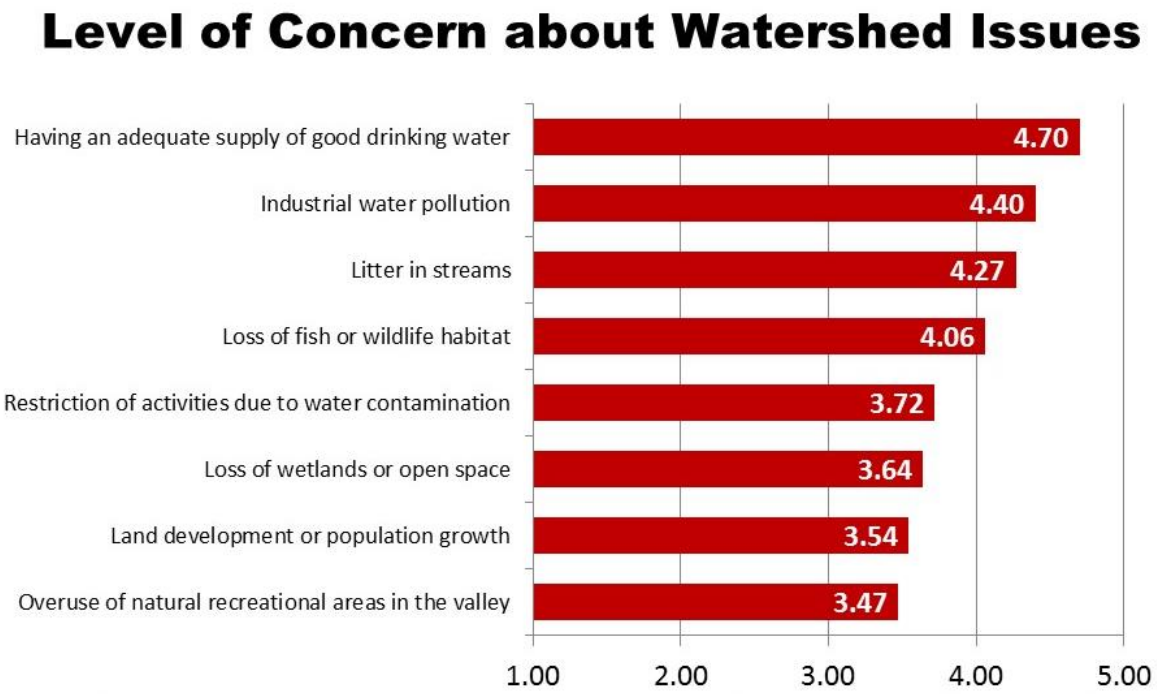
Change in What Residents Value

	2007	2010	2015
(Not read): All of them	*	*	47%
Water quality	51%	50%	28%
Recreation opportunities	10%	8%	8%
Scenery	8%	6%	6%
Wildlife habitat	13%	14%	5%
Strong economy	2%	3%	3%
Water scarcity/Drought	*%	*%	1%
Market value of property	4%	2%	*%
Something else	9%	4%	*%
Don't know	3%	14%	1%

"A watershed is a land area where all the rainwater and snow melt drain into a single creek, river, or body of water. What do you most value in Salt Lake County's watersheds?"
*Prior to 2015, "all of these" was not coded; many people offering that response were coded "something else or "don't know."

Watershed Concerns

Survey respondents were asked to rate their level of concern for a number of issues facing the County's watershed. A total of eight issues were tested, ranging from litter in streams to loss of fish or wildlife habitat, to industrial water pollution. Each of these issues was rated on a 1 to 5 scale, where "1" meant "no concern at all," and "5" meant the issue "is of great concern."



Q3 "As I read a list of potential issues facing Salt Lake County's watersheds, please rate your concern about each using a 1 to 5 scale, with 1 meaning it's of "no concern at all" and 5 meaning it is of "great concern."

The top concern out of the eight, scoring an overwhelming 4.70 out of 5.00 on this scale, is concern for having an adequate an adequate supply of good drinking water. This very high level of concern in the public may be related to worries about water scarcity, given the emphasis in the question on "adequate supply." It may also indicate concerns about contamination, given the mention of "good drinking water." Regardless, it should be known that drinking water is the leading watershed concern of the County's residents.

Two issues related to pollution are next, followed by habitat loss, all scoring above 4.00 on the scale:

- Industrial water pollution is very high on this list of concerns, placing second and scoring 4.40 out of 5.00.
- Litter in streams is the third-greatest concern at 4.27.
- Loss of fish or wildlife habitat is next, registering at 4.06.

Moving down the list, other concerns relate to impacts on recreation and open space. Though lower in priority in the public's mind, all of these concerns score above the mid-point of the scale of concern:

- Restriction of activities due to water contamination scored 3.72.

- Loss of wetlands or open space is 3.64.
- Land development or population growth received a rating of 3.54.
- Overuse of natural recreational areas in the valley earned a score of 3.47.

Comparing 2015 results to prior surveys, having an adequate supply of good drinking water has consistently been the public's top concern. Though there have been variations in the intensity of concern from year to year, the rank ordering of concerns has been almost identical throughout this eight-year period.

Comparing Change in Watershed Concerns

	2007 Mean	2010 Mean	2015 Mean
Having an adequate supply of good drinking water	4.78	4.52	4.70
Industrial water pollution	4.61	4.17	4.40
Litter in streams	4.45	4.18	4.27
Loss of fish or wildlife habitat	4.14	3.94	4.06
Restriction of activities due to water contamination	3.94	3.55	3.72
Loss of wetlands or open space	3.77	3.50	3.64
Land development or population growth	3.84	3.40	3.54
Overuse of natural recreational areas in the valley	3.72	3.07	3.47

"As I read a list of potential issues facing Salt Lake County's watersheds, please rate your concern about each using a 1 to 5 scale, with 1 meaning it's of 'no concern at all' and 5 meaning it is of 'great concern.'"

Health of Creeks and Rivers

The public's perception of the health of creeks and rivers is an important indicator of how readily they can be engaged with watershed protection activities. Residents were asked to grade three waterways on an A to F grading scale: the Jordan River, Big Cottonwood Creek, and "the stream or creek closest to where you live." On this scale, "A" means "extremely clean and healthy," and "F" means "extremely polluted and unhealthy." Results are summarized in the chart on the following page.

Grading the Health of Creeks and Rivers

Q6 "Students are often given the grades of A, B, C, D, or Fail. From what you know or have heard, how would you grade the following creeks or rivers on that A to F scale where "A" means it is extremely clean and healthy, and "F" means it is extremely polluted and unhealthy?"
***"The stream or creek closest to where you live."**

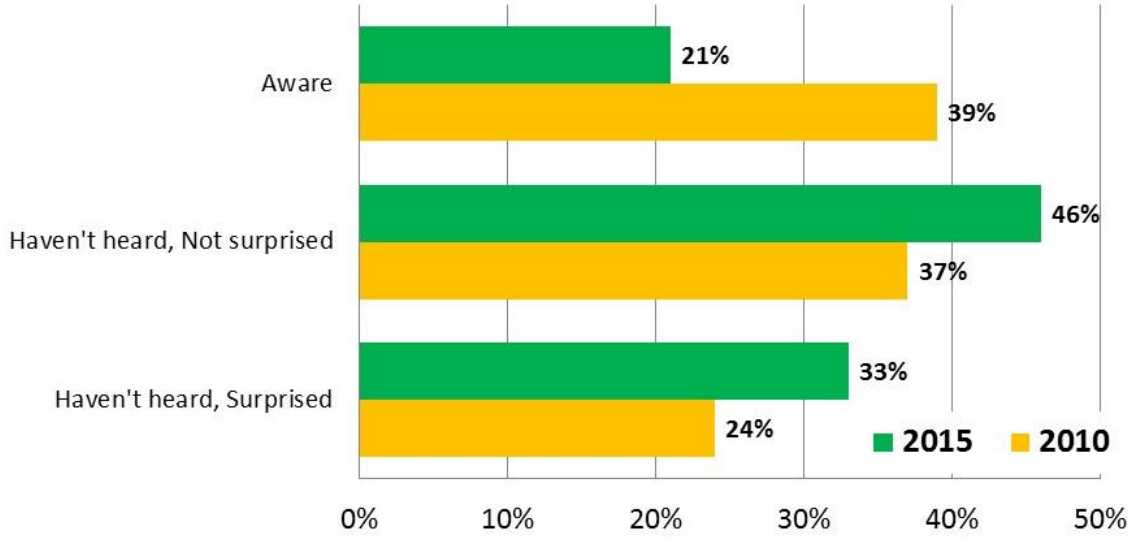
Grades varied dramatically.

- The health of the Jordan River is seen as poor by the public. Only 11% offered a grade of "A" or "B" for the Jordan River. Meanwhile, 19% gave the river a failing grade of "F," and another 26% gave it a "D."
- Big Cottonwood Creek scored much better, with 17% giving it an "A" and 50% a "B." Fifteen percent gave the Big Cottonwood a "C" grade, only 2% a "D," and no one gave it a failing grade.
- Grades for "the stream or creek closest to where you live" fell between those two. Eight percent gave their local stream or creek an "A," 30% a "B," and 26% a "C." Fifteen percent offered a "D" and 9% an "F."

Despite the poor grades for the Jordan River, awareness of its impairment and the plan to clean it up appear to have declined significantly since 2010. In the prior survey, nearly four in ten (39%) said they were aware that the Jordan River's water quality is "impaired and a plan is underway to clean it up." In 2015, that number had dropped almost in half to 21%.

Of the 79% of the public in 2015 who were not aware of the Jordan River's impaired status, 33% said they were surprised to find that out, while 46% were not surprised. As a further indicator of the public's lack of information about the Jordan River, the percentage who were surprised has climbed nine percentage points from 24% in 2010 to its 33% level today.

Awareness that Jordan River is Impaired



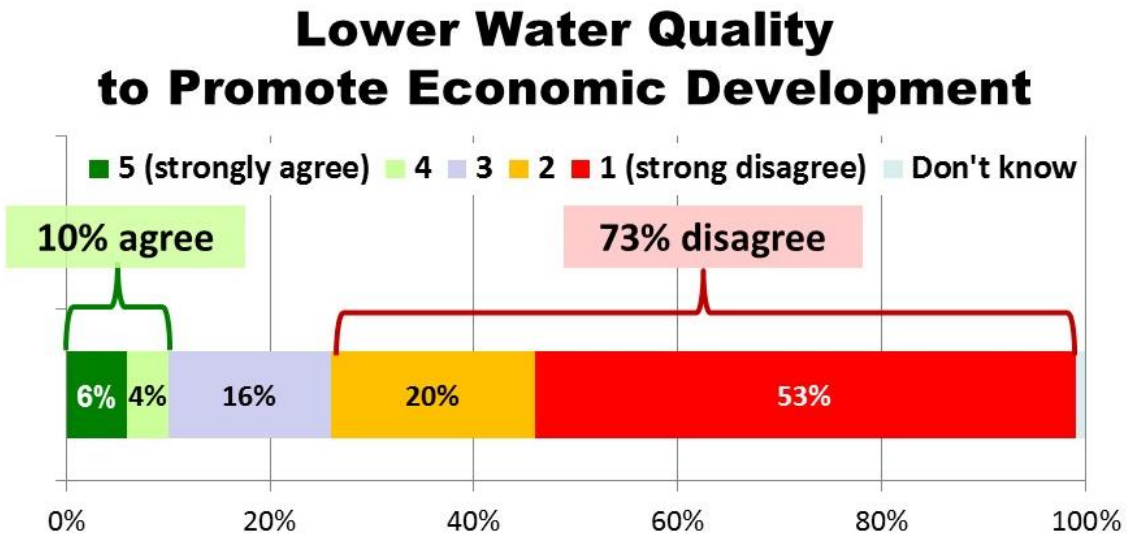
Q7 "Are you aware or haven't you heard that the Jordan River's water quality is impaired and a plan is underway to clean it up?" (If haven't heard/don't know): "Does that surprise you?"

Attitudes and Public Will

Attitudes about Water Quality

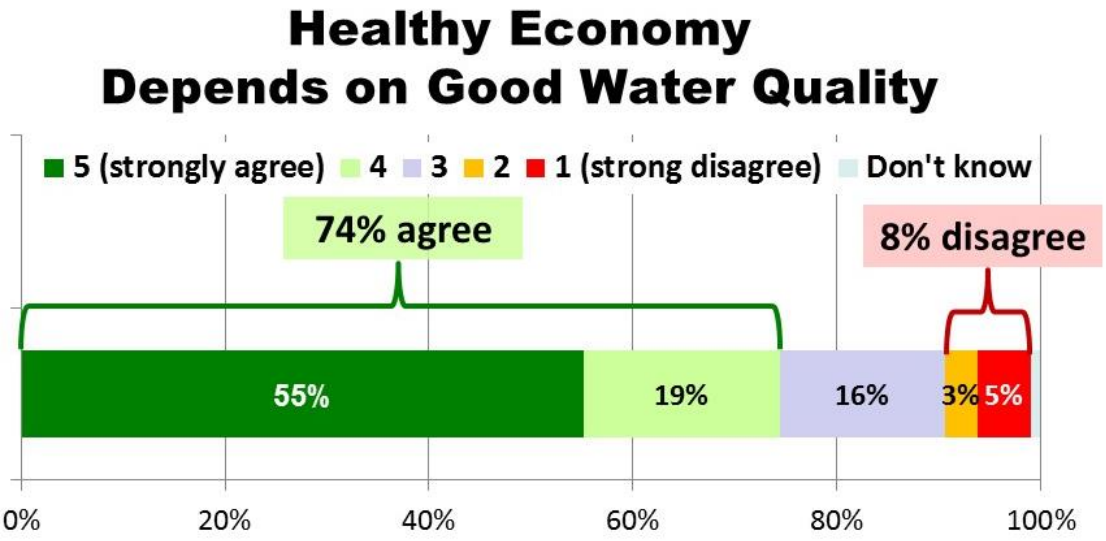
The survey tested residents' underlying attitudes about water quality through a five-point scale ranging from strongly agree to strongly disagree. Residents made clear that water quality should not be sacrificed in pursuit of economic development, and that they see good water quality and a healthy economy as positively linked.

By an overwhelming majority of 73% to 10%, residents disagree with the idea that "Sometimes it is okay to lower the water quality in the watershed to promote economic development." The number who disagreed was only slightly lower (68%) on the 2010 survey in the immediate aftermath of the recession, suggesting that this is a more enduring attitude by the public; in 2010 only 19% agreed that it is okay to lower water quality to promote economic development.



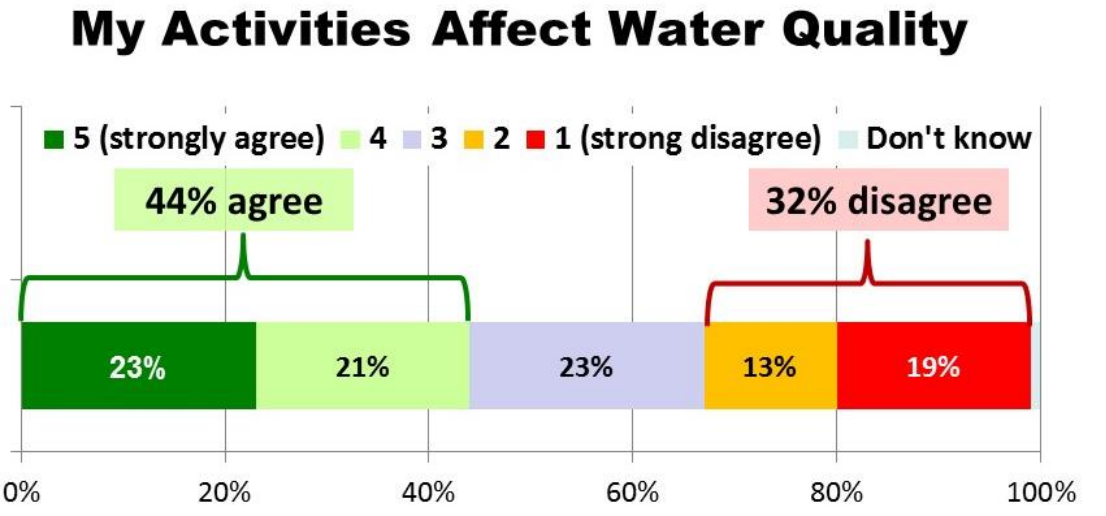
4A. "Using a 1 to 5 scale, this time with 1 meaning you strongly disagree and 5 meaning you strongly agree, please tell me whether you agree or disagree with the following statements… "Sometimes it is okay to lower the water quality in the watershed to promote economic development."

By 74% to 8%, residents agree with the idea that "A healthy economy depends on good water quality in the watershed." Similarly, in 2010 residents agreed with this statement by 66% to 12%.



4B. "Using a 1 to 5 scale, this time with 1 meaning you strongly disagree and 5 meaning you strongly agree, please tell me whether you agree or disagree with the following statements… "A healthy economy depends on good water quality in the watershed."

When it comes to their own impact on water quality, residents exhibited the full range of understandings. Asked to rate how strongly they agree with the statement "My activities affect the water quality of Salt Lake County's watersheds," 23% strongly agree, 21% somewhat agree, 23% are neutral, 13% somewhat disagree, and 19% strongly disagree. Overall, that translates into 44% who agree that their activities impact water quality and an only slightly smaller 32% who disagree.



4C. "Using a 1 to 5 scale, this time with 1 meaning you strongly disagree and 5 meaning you strongly agree, please tell me whether you agree or disagree with the following statements… "My activities affect the water quality of Salt Lake County's watersheds."

As illustrated in the table below, when overall agreement with these three propositions is expressed as a mean on the 1 to 5 scale, one can clearly see the shifts in attitudes on each of these issues. The closer these averages are to 1.00, the more strongly the public overall disagrees. Similarly, scores closer to 5.00 indicate stronger agreement.

These numbers demonstrate that the recession and recovery have moved the averages somewhat on the economic questions. What is more significant is the change in awareness that one's own actions affect water quality. Salt Lake County residents appear significantly more aware of their impact on water quality in 2015 than they were just a few years ago. While still only lukewarm in 2015 at 3.18 – a score that indicates only slightly more people agree they have an impact on water quality than disagree – that represents a significant shift from much lower means of 2.64 and 2.57 that were recorded in the prior surveys. As awareness of one's own impact is a key to engaging individuals in the public, this will be an important indicator to watch moving forward.

Comparing Change in Water Quality Attitudes

Expressed as a Mean; Higher Numbers Mean Stronger Agreement

	2007 Mean	2010 Mean	2015 Mean
Sometimes it is okay to lower the water quality in the watershed to promote economic development.	1.67	2.10	1.89
A healthy economy depends on good water quality in the watershed.	4.07	3.91	4.18
My activities affect the water quality of Salt Lake County's watersheds.	2.64	2.57	3.18

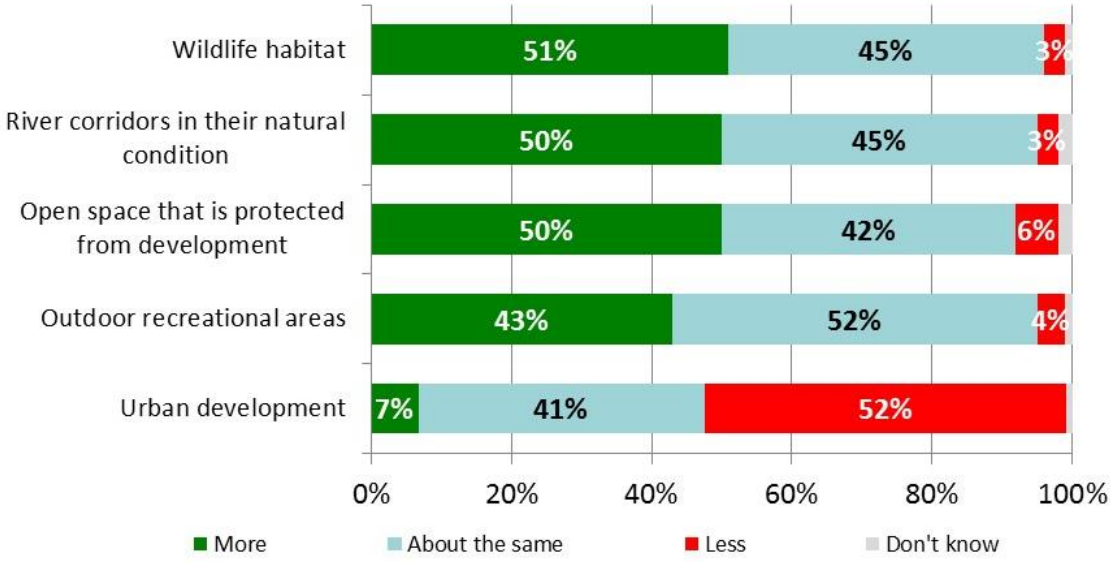
"Using a 1 to 5 scale, this time with 1 meaning you 'strongly disagree' and 5 meaning you 'strongly agree,' please tell me whether you agree or disagree with the following statements."

Land-Use Priorities

Residents value the natural areas of Salt Lake County, as demonstrated by their preferences for land use. The survey asked whether they would like to see less, more, or about the same amount of various kinds of land use in the County. Majorities would like to see *more* wildlife habitat, river corridors in their natural condition, and open space that is protected from development, and less urban development. A large number would also like to see more outdoor recreational areas in the County.

- Fifty-one percent (51%) would like to see more wildlife habitat in the County, while 45% are satisfied with the amount of habitat and only 3% would like to see less.
- Half of residents (50%) would like to see more river corridors in their natural condition, while only 3% would like less of that. Forty-five percent are satisfied with the amount that exists today.
- A 50% majority would like to see more open space that is protected from development, while only 6% would like less. Forty-two percent are happy with the amount of open space that exists today.
- More than one resident in four (43%) would like to see more outdoor recreational areas, while 52% would like to see the same amount and 4% said less.
- There appears to be significant sentiment in the County to slow development, with 52% wanting less urban development and only 7% wanting more.

Land Use Priorities



Q5 "Within a watershed there can be a number of land uses. For each of the following, please tell me whether you would like to see less, more, or about the same of each in Salt Lake County."

The table below compares residents' land use preferences in 2015 with prior surveys.

- The desire for wildlife habitat has held steady, as has the interest in preserving river corridors in their natural condition after a slight dip in 2010.
- Open space that is protected from development is of greater interest to the public in 2015 than it was in 2007, although the question wording was changed in 2015 from "open space and wetlands" to simply "open space."
- Demand for outdoor recreational activities is significantly higher today than it was in 2007, moving from 35% to 43% who said they would like to see more of that.
- The percentage who want to see less urban development dropped from 64% to 53% between 2007 and 2010, and has held steady there.

Comparing Change in Land Use Preferences

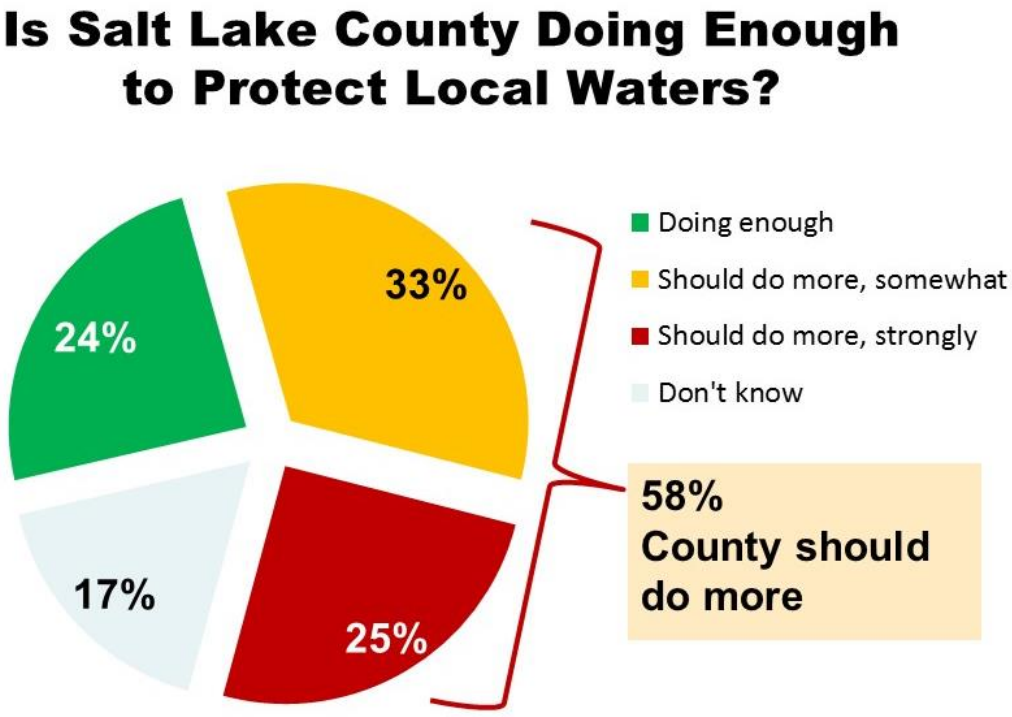
	2007	2010	2015
Wildlife habitat (More)	51%	54%	51%
River corridors in their natural condition (More)	52%	44%	50%
Open space that is protected from development* (More)	43%	35%	50%
Outdoor recreational activities (More)	35%	48%	43%
Urban development (Less)	64%	53%	52%

"Within a watershed there can be a number of land uses. For each of the following, please tell me whether you would like to see less, more, or about the same of each in Salt Lake County."
*2007 & 2010 wording: "Open space or wetlands"

The County's Commitment to Watershed Protection

The survey asked residents, "Do you think Salt Lake County government is doing enough to protect our local waters or should do more?" Only one resident in four (24%) felt that the County government was doing enough to protect local waters; 58% said they think the County should do more. About one in six (17%) said they did not know what the County was doing or if it should do more.

Among that 58% who think the County government should do more, 25% said they "feel that way strongly," while 33% said they feel that way "somewhat."



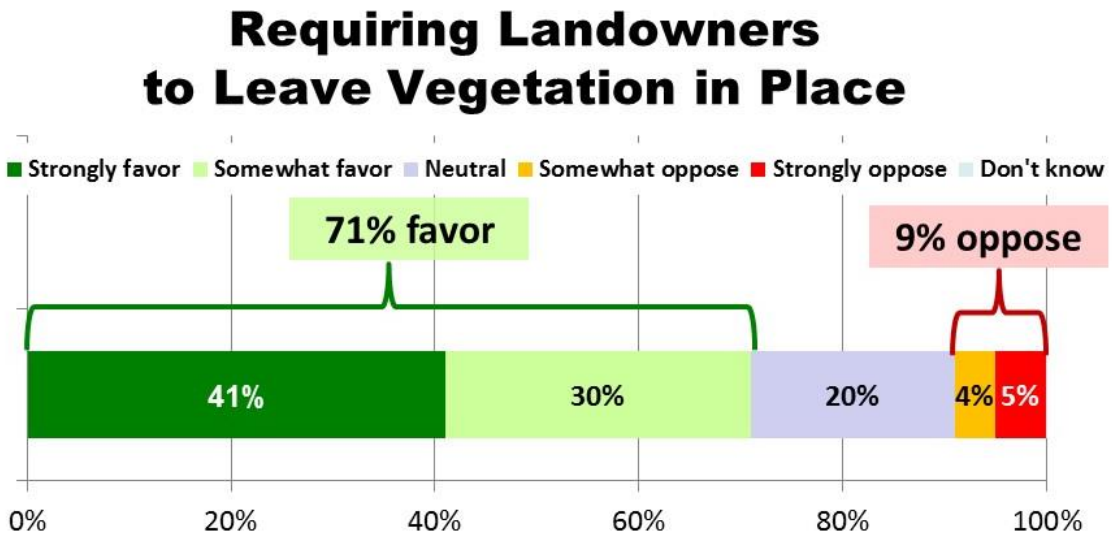
Q9 "Do you think Salt Lake County government is doing enough to protect our local waters or should do more?" (If should do more): "Do you feel that way strongly or only somewhat?"

Public Policy

The survey measured resident support or opposition for four specific public policy proposals, measuring each one on a scale ranging from strongly favor to strongly oppose, and offering a "neutral" option. These tested proposals were:

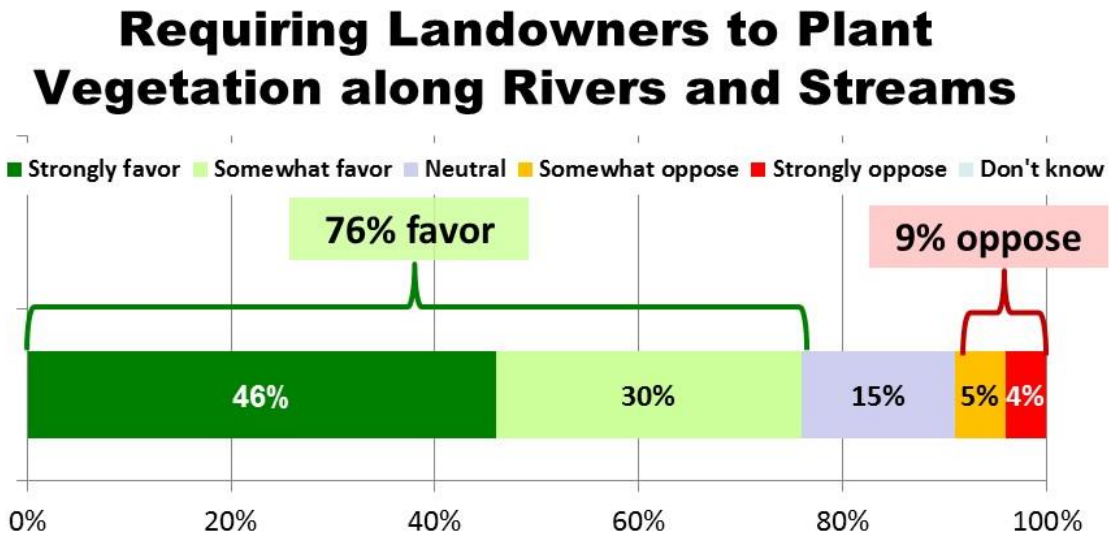
- "Requiring landowners to leave natural vegetation in place near rivers, streams and wetlands."
- "Requiring landowners along rivers and streams to plant new vegetation that would filter pollutants from runoff, stabilize the stream bank, and provide habitat."
- "Requiring new developments to set aside natural open space that is free from buildings, parking lots, etc."
- "Requiring new developments to make permanent, built-in improvements to capture sediment and improve water quality."

Almost three-quarters (71%) of residents would favor a proposal to require landowners to leave natural vegetation in place near rivers, streams, and wetlands, with 41% favoring that strongly. Twenty percent of the public is neutral about that proposal, and only 9% are opposed, with 5% strongly opposed.



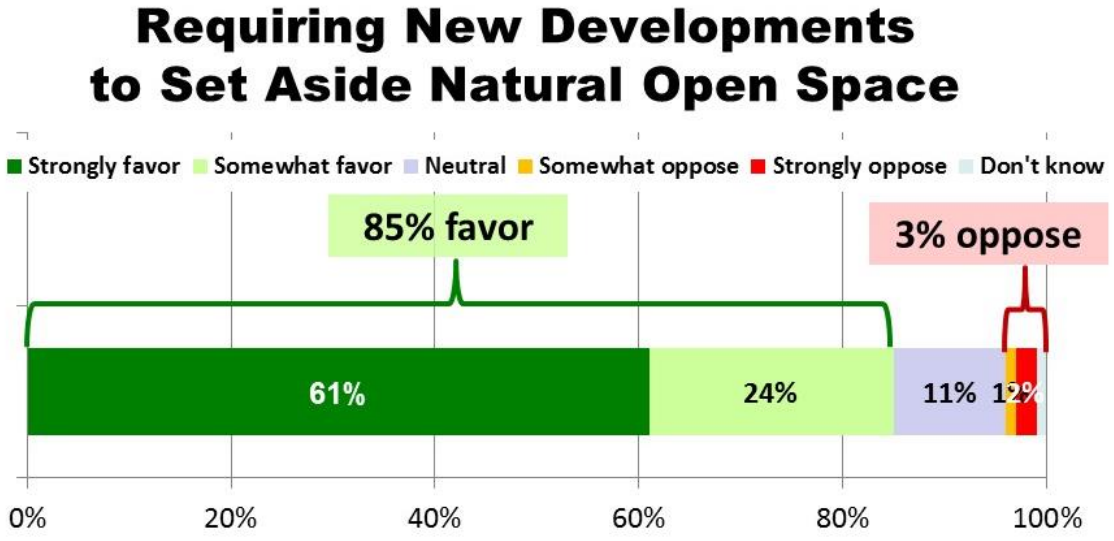
8A. "I am going to read you several proposals in Salt Lake County to impact water quality and watershed health. For each one, please tell me if you would strongly favor, somewhat favor, are neutral, somewhat oppose, or strongly oppose that idea… "Requiring landowners to leave natural vegetation in place near rivers, streams and wetlands."

A slightly larger 76% would favor requiring landowners along rivers and streams to plant new vegetation, with a near-majority of 46% strongly in favor. Fifteen percent are neutral about this proposal, and 9% are opposed, with 4% strongly opposed.



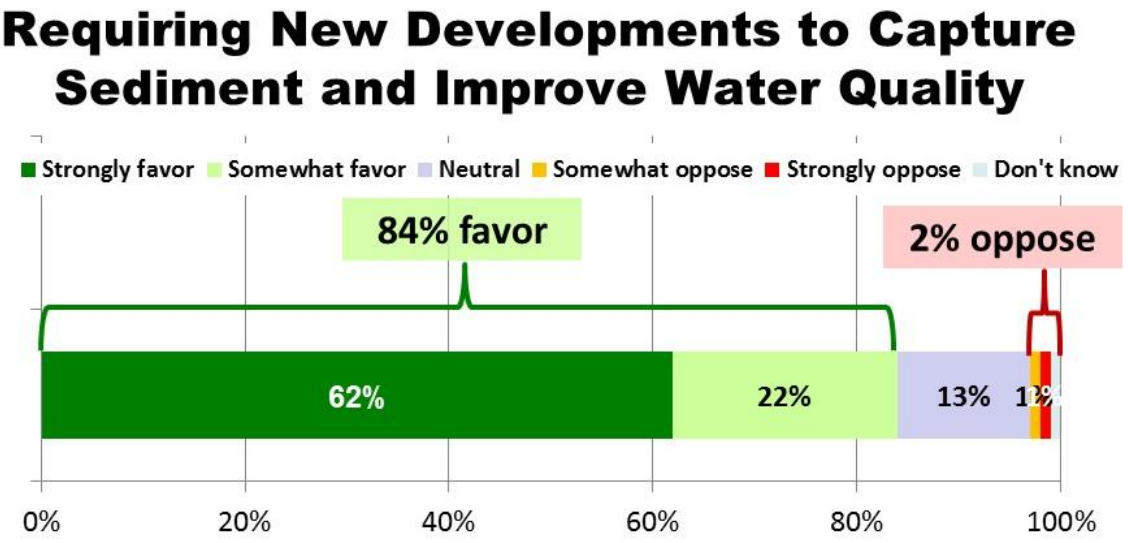
8B. "I am going to read you several proposals in Salt Lake County to impact water quality and watershed health. For each one, please tell me if you would strongly favor, somewhat favor, are neutral, somewhat oppose, or strongly oppose that idea… "Requiring landowners along rivers and streams to plant new vegetation that would filter pollutants from runoff, stabilize the stream bank, and provide habitat."

Support is overwhelming for a proposal to require new developments to set aside natural open space, with 85% in favor, and more than six out of ten residents (61%) strongly in favor. Eleven percent are neutral about this proposal, and only 3% are opposed.



8C. "I am going to read you several proposals in Salt Lake County to impact water quality and watershed health. For each one, please tell me if you would strongly favor, somewhat favor, are neutral, somewhat oppose, or strongly oppose that idea…
"Requiring new developments to set aside natural open space that is free from buildings, parking lots, etc."

Requiring new developments to make built-in improvements to capture sediment and improve water quality is favored by 84% of the public, with 62% doing so strongly. Thirteen percent are neutral, and only 2% are opposed.

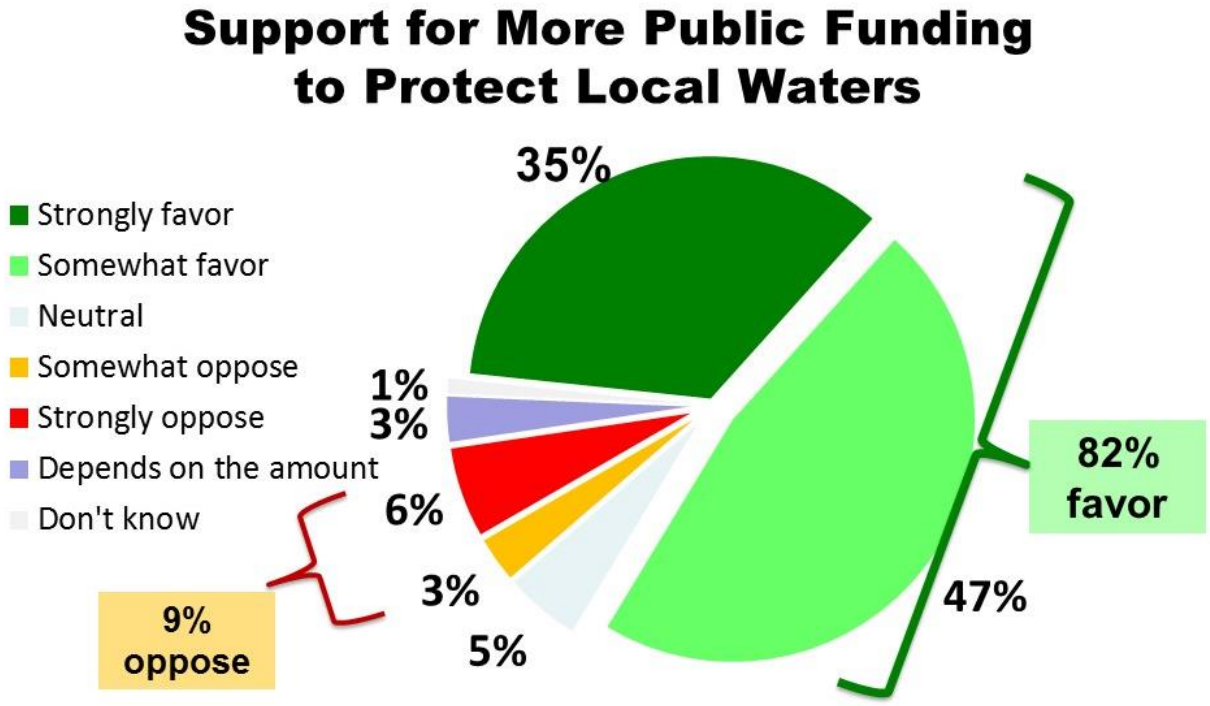


8D. "I am going to read you several proposals in Salt Lake County to impact water quality and watershed health. For each one, please tell me if you would strongly favor, somewhat favor, are neutral, somewhat oppose, or strongly oppose that idea…
"Requiring new developments to make permanent, built-in improvements to capture sediment and improve water quality."

Funding for Water Protection

The public's strong support for water protection, and the great value Salt Lake County residents place on the outdoors, are reflected in their willingness to support additional funding for water protection efforts.

In a general sense, "if County leaders said more public funding was needed to protect our local waters," a resounding 82% of residents would support more public funding if the amount was "reasonable." One-third (35%) of residents said they would be strongly in favor of added funding, and 47% somewhat in favor. Only 9% would oppose that added funding.



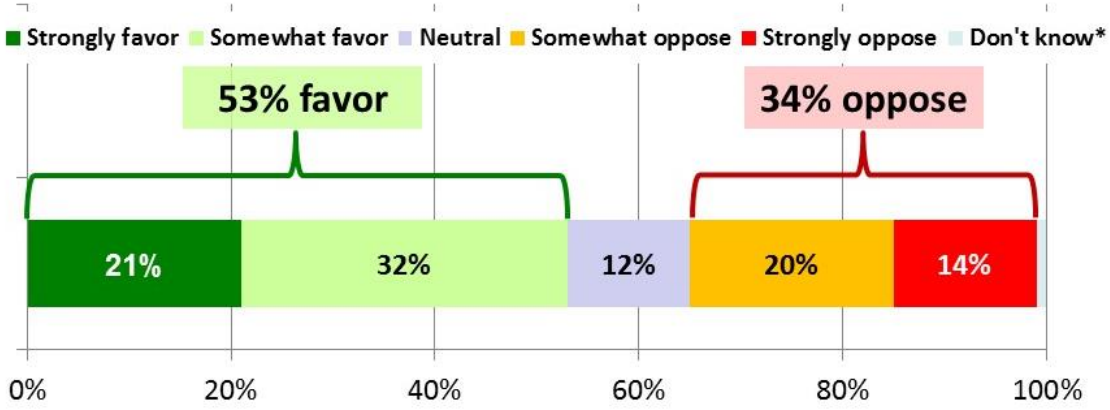
Q10 "If County leaders said more public funding would be needed to protect our local waters, is that something you would be likely to favor or oppose, if you thought the amount was reasonable?" (If favor/oppose): "Is that strongly or just somewhat {favor/oppose}?"

Following the generic funding question, a series of four specific funding mechanisms were tested for support or opposition:

- "Fees for using the canyons and trails in the county."
- "A small property or sales tax increase for water protection."
- "Bonding for a set amount of money to be used for water protection."
- "A fee of $3 per month per household for water protection and restoration in the County."

A 53% majority would favor fees for using canyons and trails in the County, compared to 24% who are opposed. Twenty-one percent are strongly in favor, and 14% strongly opposed.

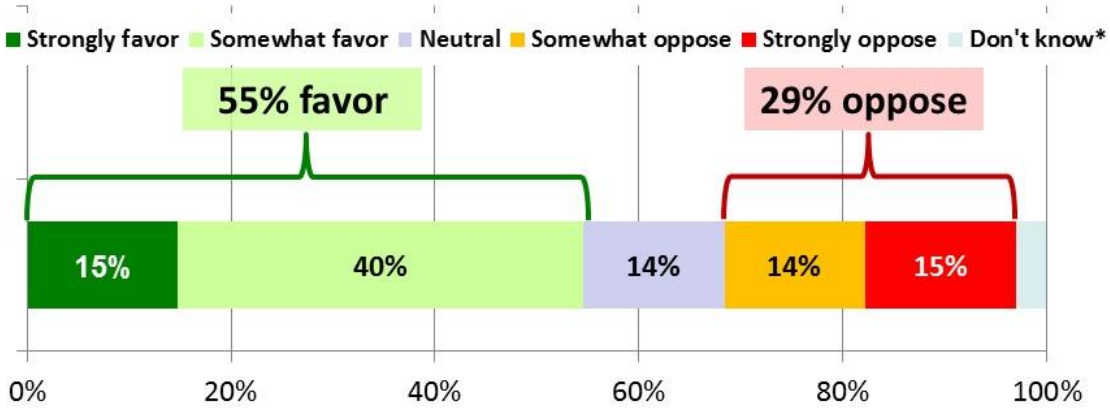
Fees for Using Canyons and Trails



11A. "Please rate whether you favor or oppose using the following sources of funding if the money was dedicated to water quality and protection, using the scale strongly favor, somewhat favor, neutral, somewhat oppose, or strongly oppose…
"Fees for using the canyons and trails in the county."
***Response includes those who say "depends on the amount."**

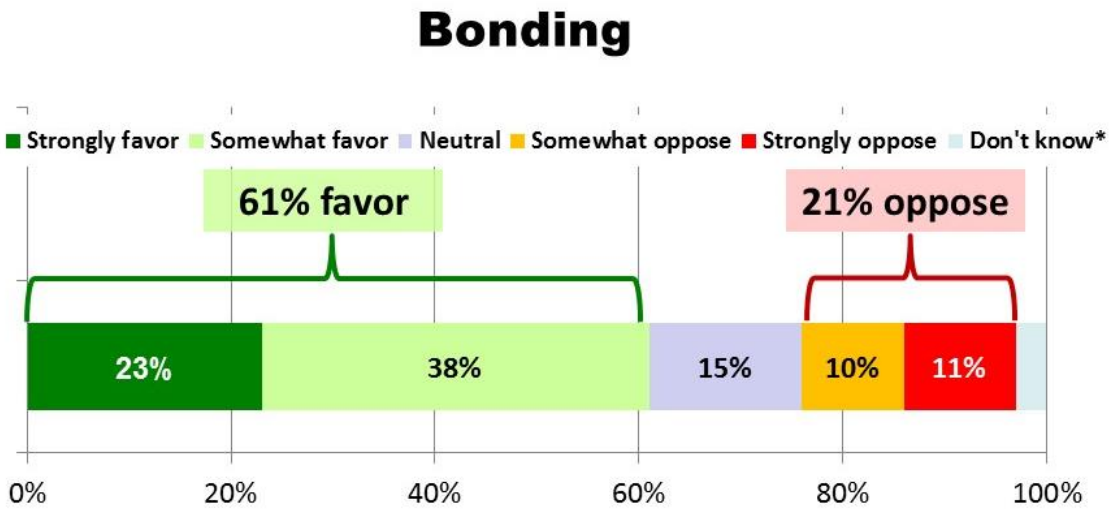
A 55% majority would favor "a small property or sales tax increase for water protection," compared to 29% who would be opposed. Fifteen percent strongly favor and 15% strongly oppose this proposal.

Small Property or Sales Tax Increase



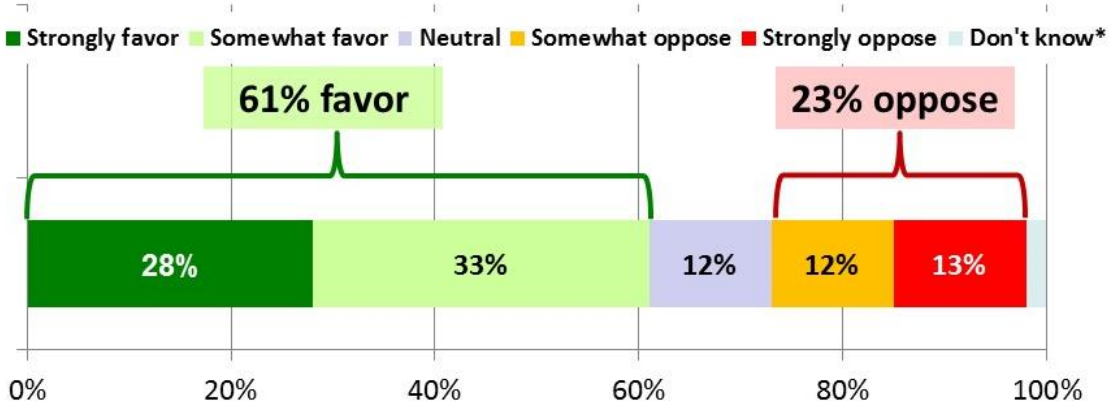
11B. "Please rate whether you favor or oppose using the following sources of funding if the money was dedicated to water quality and protection, using the scale strongly favor, somewhat favor, neutral, somewhat oppose, or strongly oppose…
"A small property or sales tax increase for water protection."
***Response includes those who say "depends on the amount."**

Bonding receives almost three-to-one support, with 61% in favor and 21% opposed. Strong supporters of bonding (23%) outnumber strong opponents (11%) by two-to-one.



11C. "Please rate whether you favor or oppose using the following sources of funding if the money was dedicated to water quality and protection, using the scale strongly favor, somewhat favor, neutral, somewhat oppose, or strongly oppose…
"Bonding for a set amount of money to be used for water protection."
***Response includes those who say "depends on the amount."**

A fee of $3 per month per household for water protection and restoration in the County is favored by 61%, compared to only 23% who are opposed. Twenty-eight percent strongly favor a $3 monthly household fee, while 13% strongly oppose that.



11D. "Please rate whether you favor or oppose using the following sources of funding if the money was dedicated to water quality and protection, using the scale strongly favor, somewhat favor, neutral, somewhat oppose, or strongly oppose…
"A fee of $3 per month per household for water protection and restoration in the County."
***Response includes those who say "depends on the amount."**

In summary, all of these fiscal alternatives receive majority support from County residents. Bonding and a $3 monthly household fee reach levels of acceptance – nearly two-thirds of residents in each case – that can only be described as solid public support.

Conclusions

This opinion research project identifies a public in Salt Lake County that values the outdoors, enjoys spending time in the County's wild places, and wants more protection of waters and open spaces. There is some awareness of water quality problems in local creeks and rivers, though the awareness could be much higher, and there is wide variety of opinion about whether one's own actions impact water quality. Nonetheless, the public exhibits a strong will to address water quality, supporting specific public policy proposals and funding mechanisms that would promote healthier waters.

Thank you for the opportunity to assess the perceptions and attitudes of Salt Lake County residents regarding their watersheds. We hope you find this work valuable in your continued efforts to protect and restore the County's waters.

OpinionWorks, LLC
Annapolis, Maryland

How This Research Was Conducted

For this countywide survey, OpinionWorks interviewed a total of 400 randomly-selected adult residents of Salt Lake County by telephone January 21–30, 2015. A sample of this size produces a margin of sampling error of no more than ± 4.9% at a 95% confidence level; in other words, the true results would fall within that range 95% of the time if every adult resident of the County had been interviewed.

Interviewees were drawn randomly from commercially-available databases of area residents and matched with landline and cellular telephone numbers. The calls were completed by trained and supervised live operators from a Provo-based data collection center between the hours of 5:00 and 9:00 p.m. weeknights, and 10:00 a.m. and 6:00 p.m. Saturday, local time. The final survey results were weighted to reflect the adult population of the County according to the latest estimates available from the United States Census Bureau.

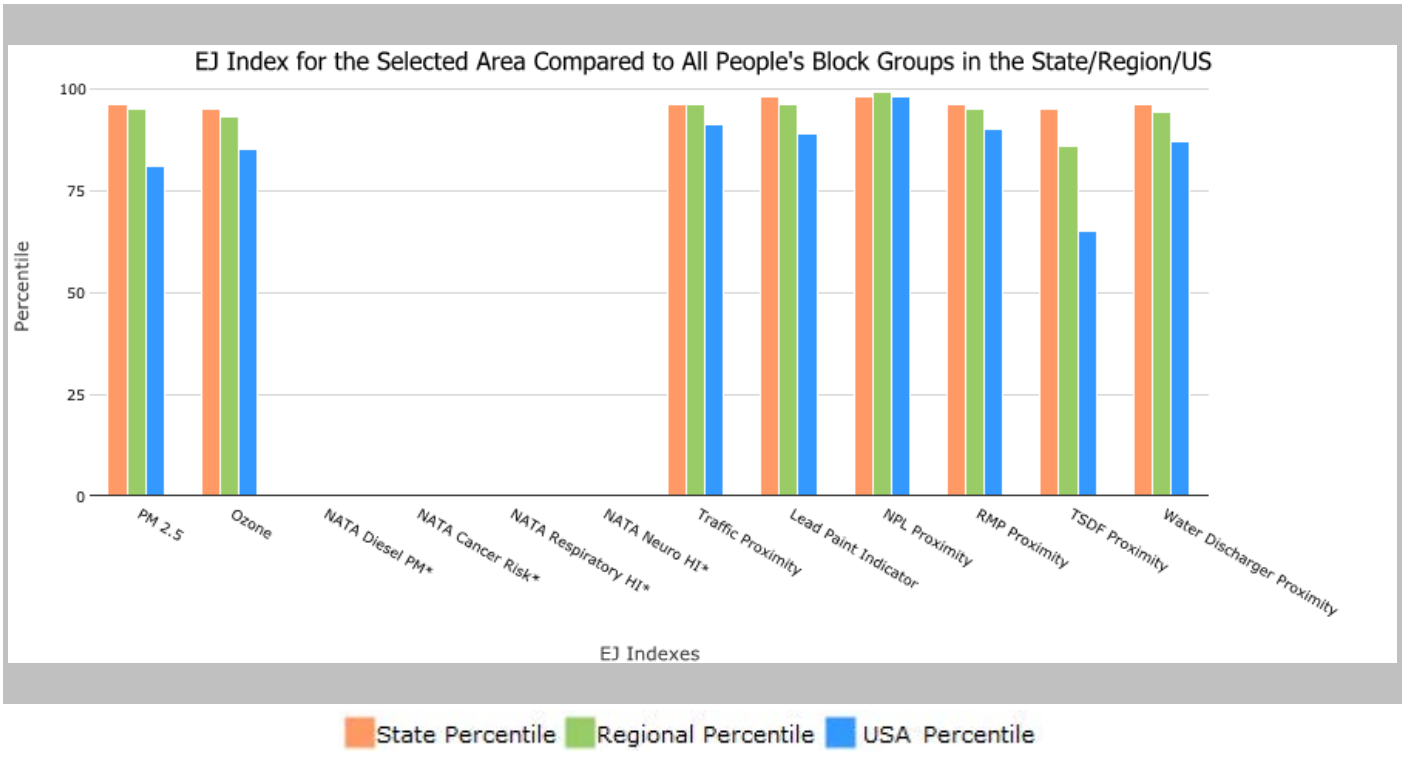
EJSCREEN Report

for the User Specified Area, UTAH, EPA Region 8

Approximate Population: 60205

Urban Waters Project Area

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	96	95	81
EJ Index for Ozone	95	93	85
EJ Index for NATA Diesel PM*	N/A	N/A	N/A
EJ Index for NATA Air Toxics Cancer Risk*	N/A	N/A	N/A
EJ Index for NATA Respiratory Hazard Index*	N/A	N/A	N/A
EJ Index for NATA Neurological Hazard Index*	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	96	96	91
EJ Index for Lead Paint Indicator	98	96	89
EJ Index for Proximity to NPL sites	98	99	98
EJ Index for Proximity to RMP sites	96	95	90
EJ Index for Proximity to TSDFs	95	86	65
EJ Index for Proximity to Major Direct Dischargers	96	94	87



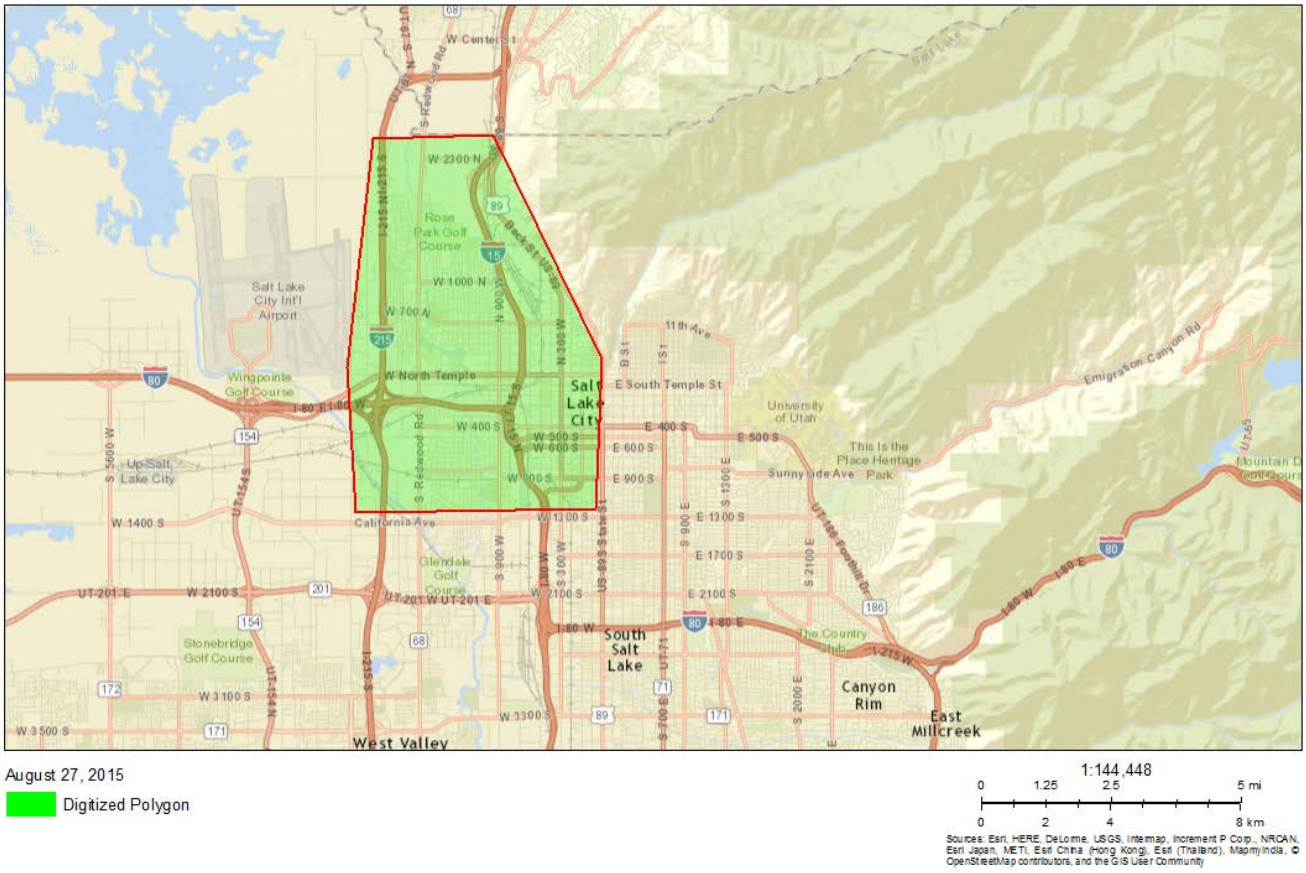
This report shows environmental, demographic, and EJ indicator values. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report

for the User Specified Area, UTAH, EPA Region 8

Approximate Population: 60205

Urban Waters Project Area



EJSCREEN Report

for the User Specified Area, UTAH, EPA Region 8

Approximate Population: 60205

Urban Waters Project Area

Selected Variables	Raw Data	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	9.16	8.06	95	6.94	98	9.78	31
Ozone (ppb)	53.4	53.8	14	51.8	34	46.1	87
NATA Diesel PM (µg/m^3)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Cancer Risk (lifetime risk per million)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Respiratory Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Neurological Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	200	89	87	80	89	110	86
Lead Paint Indicator (% Pre-1960 Housing)	0.46	0.2	86	0.23	80	0.3	71
NPL Proximity (site count/km distance)	0.58	0.15	94	0.083	98	0.096	97
RMP Proximity (facility count/km distance)	0.53	0.27	87	0.24	88	0.31	84
TSDF Proximity (facility count/km distance)	0.0031	0.0032	65	0.028	32	0.054	3
Water Discharger Proximity (facility count/km distance)	0.26	0.15	88	0.19	81	0.25	76
Demographic Indicators							
Demographic Index	56%	26%	94	27%	91	35%	79
Minority Population	56%	20%	95	23%	90	36%	73
Low Income Population	55%	32%	88	31%	87	34%	82
Linguistically Isolated Population	13%	3%	95	3%	94	5%	87
Population With Less Than High School Education	28%	9%	95	10%	93	14%	85
Population Under 5 years of age	10%	9%	57	7%	73	7%	81
Population over 64 years of age	8%	9%	54	11%	41	13%	31

* The National-scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes, which include cancer risk, respiratory hazard, neurodevelopment hazard, and diesel particulate matter will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available. The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: http://www.epa.gov/ttn/atw/natamain/index.html.

For additional information, see: www.epa.gov/environmentaljustice