Envision Utah How we grow matters.

Survey Results for Water

Executive Summary

Utahns are willing to use substantially less water per capita and do not want municipal/industrial water to come at the expense of food production.

- **Current circumstances:**
  - Utah is one of the driest states in the country.
  - There are competing uses for Utah's limited water supply: agriculture, residences, businesses, habitat, recreation, energy production, etc.
- **Survey findings:**
  - Water is one of the top concerns for Utahns as we grow.
  - Eighty-five percent of Utahns want to reduce per capita water use by 2050, with an average preference of 23% reduction in today's outdoor, indoor, and industrial use.
  - To do that, Utahns are willing to:
    - Have less grass in our yards and parks and install efficient watering systems (e.g., drip systems)
    - Continue market trends that are shifting to smaller yards
  - Utahns do not want to take water from agriculture for municipal/industrial use but are willing to build large water projects if they are needed to accommodate growth even as we conserve.

Table of Contents

The state water strategy advisory team worked for 18 months to create scenarios for the future of water in Utah.

Water Action Team

2013

Envision Utah and Governor Herbert invited water experts from across the state to join the *Your Utah, Your Future* action team for this topic. The team has **43 members** from the legislature, industry, local businesses and government, advocacy groups, research institutions, and other organizations. The action team is facilitated by Envision Utah.

Utah Quality of Life Values Study

2014

The study concluded that Utahns want to ensure there is an adequate supply of clean, affordable water for a variety of needs (agriculture, population growth, environment, etc.).

Your Utah, Your Future Scenarios & Choices

2015

The action team worked for **18 months** to research and model what Utah's water future could be like in 2050 under various assumptions. They created **five scenarios** based on different strategies and outcomes for water supply and quality. The public's responses in the *Your Utah, Your Future* survey will help the the action team articulate a vision for Utah's water future.

Water Action Team Members

Action team members were selected by Governor Gary Herbert and Envision Utah to represent a spectrum of experience and political persuasions. All action team members were invited to participate by Governor Herbert.

- **Tage Flint, Weber Basin Water Conservancy District***
- **Warren Peterson, Farmland Reserve Inc.***
- **Tim Hawkes, Trout Unlimited***
- Richard Bay, Jordan Valley Water Conservancy District
- Eric Millis, Utah Division of Water Resources
- Steve Clyde, Clyde Snow Attorneys at Law
- Kent Jones, State Engineer
- Jane Whalen, Citizens for Dixie's Future
- Voneene Jorgensen, Bear River Water Conservancy District
- Bob Fotheringham, Cache County Water Manager
- Sterling Brown, Utah Farm Bureau
- Steve Erickson, Great Basin Water Network
- Ralph Okerlund, State Senator
- Keith Grover, State Representative
- Scott Jenkins, State Senator
- Joel Briscoe, State Representative
- Ron Thompson, Washington County Water Conservancy District
- Walt Baker, Utah Divison of Water Quality
- Leland Myers, Central Davis County Sewer District
- Todd Brightwell, EDCU
- Todd Bingham, Utah Manufactures Association
- Joan DeGiorgio, The Nature Conservancy Utah Chapter
- Jody Williams, Holland and Hart
- Charley Bulletts, Piute Tribe
- Joanna Endter-Wada, Utah State University
- Dan McCool, University of Utah
- JT Martin, IWM Intergrated
- Mark Sovine, Grand County Water & Sewer District
- Brad Peterson, Utah Governor's Office of Outdoor Recreation
- Keith Denos, Provo River Water Users Association
- Dale Pierson, Rural Water Association of Utah
- Robert Gillies, State Climatologist
- Stephanie Duer, Salt Lake City Public Utilities
- Lynn de Freitas, Friends of Great Salt Lake
- Wayne Pullan, Bureau of Reclamation
- Shane Pace, Sandy City Public Utilities
- Jodi Hoffmann, Utah League of Cities and Towns
- Gene Shawcroft, Central Utah Water Conservancy District
- Ken Bousfield, Utah Department of Environmental Quality
- Tom Berggren, Jones Waldo
- Steve Schnoor, Rio Tinto
- Gawain Snow, Uintah Water Conservancy District
- June Pace, Dammeron Valley Water Works

*Action Team Co-Chair

Your Utah, Your Future Background

In Need of a Solution

Projections show that Utah's population will nearly double by the year 2050. The *Your Utah, Your Future* survey was designed for Utahns to create a vision for the State of Utah for the next 35 years.

Identifying the Issues

Envision Utah performed a values study to understand ***what*** Utahns care about regarding the future and ***why*** those issues are personally important to them. The study identified eleven key issues: agriculture, air quality, recreation, disaster resilience, public lands, transportation and communities, housing and cost of living, education, energy, jobs and economy, and water.

Identifying Choices and Trade-offs

Four-hundred Utah experts worked in eight task forces to identify Utah's choices for each of the 11 topics. **The information and options in the survey were the direct findings of these taskforces.**

Choosing a Future

The *Your Utah, Your Future* survey was designed to prioritize issues and their associated outcomes in order to make strategic decisions for Utah's future. Nearly 53,000 people weighed in on the future that they want to create in 2050.

The Challenge:

By 2050, Utah's population will nearly double in size. Utah will not.

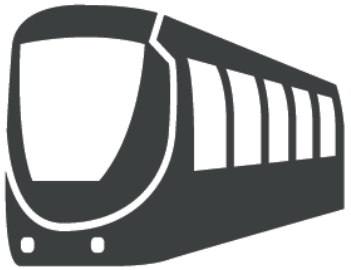
The *Your Utah, Your Future* survey asked Utahns to indicate their choices for Utah's Future on 11 specific issues.


Housing & Cost of Living


Education


Agriculture


Air Quality


Transportation & Communities


Economic Development


Disaster Resilience


Recreation

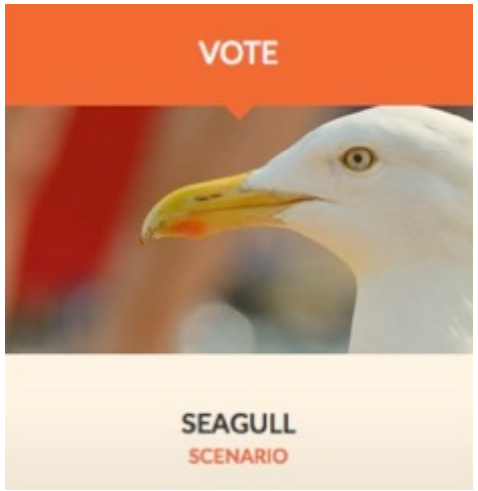

Water

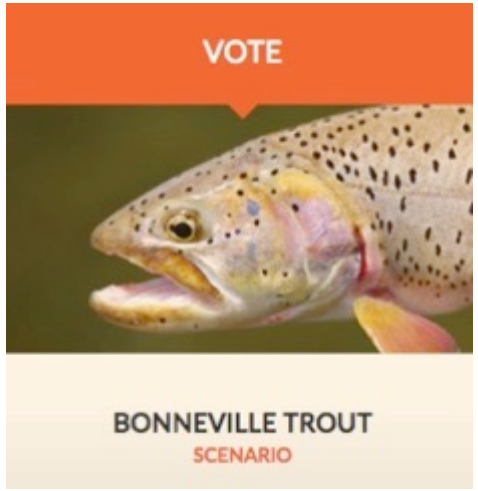

Public Lands

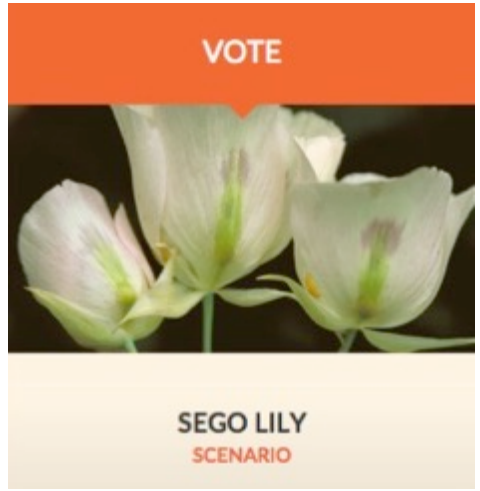

Energy

Background

Survey participants then chose between five overall scenarios for Utah's future, with each overall scenario proposing a set of choices for the 11 specific issues.







Our goal was for 50,000 Utahns to take the *Your Utah, Your Future* survey about their desires for the future for Utah.

Goal 50,000 Respondents

Actual **52,845 Respondents**

The *Your Utah, Your Future* survey garnered more public participation than any such project ever has.

The original *Envision Utah* 1999 survey held the record for many years with 17,500 public responses.

Envision Utah How we grow matters.

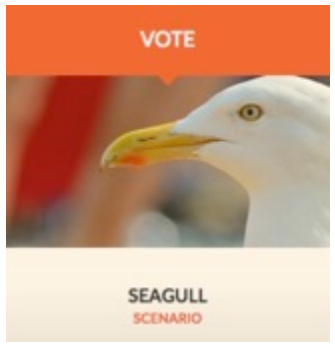
Survey Methodology

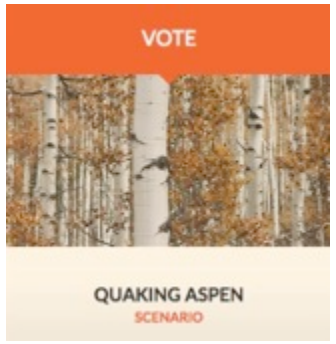
Survey Structure—Part One

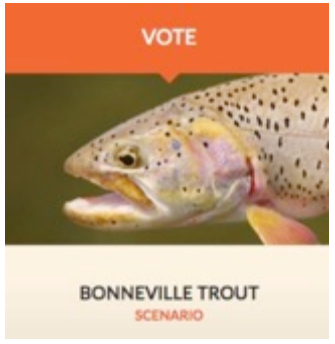
Utahns were invited to participate in two parts of the survey.

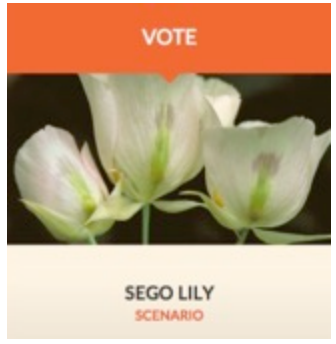
In the first part:

Survey participants chose among five overall scenarios for Utah's future.









Each overall scenario was made up of a set a choices on 11 different topics.


Housing & Cost of Living


Education


Agriculture


Air Quality


Transportation & Communities


Economic Development


Disaster Resilience


Recreation

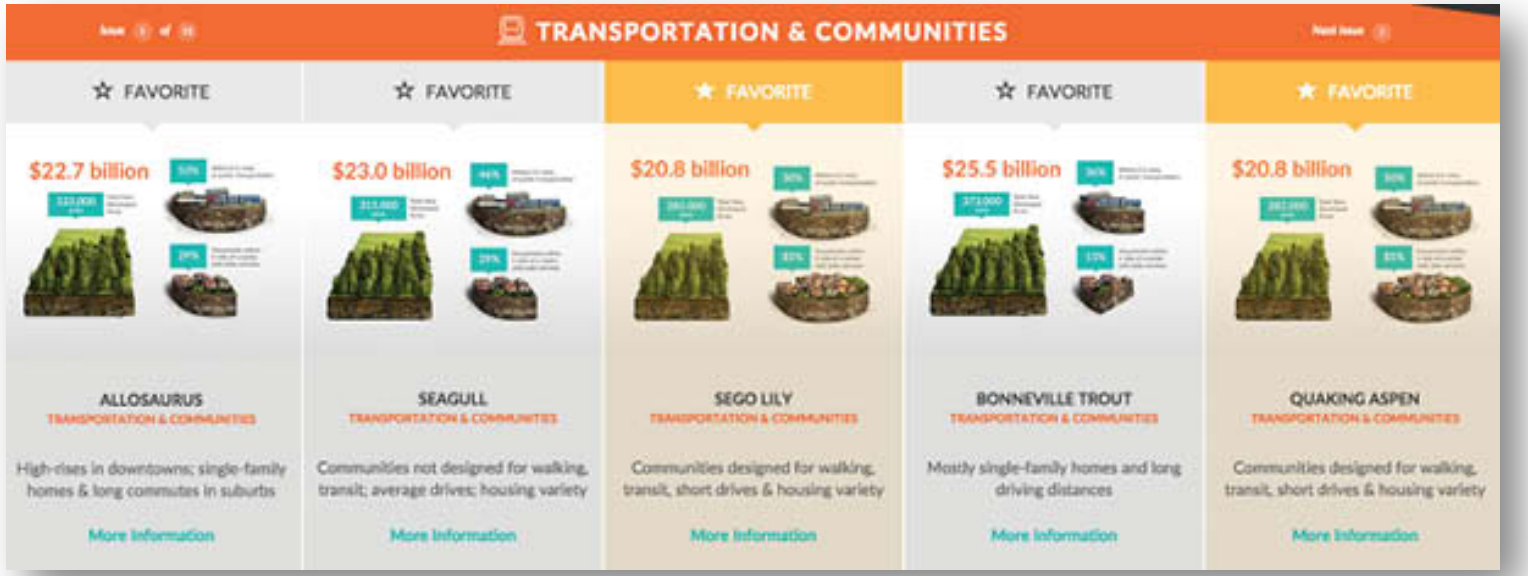

Water


Public Lands

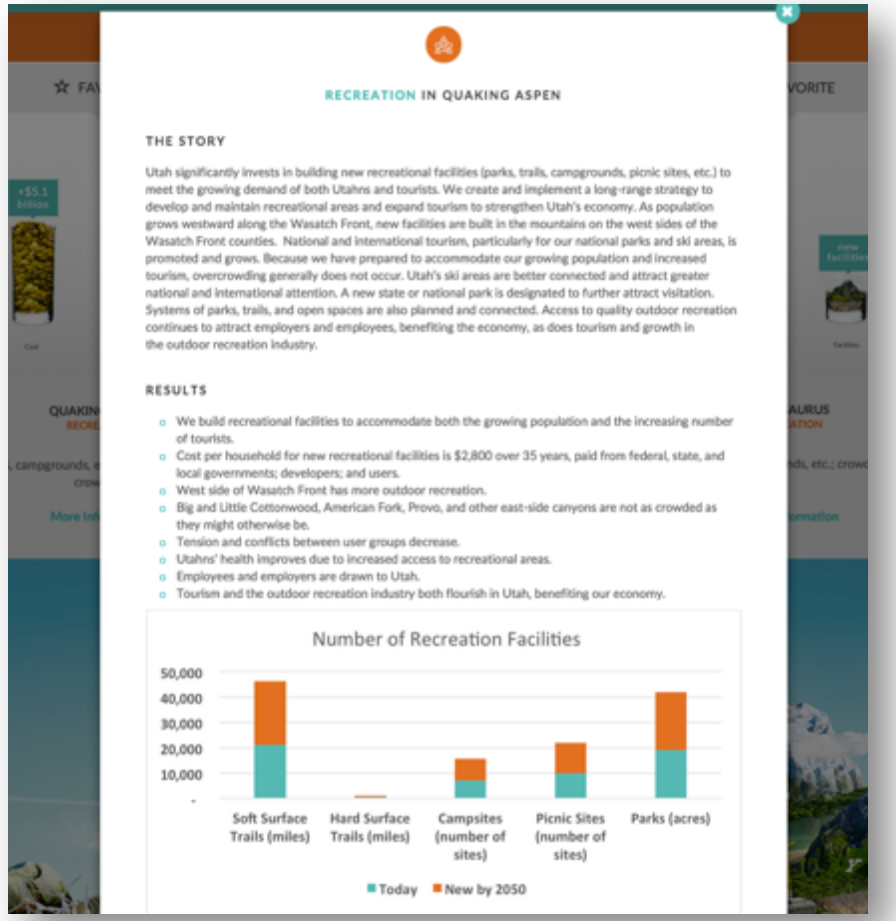

Energy

Survey Structure—Part One (Cont'd)

Participants compared the different options within each topic and selected their preferred scenarios for that specific topic.

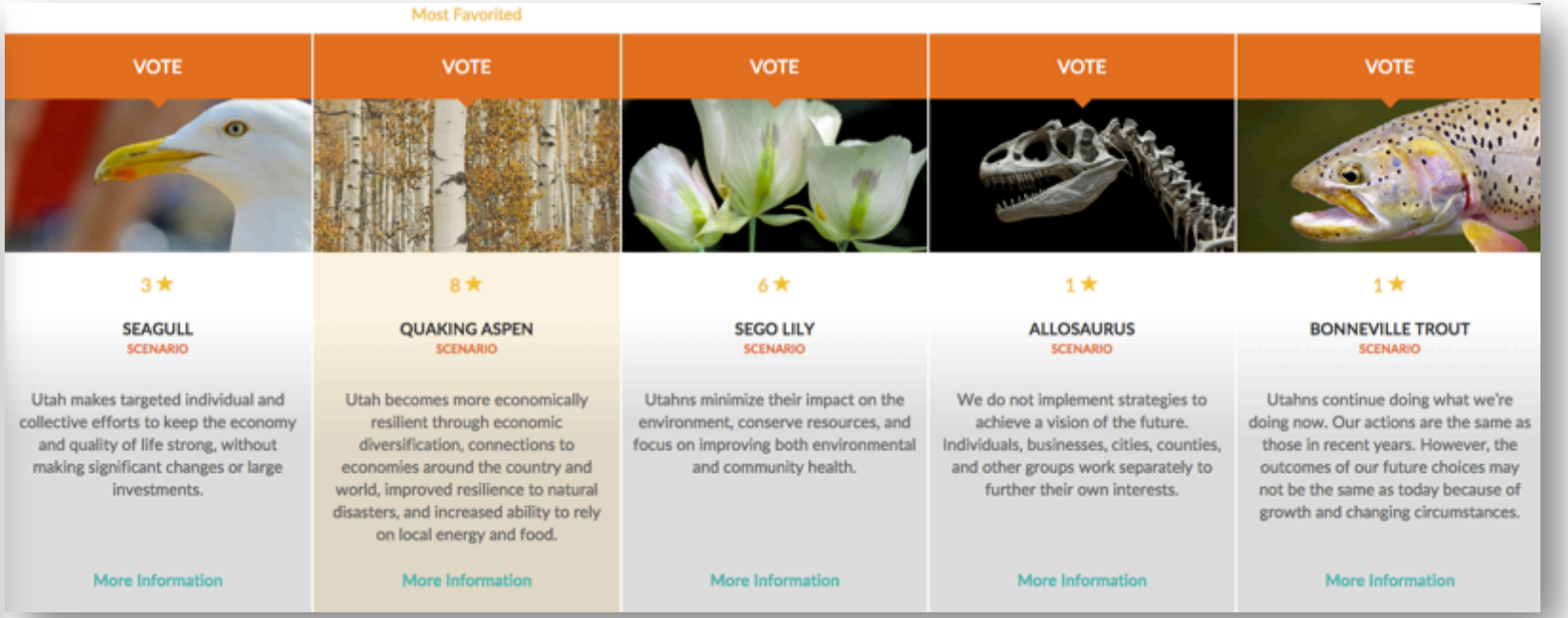


They were provided with in-depth information and background data for each of the topics and choices.



Survey Structure—Part One (Cont'd)

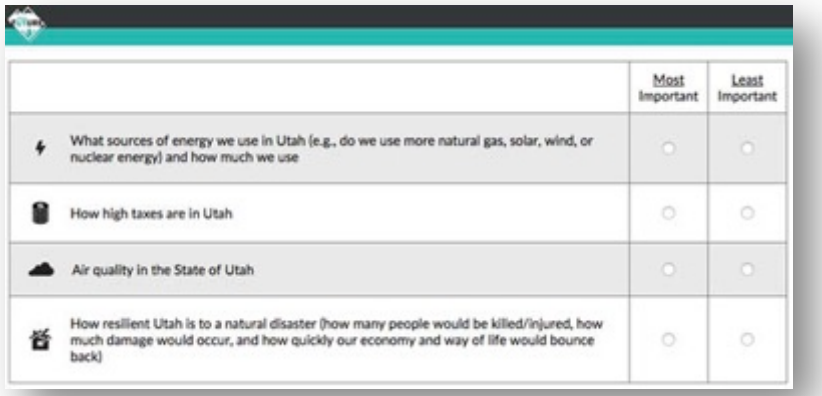
After making selections for each of the 11 topics, participants could study a summary comparison chart and vote on their preferred overall scenario.



Survey Structure—Part Two

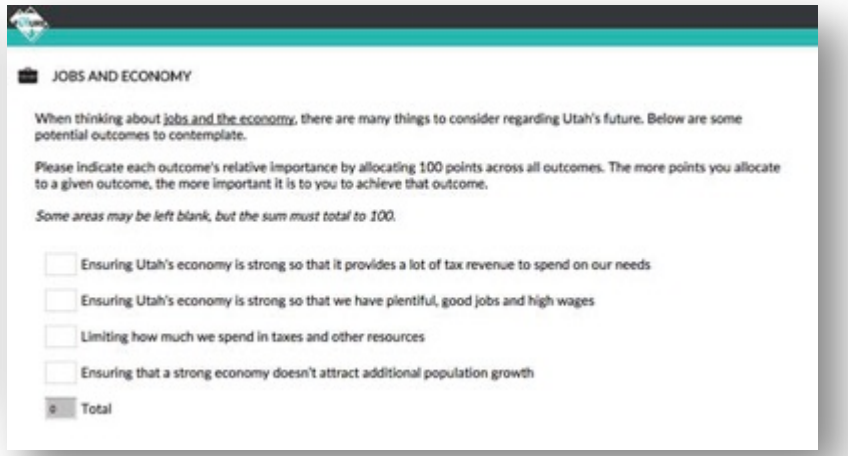
In the second part of the survey, Utahns participated in more traditional survey exercises.

Prioritizing Issues



	Most Important	Least Important
What sources of energy we use in Utah (e.g., do we use more natural gas, solar, wind, or nuclear energy) and how much we use	○	○
How high taxes are in Utah	○	○
Air quality in the State of Utah	○	○
How resilient Utah is to a natural disaster (how many people would be killed/injured, how much damage would occur, and how quickly our economy and way of life would bounce back)	○	○

Weighting Outcome Preference



JOBS AND ECONOMY

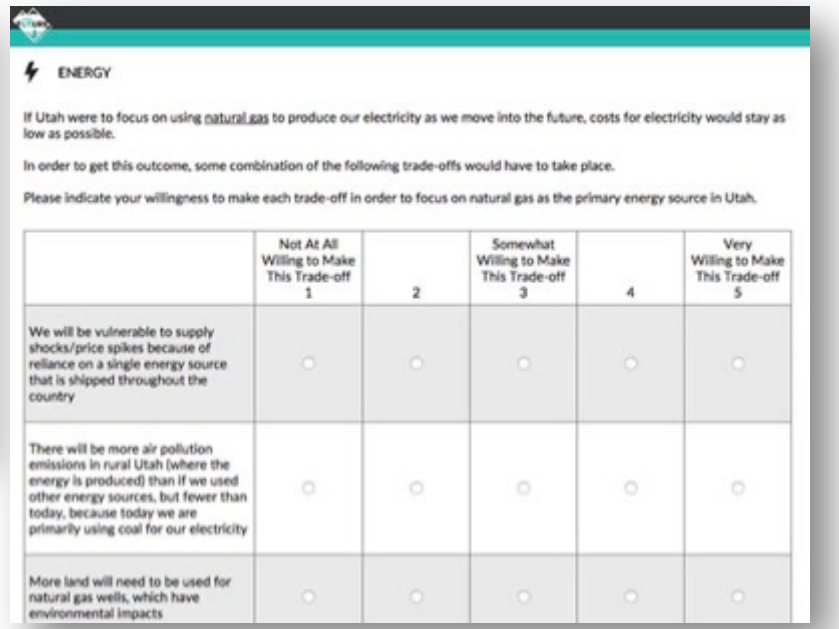
When thinking about jobs and the economy, there are many things to consider regarding Utah's future. Below are some potential outcomes to contemplate.

Please indicate each outcome's relative importance by allocating 100 points across all outcomes. The more points you allocate to a given outcome, the more important it is to you to achieve that outcome.

Some areas may be left blank, but the sum must total to 100.

- Ensuring Utah's economy is strong so that it provides a lot of tax revenue to spend on our needs
- Ensuring Utah's economy is strong so that we have plentiful, good jobs and high wages
- Limiting how much we spend in taxes and other resources
- Ensuring that a strong economy doesn't attract additional population growth
- 0 Total

Indicating Tradeoff Willingness



ENERGY

If Utah were to focus on using natural gas to produce our electricity as we move into the future, costs for electricity would stay as low as possible.

In order to get this outcome, some combination of the following trade-offs would have to take place.

Please indicate your willingness to make each trade-off in order to focus on natural gas as the primary energy source in Utah.

	Not At All Willing to Make This Trade-off 1	2	Somewhat Willing to Make This Trade-off 3	4	Very Willing to Make This Trade-off 5
We will be vulnerable to supply shocks/price spikes because of reliance on a single energy source that is shipped throughout the country	○	○	○	○	○
There will be more air pollution emissions in rural Utah (where the energy is produced) than if we used other energy sources, but fewer than today, because today we are primarily using coal for our electricity	○	○	○	○	○
More land will need to be used for natural gas wells, which have environmental impacts	○	○	○	○	○

Together, the results of parts one and two of the survey allow a sophisticated analysis of what Utahns want, why they want it, and what they're willing to do to achieve their goals.

Detailed Survey Methodology

Each part of the survey had different goals and provided important information.

Process

1 SCENARIO SELECTIONS

- Issue "Favoriting"
- Scenario Vote

2 TRADE-OFF SURVEY

- Issue Prioritization
- Importance of Outcomes
- Trade-off Willingness

Goals

1. Educate Utahns on the key issues facing the state
2. Quantify preferences for issue-specific outcomes
3. Identify areas of consensus and disagreement across issues
4. Quantify preferences for defined scenarios

1. Force Utahns to prioritize importance / level of concern for all issues
2. Quantify importance of outcomes related to specific issues
3. Assess willingness to make trade-offs in order to reach desired outcomes

Survey Participation

A random sample survey of Utahns was used to cross-check outreach results

OUTREACH SAMPLE

Utahns that heard about the survey through Envision Utah's outreach efforts and went to the website to vote

- School outreach
- Digital media
- Partner organization emails and posts
- Radio advertisements
- News coverage

Total participants: 52,845

RANDOM SAMPLE

A statistically representative sample of Utahns randomly sampled to participate in the survey

- Direct email
- Physical mail (postcard invitations)
- Phone recruiting

Total participants: 1,264

Survey Participation

All Participants participated in Part One

OUTREACH

n=52,845

RANDOM SAMPLE

n=1,264

Outreach Participants had the option to participate in Part Two

OUTREACH

n=13,459

All **Random Sample** Participants participated in Part Two

RANDOM SAMPLE

n=1,264

Participant Comparison

Outreach and Random Sample participant responses were very much aligned across issues and preferences.

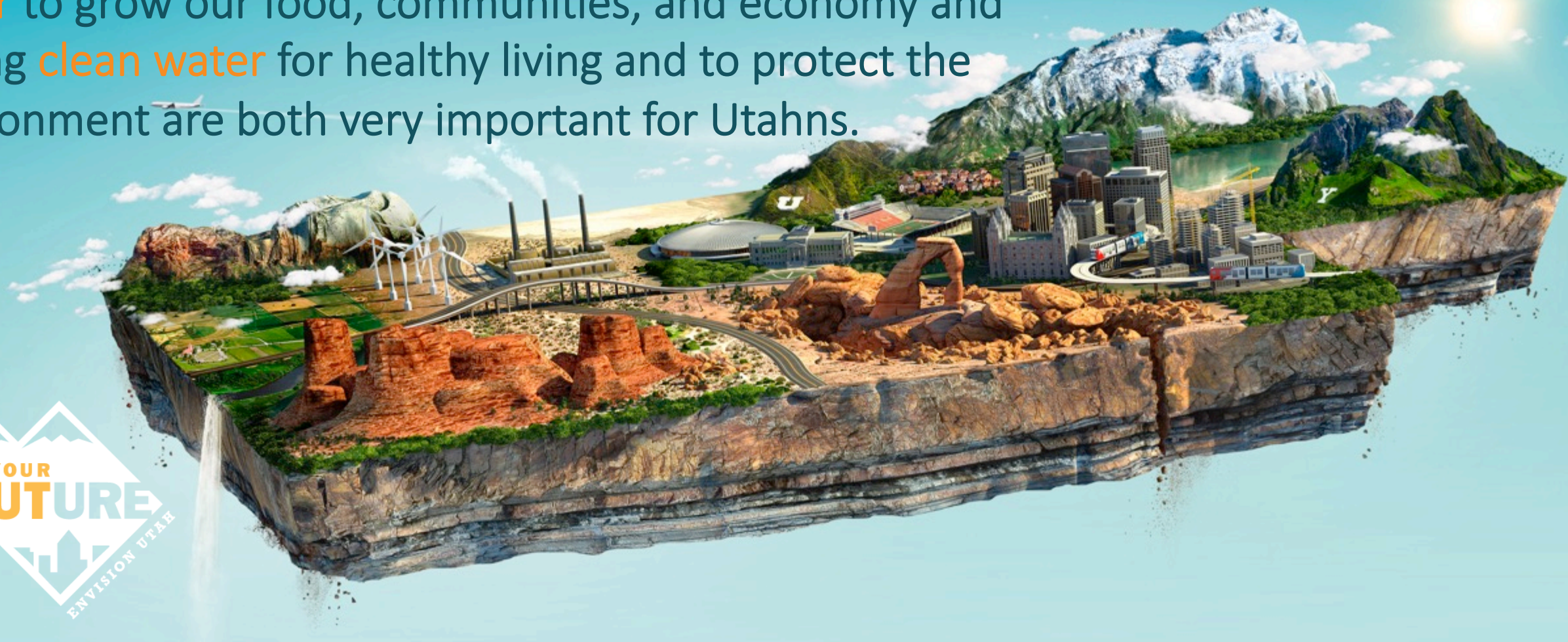
	Variance Across Most Responses
Issue "Favoriting"	+/- 3%
Scenario Vote	+/- 4%
Issue Prioritization	+/- 1.2%
Importance of Outcomes	+/- 2%
Trade-off Willingness	+/- 7%

"We can conclude that the results represent the desires and opinions of Utahns."

"Results were obtained via the largest public outreach effort in the history of Utah, resulting in public input from more than 50,000 people; an effort that was cross-checked with a random sample of 1,264 Utahns, and overseen by Dan Jones & Associates."

—Cicero; Dan Jones & Associates

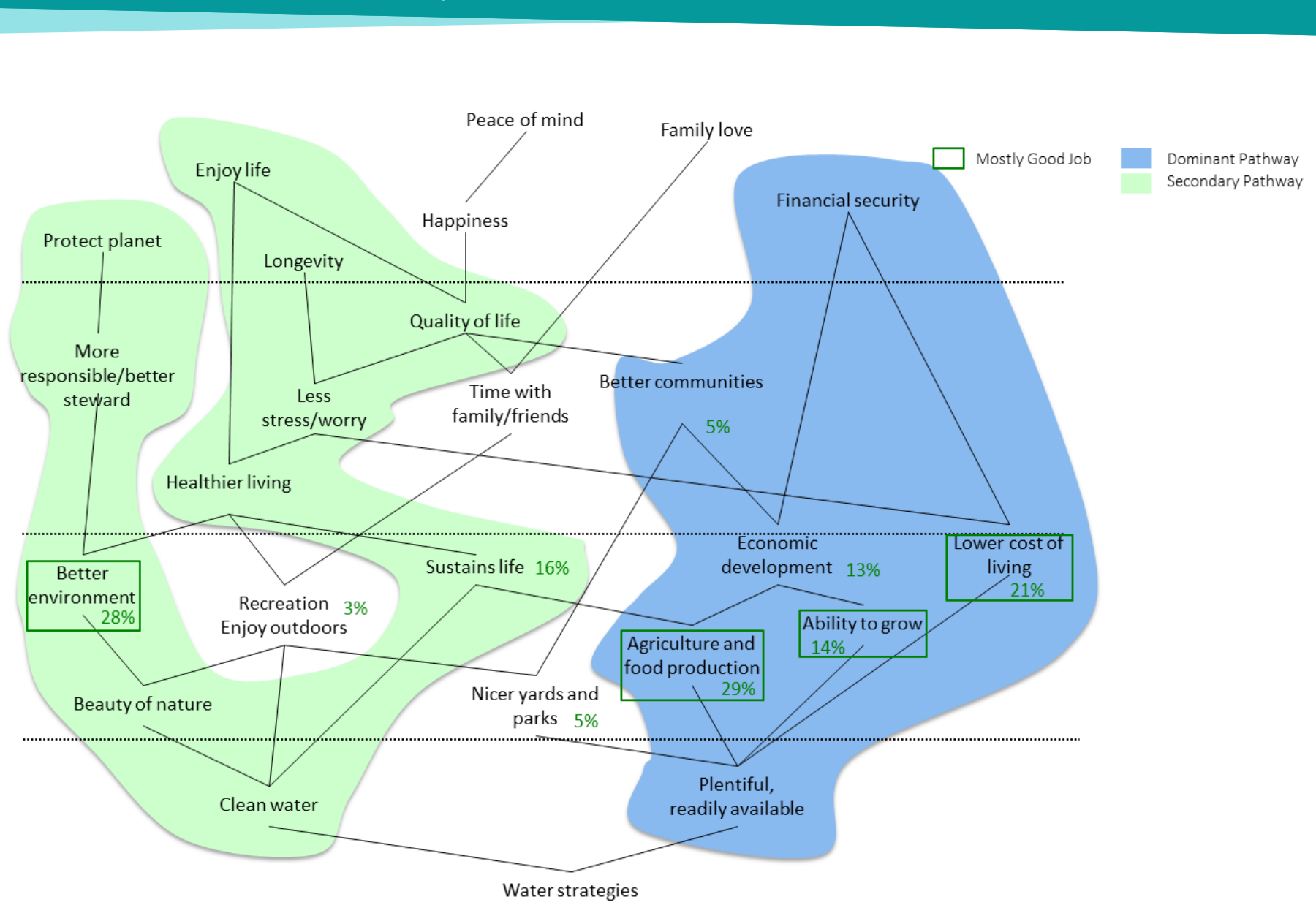
Envision Utah performed a values study in 2014 to understand what Utahns care most about regarding the future. The study found that having sufficient water to grow our food, communities, and economy and having clean water for healthy living and to protect the environment are both very important for Utahns.



Envision Utah How we grow matters.

Water Values

Water Value Pathways



Utahns want plentiful, readily available, and affordable water for food production, community growth, and economic development. They also want clean water to support nature and be good stewards of the environment.

HEART+MIND STRATEGIES

In the ***Your Utah, Your Future*** survey, Utahns were given information about Utah's water today and five different scenarios for what our water usage and sources could be like in 2050 depending on the choices we make.

Envision Utah How we grow matters.

Water Scenarios

Utah's Water Today

- Utahns are concerned about having an adequate supply of water for the future.
- Yards are usually 90+% turf with some shrubs and perennials.
- We will likely need to increase municipal & industrial supply to meet future needs.

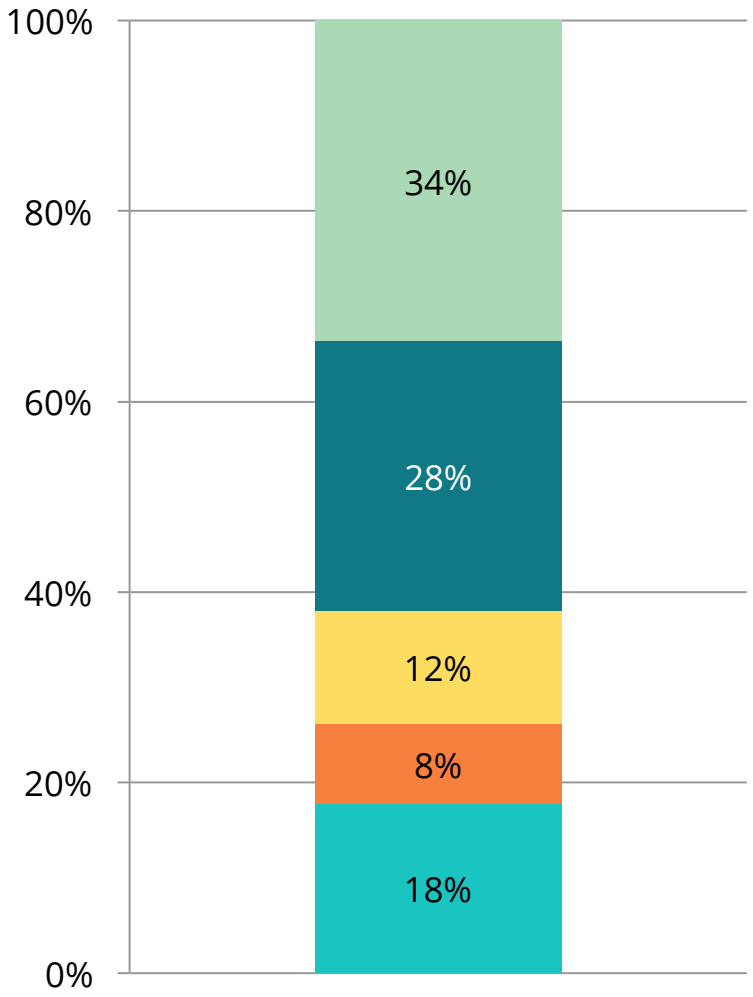
Questions Concerning the Future of Water

- Where will additional water come from to accommodate the state's growth?
  - Will we build new water projects to meet future demand?
  - Will we use less water per person in our homes, yards, and businesses?
  - Will we move water from agriculture to homes and businesses?
- How much water will there be for wildlife and recreation?
- Will we have an emergency buffer in the event of a drought?
- How will we ensure there is enough water beyond 2050?

Assumptions for All Scenarios

- Each scenario presented to the public assumes that we will develop adequate supply for the next generation
- Sego Lily is the lone exception; projections indicate southwest Utah will run out of water by around 2045 under this scenario even if all of the agricultural water in Kane and Washington Counties is moved to urban uses
- Each scenario includes the same regional growth assumptions

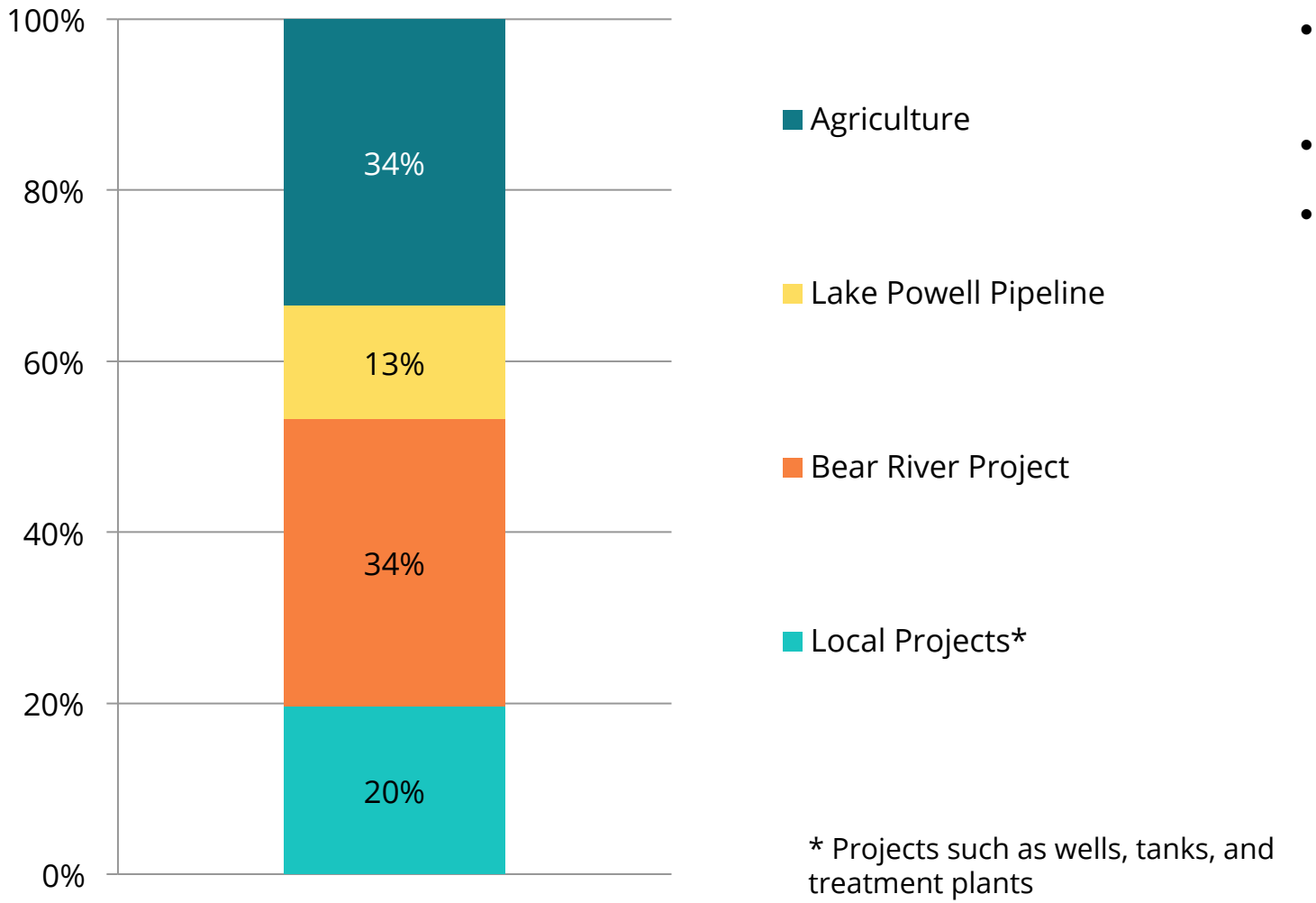
Allosaurus Scenario



* Projects such as wells, tanks, and treatment plants

- Water **use 25% less than today** per person in homes, businesses, parks, etc.
- Maximum **30% of landscaping is grass**
- To supply water to our growing population:
  - We build local water projects (wells, tanks, treatment plants, pipelines, efficiency improvements, etc.).
  - We also **build** both the **Lake Powell Pipeline** to serve southwestern Utah, and the **Bear River Project** to serve the Wasatch Front. All or portions of the **Bear River Project may be delayed** until closer to 2050, though the Lake Powell Pipeline may still be required in the near term.
  - A significant amount of our **water also comes from agricultural lands** that are replaced by homes and businesses as our communities grow and by purchasing more water from working farms, **putting those farms out of production**.

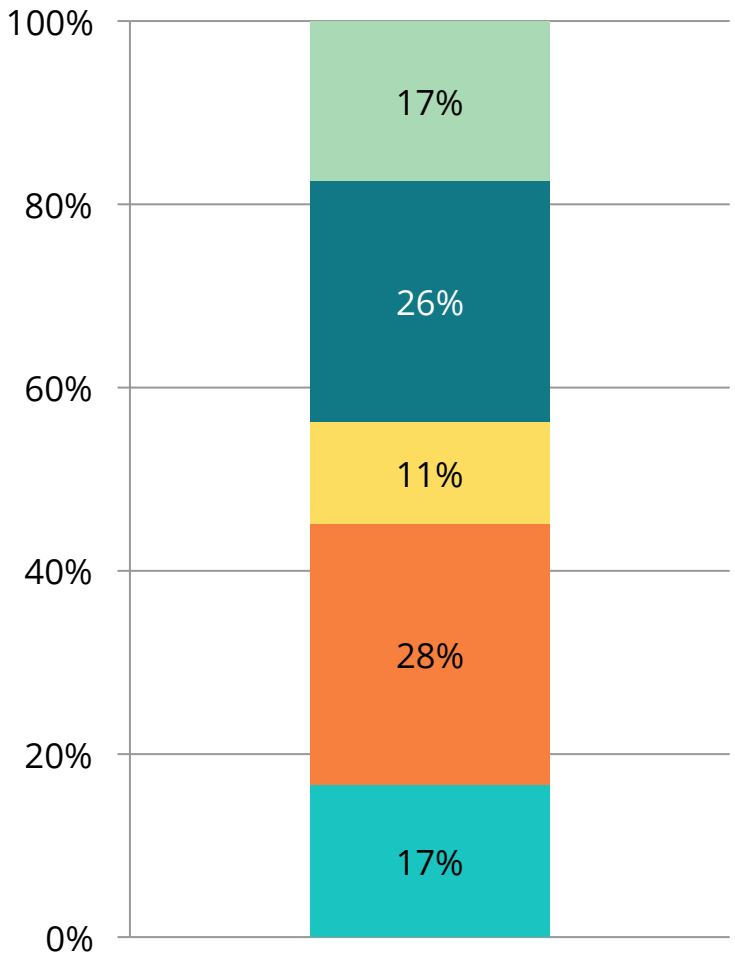
Bonneville Trout Scenario



* Projects such as wells, tanks, and treatment plants

- Water **use** per person **same as today** in homes, businesses, parks, etc.
- Our **landscaping looks same as today**
- To supply water to our growing population:
  - We build local water projects (wells, tanks, treatment plants, pipelines, efficiency improvements, etc.).
  - In the near term, we also **build** both the **Lake Powell Pipeline** to serve southwestern Utah and the **Bear River Project** to serve the Wasatch Front.
  - A significant amount of our **water also comes from agricultural lands** that are replaced by homes and businesses as our communities grow.

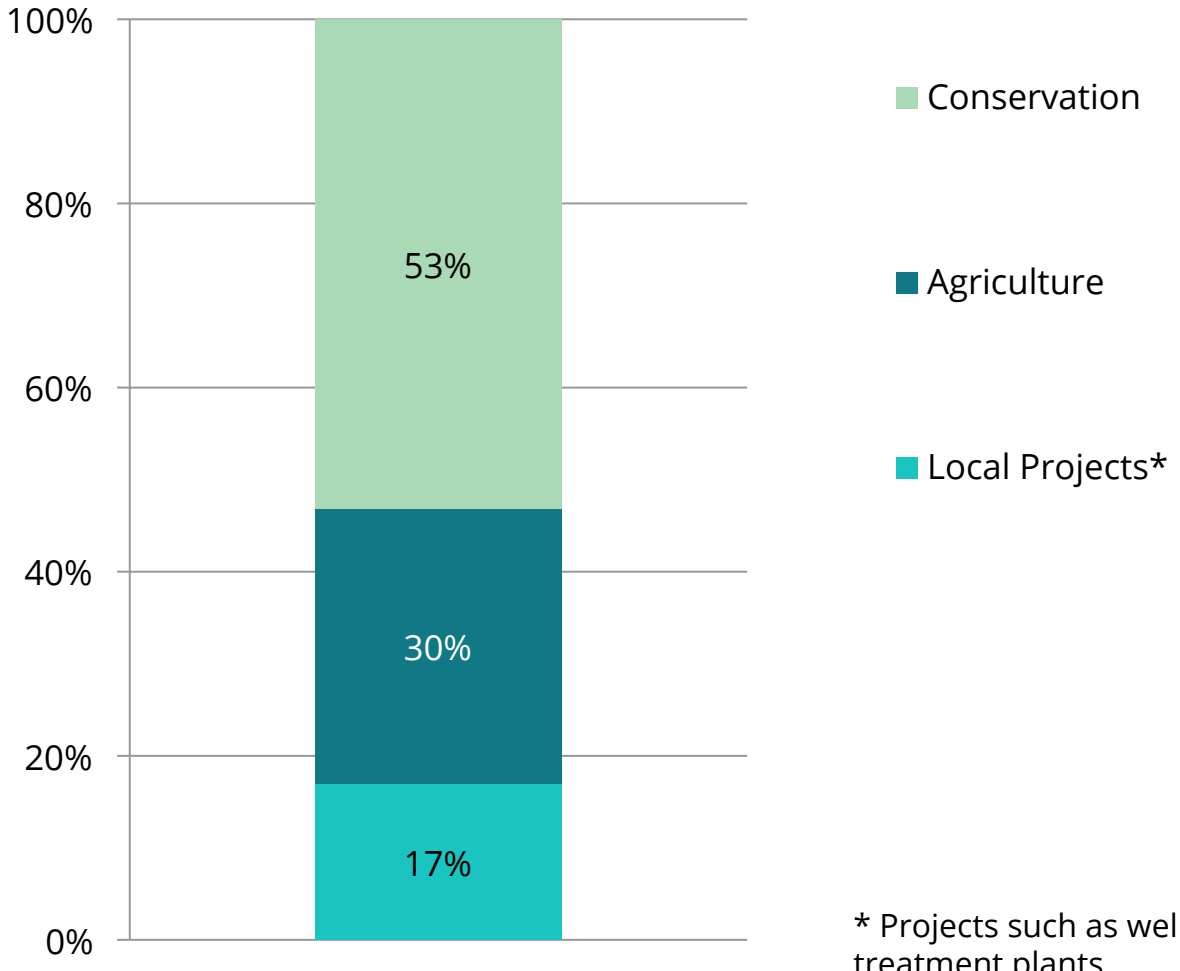
Seagull Scenario



* Projects such as wells, tanks, and treatment plants

- Water **use 15% less than today** per person in homes, businesses, parks, etc.
- Maximum **50% of landscaping is grass**
- To supply water to our growing population:
  - We build local water projects (wells, tanks, treatment plants, pipelines, efficiency improvements, etc.).
  - We also **build** the **Lake Powell Pipeline** to serve southwestern Utah and the **Bear River Project** to serve the Wasatch Front.
  - A significant amount of our **water also comes from agricultural lands** that are replaced by homes and businesses as our communities grow.

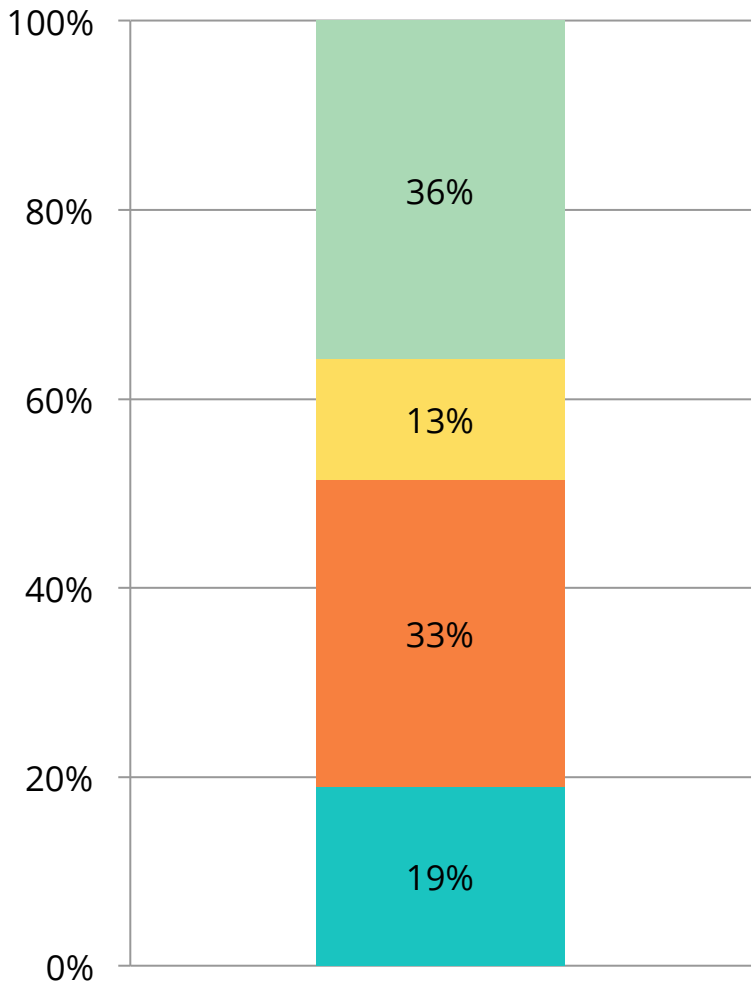
Sego Lily Scenario



* Projects such as wells, tanks, and treatment plants

- Water **use 40% less than today** per person in homes, businesses, parks, etc.
- Almost **no grass in landscaping**
- To supply water to our growing population:
  - We build local water projects (wells, tanks, treatment plants, pipelines, efficiency improvements, etc.).
  - We **do not** need to **build the Bear River Project** to serve the Wasatch Front **before 2050**.
  - We **do not build the Lake Powell Pipeline**, meaning that **southwestern Utah may not have sufficient water supply** beyond 2045 even as water is taken from all the farms in the area.
  - A significant amount of our **water comes from agricultural lands** that are replaced by homes and businesses as our communities grow. We also buy more water from working farms, **putting those farms out of production**.

Quaking Aspen Scenario



* Projects such as wells, tanks, and treatment plants

- Water **use 25% less than today** per person in homes, businesses, parks, etc.
- Maximum **30% of landscaping is grass**
- To supply water to our growing population:
  - We build local water projects (wells, tanks, treatment plants, pipelines, efficiency improvements, etc.).
  - We also **build** both the **Lake Powell Pipeline** to serve southwestern Utah and the **Bear River Project** to serve the Wasatch Front. All or portions of the Bear River Project may be delayed for a decade or more, though the Lake Powell Pipeline may still be required in the near term.
  - As homes and business replace agricultural lands, the **water from** those **farms** is **moved to other farmlands**.

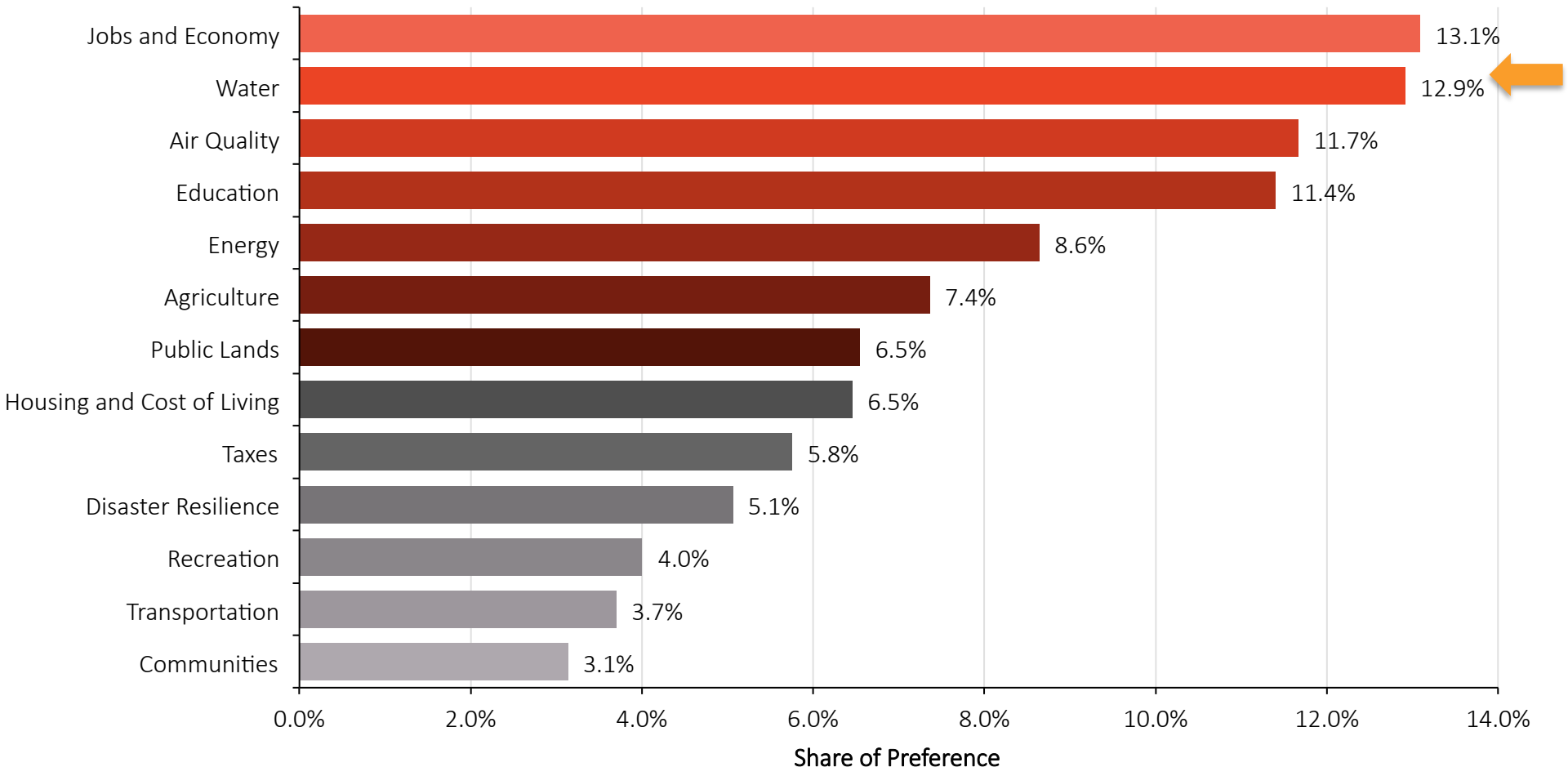
Change in Typical Landscapes

Envision Utah How we grow matters.

Water Survey Results

Level of Concern for the Future—Outreach Sample Results

Share of Preference, n=13,459



In the 2014 values study, Utahns ranked all 11 issues as being important to Utah's future. The 2015 survey used a sophisticated technique to force a "weighting" of the issues, providing a wider gradation of concern.

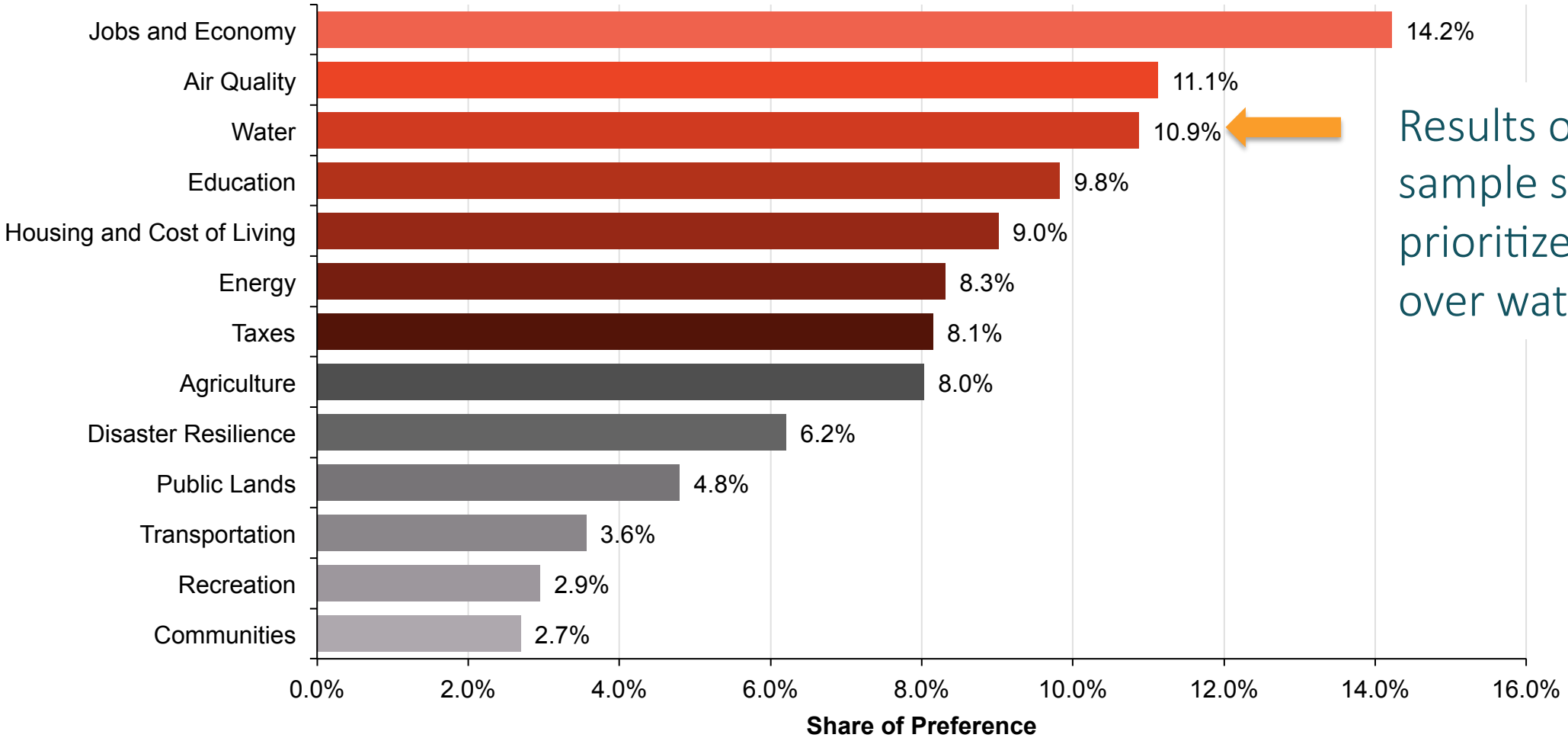
Source: Survey – Keeping in mind that between now and the year 2050, Utah will almost double in population, please consider how important each of the following issues is to you. Considering only these four issues, which is the Most Important and which is the Least Important as you think about Utah's future?

OUTREACH
n = 52,845

Level of Concern for the Future—Random Sample Results

Share of Preference, n=1,264

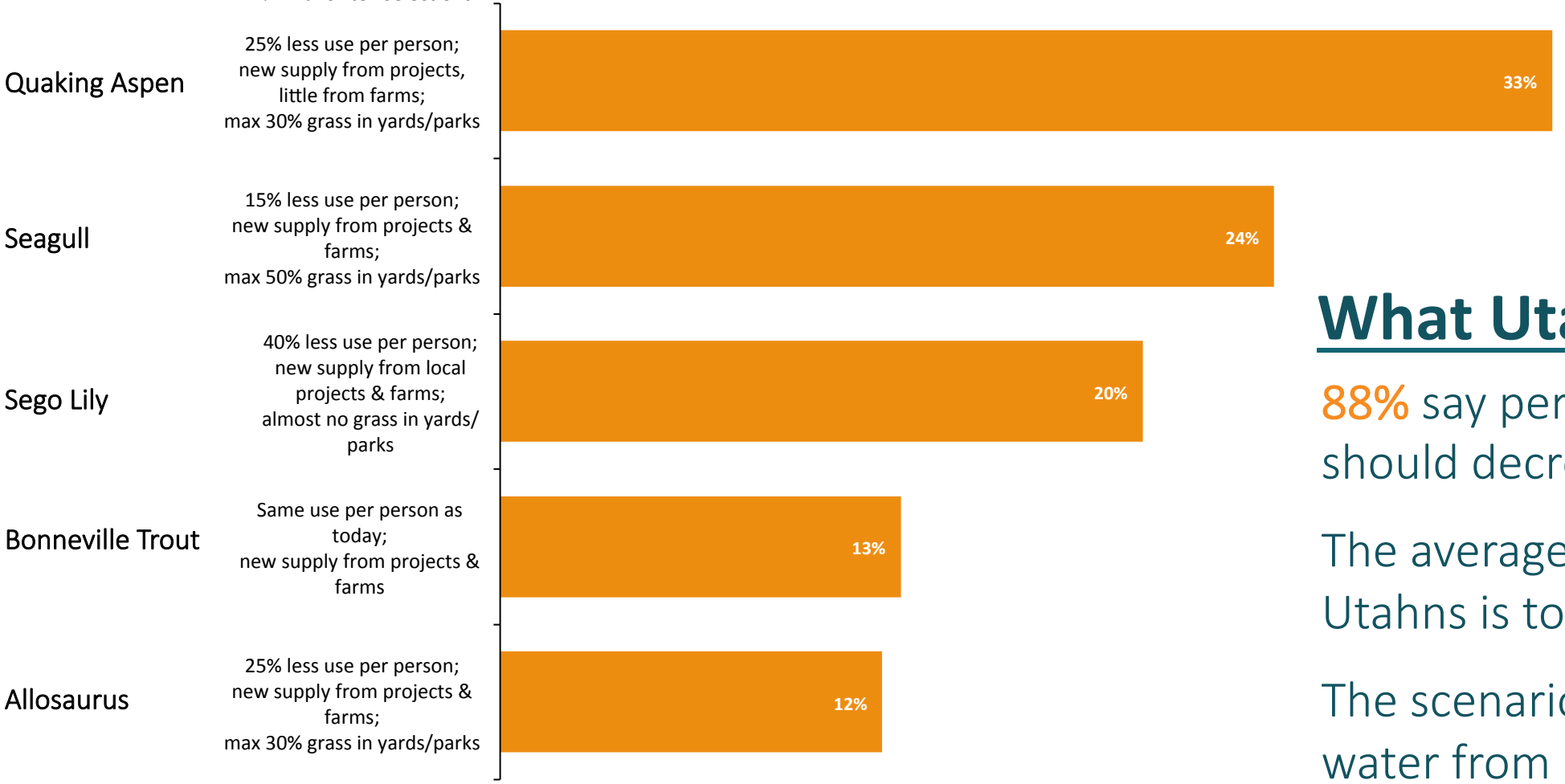
RANDOM SAMPLE n = 1,264



Results of the random sample survey prioritized air quality over water.

Source: Survey – Keeping in mind that between now and the year 2050, Utah will almost double in population, please consider how important each of the following issues is to you. Considering only these four issues, which is the Most Important and which is the Least Important as you think about Utah's future?

Issue-specific Scenarios
% "Favorite" Selections



OUTREACH
n = 52,845

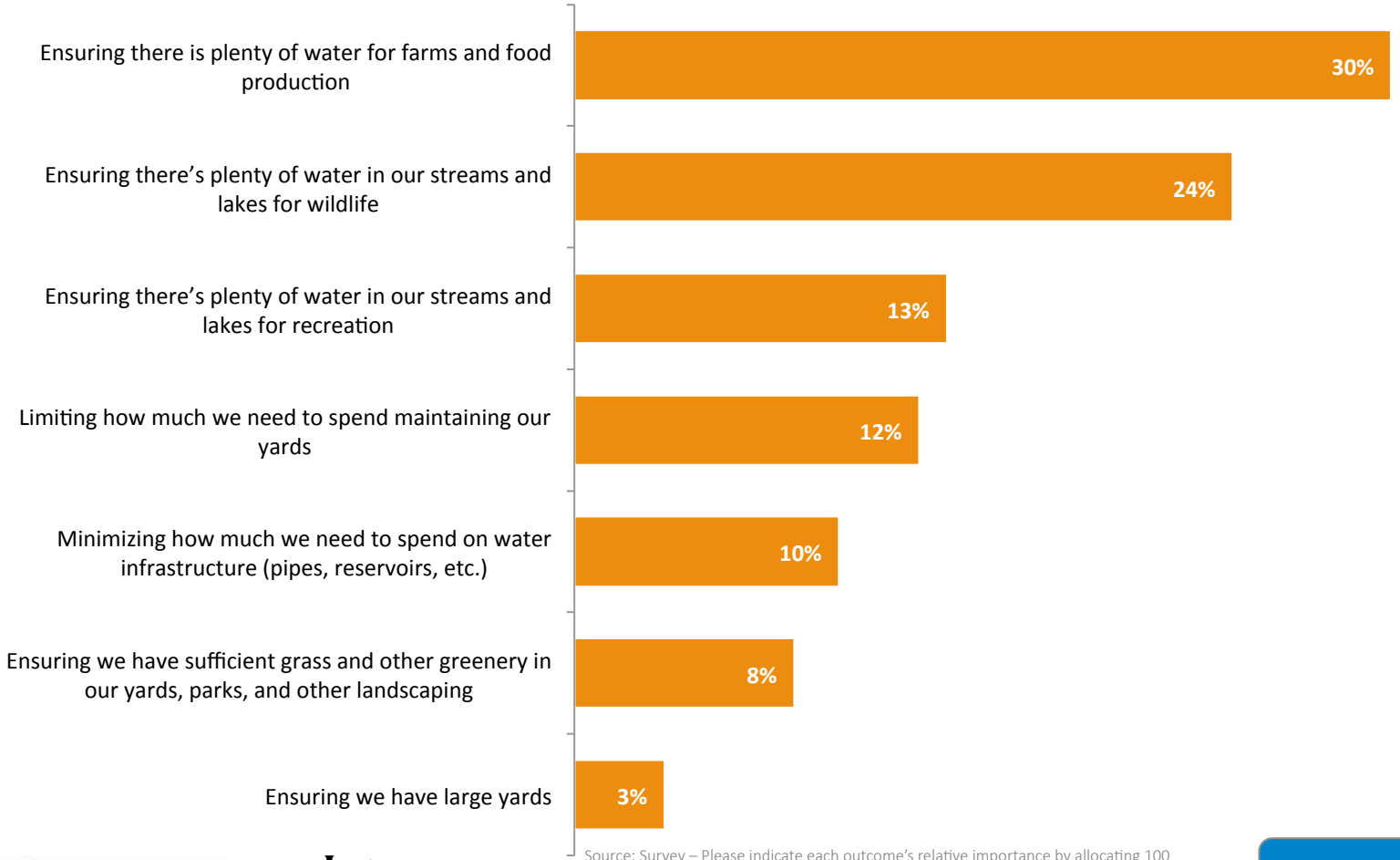
What Utahns Want:

88% say per person water use should decrease

The average preference among Utahns is to reduce use by 23%

The scenario that does not take water from agriculture is preferred more than any other

Importance of Outcomes
Average % Allocated



Source: Survey – Please indicate each outcome's relative importance by allocating 100 points across all outcomes. The more points you allocate to a given outcome, the more important it is to you to achieve that outcome.

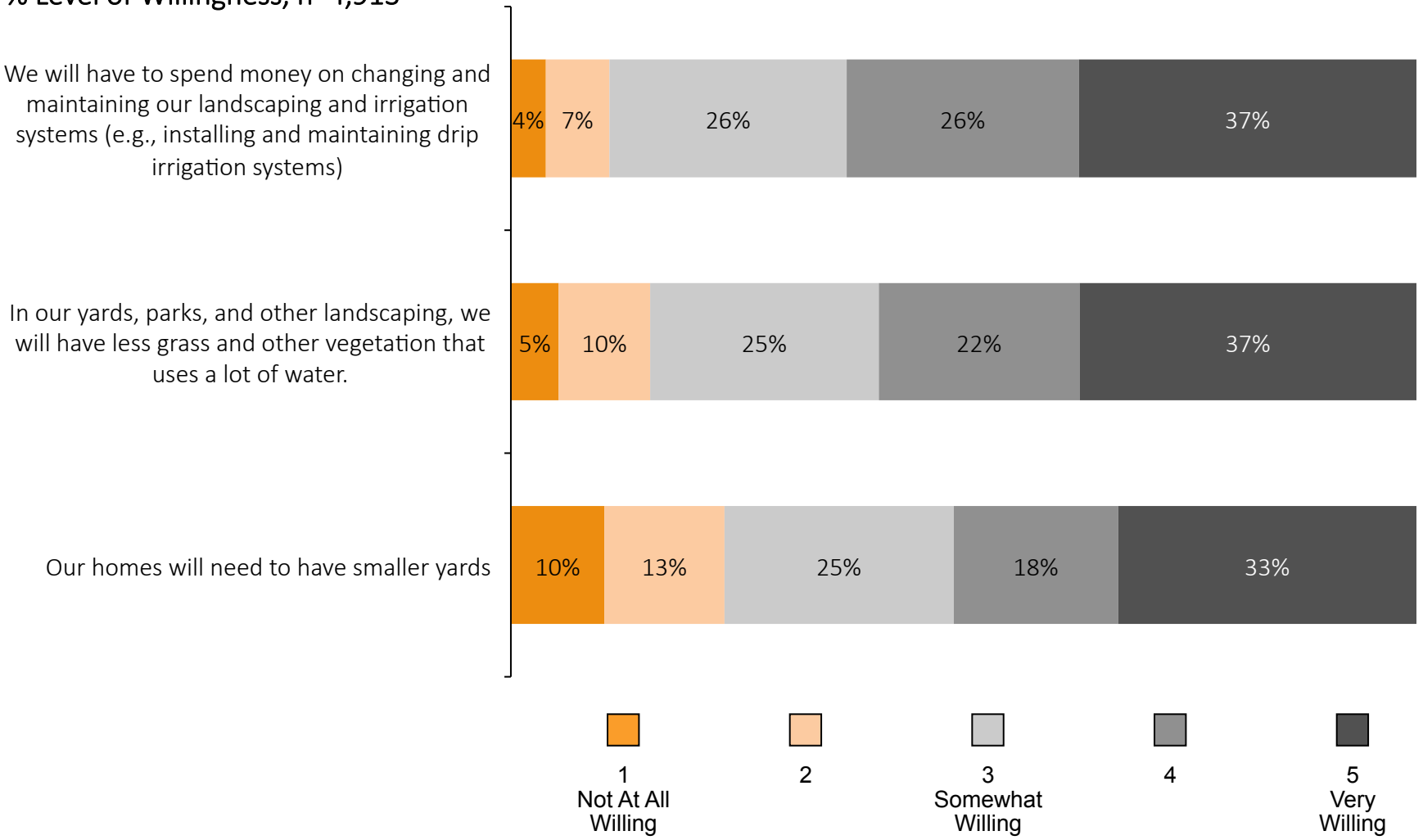
OUTREACH
n = 52,845

Cicero Dan Jones & Associates Public Opinion & Market Research

Why Utahns Want to Conserve Water:

Utahns want to ensure there is plenty of water for agriculture and wildlife. They are less concerned about water for their yards.

Willingness to Make Tradeoffs
% Level of Willingness, n=4,913



What Utahns are willing to do:

To conserve water, Utahns are very willing to spend money to change their landscaping and irrigation systems, have less grass and plant more drought tolerant vegetation, and shift to smaller yards.

Cicero | Dan Jones & Associates Public Opinion & Market Research

Source: Survey – Please indicate your willingness to make each trade-off in order to focus on water conservation in Utah. Outcomes:

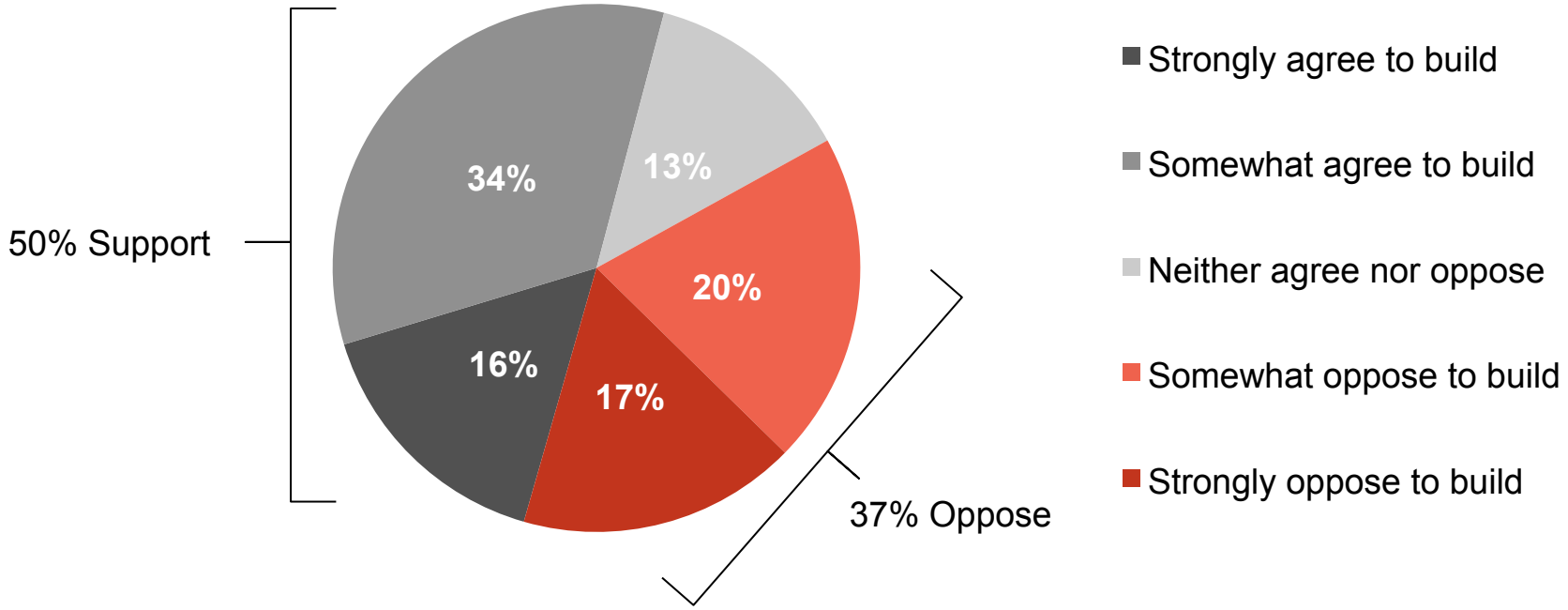
- Less spending on water storage and conveyance
- Less need to move water from agriculture and natural environment to municipal and industrial uses

OUTREACH
n = 52,845

Statewide Support for Lake Powell Pipeline

% Total Respondents, n=3,899

OUTREACH
n = 52,845



Source: Survey – The Utah legislature has approved the construction of a pipeline (known as the "Lake Powell Pipeline") moving water from the Colorado River to southwest Utah. Below are opposing views of the pipeline:

Mr. Smith believes….

The Lake Powell Pipeline should be built because:

- If the pipeline is not built, it would not be possible to accommodate the St. George area's projected growth beyond 2040–45, even if grass is removed from every yard and every irrigated farm in the area is taken out of production to move water to urban uses
- It is important to claim Utah's full allocation of the Colorado River, which has been divided among several states, to prevent another state from claiming the water

Do you agree with Smith or Jones?

Mr. Jones believes…

The Lake Powell Pipeline should not be built because:

- The cost is too high (approximately $1 billion, which would likely be financed in part by the state and repaid by local water fees)
- The pipeline would have environmental impacts to the Colorado River system downstream from Lake Powell

In addition to the specific results from water questions, results from other topics show strong support for outcomes or strategies that would retain water in agricultural use.

Envision Utah How we grow matters.

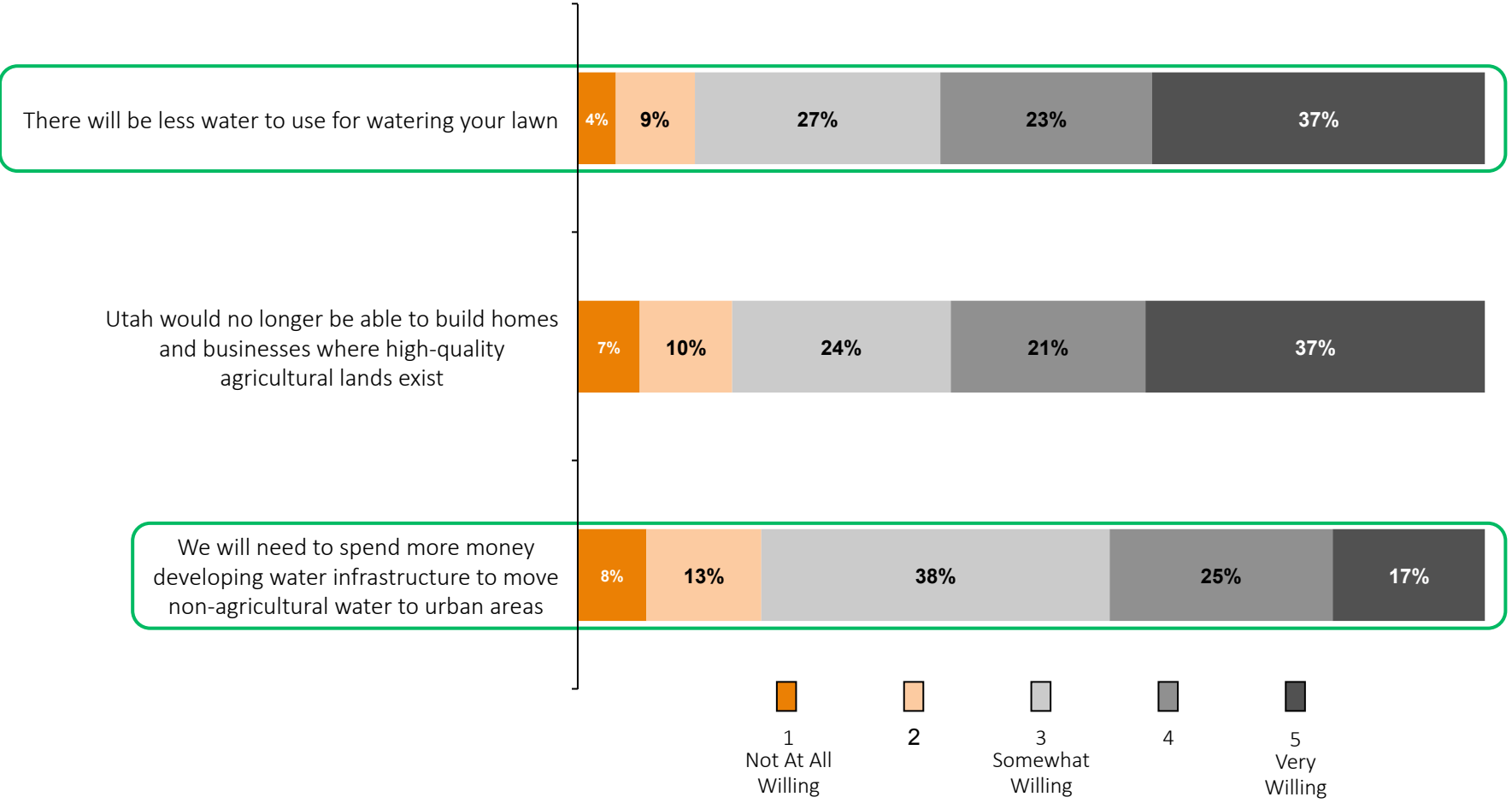
Supporting Survey Results

Supporting Survey Results

OUTREACH
n = 52,845

Willingness to Make Tradeoffs—Agriculture

% Level of Willingness, n=4,875



Utahns are very willing to use less water on their lawns and spend money on infrastructure to avoid taking water from agriculture.

Source: Survey – Please indicate your willingness to make each trade-off in order to secure and expand agriculture in Utah.

The Survey is still available!

Visit **envisionutah.net** to view the **choices for water** and each of the 11 topics in the *Your Utah, Your Future* survey.