



CENTRAL WASATCH VISITOR USE STUDY – PHASE I REPORT

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INSTITUTE OF
**OUTDOOR
RECREATION
AND TOURISM**
UTAH STATE UNIVERSITY

ABOUT

- Founded in 1998 by the Utah State Legislature
- Housed in Extension
- Mission:
 1. Provide data for the Legislature and state agencies in their decision-making processes on issues relating to tourism and outdoor recreation
 2. Assist community officials as they attempt to balance the economic, social, and environmental tradeoffs in tourism development
 3. Lead interdisciplinary approach of research and study on outdoor recreation and tourism

SERVICES



Visitor Use Monitoring and
Management



Mobile Location Analytics



Needs Assessments



Recreation Economics

OUTLINE

1. Objectives
2. Overview of the VUS
 1. Phase I – Scoping
 2. Phase II – Assessments
3. Phase I – Findings
4. Planning for Phase II
 1. Ecological and Physical Assessments
 2. Social Assessment
5. Questions

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- The purpose of this study is to explore how outdoor recreation use and its associated impacts can be quantified and monitored over time within the canyons.
- Our goal is to establish a set of indicators that are collaboratively generated and grounded in the best-available science and reflect the unique needs and concerns of the diverse stakeholders and interest groups who use, manage, and depend on the canyons.

Our vision for this project is to establish scientifically grounded and collaboratively informed indicators of the ecological, physical, and social characteristics of distinct types of outdoor recreation settings within the Central Wasatch.

ECOLOGICAL

PHYSICAL

SOCIAL

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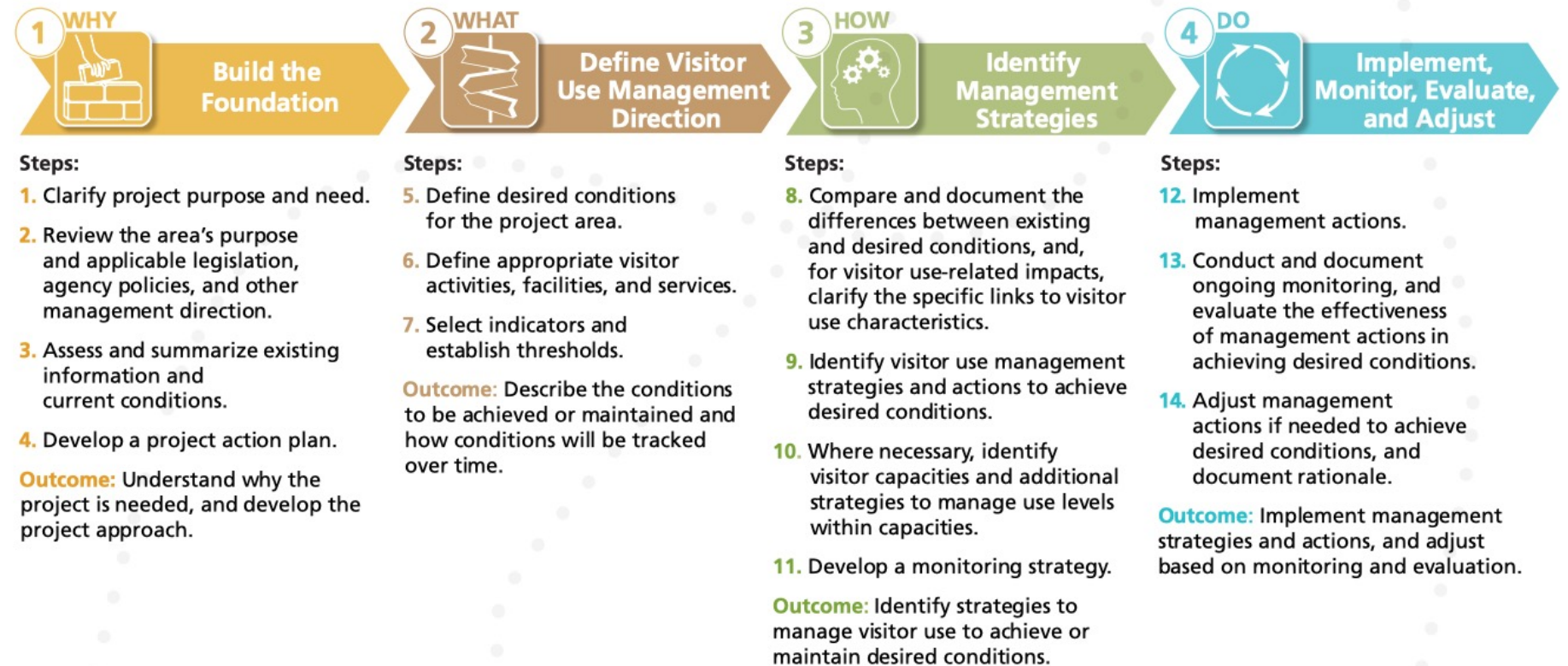
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INTERAGENCY VISITOR USE MANAGEMENT COUNCIL

Elements and steps of the Visitor Use Management Framework



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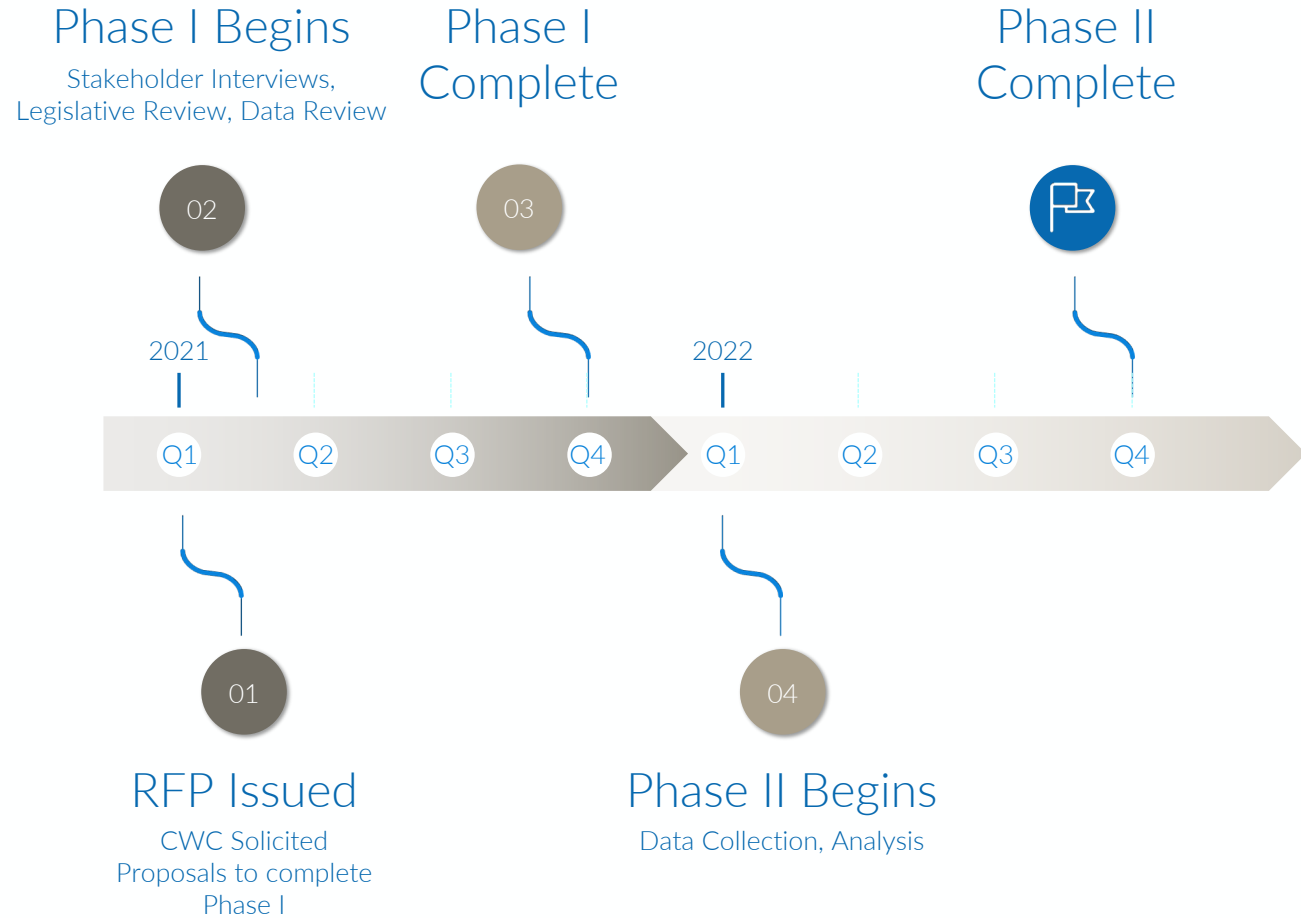
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Phase I Tasks

1. Conduct a knowledge gap analysis of current outdoor recreation research and monitoring in the Uinta-Wasatch-Cache National Forest and gathered stakeholder perspectives on key indicators;

LITERATURE REVIEW

STAKEHOLDER INTERVIEWS

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2. Catalogue and synthesize all data related to outdoor recreation use within the canyons since 2000;

DATA COMPILATION

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DATA COMPILATION

3. Conduct a legislation and policy review to identify and document all legal or managerial processes and standards that apply to managing outdoor recreation use within the canyons;

LEGISLATIVE AND POLICY REVIEW

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LEGISLATIVE AND POLICY REVIEW

4. Scope and assess potential indicators of ecological, physical, and social characteristics of recreation settings within the Central Wasatch.

INDICATOR ASSESSMENT

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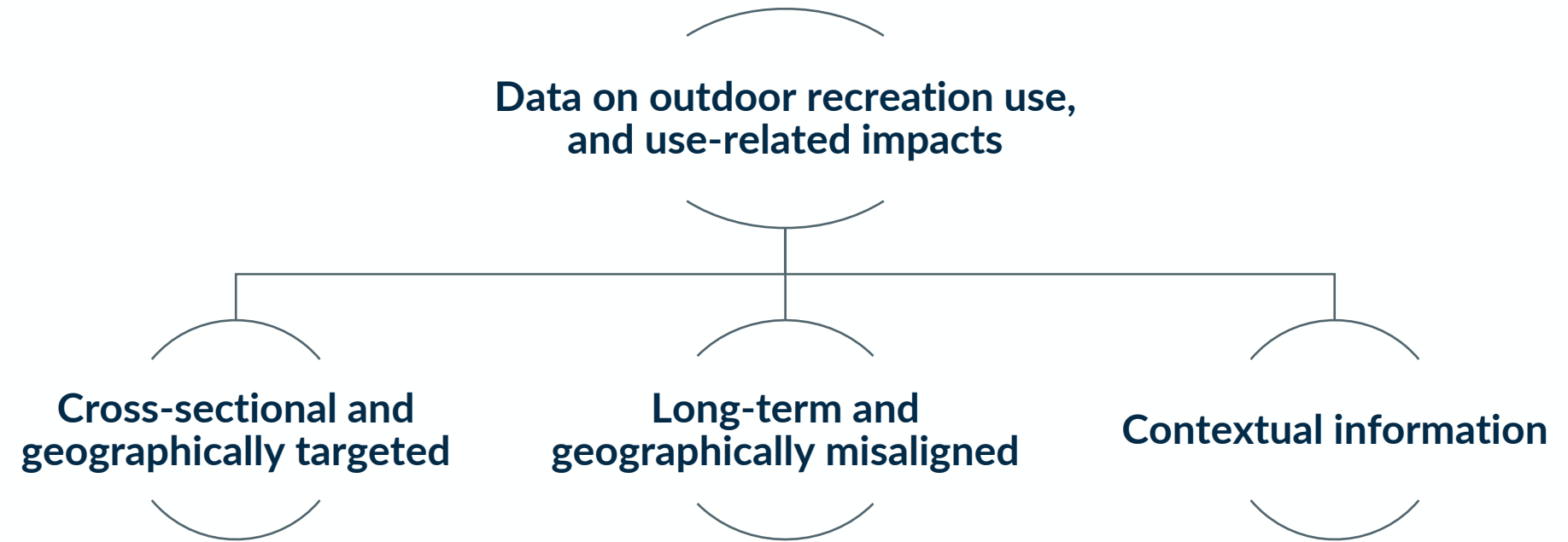
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Reference	Data type	Title of study or dataset	Agency	Year	Purpose	Findings
Cross-sectional or geographically targeted research						
Atkins et al., 2006	Report on 3-day planning charette	Transportation observations, considerations, and recommendations for the tri-	Inter-agency Transportation Assistance Group,	2006	Assess not only the present status of transportation facilities, but to identify challenges and opportunities to improve system safety,	1) Develop a strategic, long-range, Tri-Canyons transportation planning activity, based on cooperative, collaborative and continuing planning efforts, ultimately
Reference						
Data type						
Title of study or dataset						
Agency						
Year						
Purpose						
Findings						
Cross-sectional or geographically targeted research (cont.)						
Lamborn, Burr, & Kessler, 2014, 2015b, 2015a;	Technical report	2014-2015 Central Wasatch visitor use study: A survey of Brighton, Solitude, Snowbird,	Save Our Canyons	2015	Collect visitor use data from both dispersed and developed recreation areas on and around the Salt Lake Ranger District of the Uinta-Wasatch-	Descriptive statistics characterizing visitor use throughout the region. Findings specific to Big Cottonwood Canyon, Little Cottonwood Canyon, and
Reference						
Data type						
Title of study or dataset						
Agency						
Year						
Purpose						
Findings						
Cross-sectional or geographically targeted research (cont.)						
Carte Burr, & Lofthouse, 2014, 201	Dissertation	Towards year-round participation: Three investigations into the relationships between weather and outdoor recreation	None	2019	1) Examine how the impact of weather on nonoccupational physical activity has been investigated in the past; 2) Develop a conceptual model a conceptual model of the ways in which recreationists engage with weather during outdoor recreation; and 3) Examine qualitative descriptive exploration of winter recreationists' perceptions of the seasonal recreation setting in relation to their experiences.	Recreationists perceive several season-specific biophysical and social setting attributes that together reportedly lead to a qualitatively unique experience during winter.
Lamborn e 2017						
Long-term and geographically misaligned data						
USDA Forest Service, Uinta-Wasatch-Cache National Forest, 2017	Periodic (5-year) forest-wide monitoring data	Uinta Wasatch Cache National Forest National Visitor Use Monitoring Data	USDA Forest Service	2012-2017 (at 5-year intervals)	The National Visitor Use Monitoring (NVUM) program provides reliable information about recreation visitors to national forest system managed lands at the national, regional, and forest level.	Descriptive statistics of forest-wide visitation as well as a variety of characteristics of forest visitors (sociodemographic characteristics, activity choices, spending behavior, perceptions of crowding, and satisfaction with forest visits).
Hull, Latham, 2021	Daily traffic volume data for SR-190 and SR-201	Average Annual Daily Traffic Data, Continuous Count Station Data	Utah Department of Transportation	Average Annual Daily Traffic Data (1981-2019); Continuous Count Data (1990-2021)	Annual Average Daily Traffic reports the total volume of vehicle traffic of a highway or road for a year divided by 365 days. It is meant to represent traffic on a typical day of the year. The Continuous Count Stations report on the hourly traffic volumes by lane for each station.	Descriptive statistics of annual and hourly traffic volume data.
Wilkinson,						
Contextual information						
Jones 2004	Hardy, 1975	Thesis	The historical development of Wasatch trails in Salt Lake County	None	1975	Document the formation and history of trails on national forest lands within Salt Lake County
Kay, Zajchowski Brownlee,	Ramthun, 1995	Peer-reviewed journal article	Factors in user group conflict between hikers and mountain bikers	None	1995	To examine how outgroup evaluation, leisure activity identification, years of experience, and frequency of participation affect perceptions of conflict between mountain bikers and other user groups.
Lamborn 2016	Zajchowski al., 2019	Peer-reviewed journal article	The lost narrative: Ecosystem service narratives and the missing Wasatch watershed conservation story	None	2015	Document the structure and formation of watershed protection efforts in the Central Wasatch
Zajchowski al., 2021						1 This study specifically looked at the Skyline Nature Trail and the Mt. Wire summit trail, which are just north of Emigration Canyon and not within Big Cottonwood Canyon, Little Cottonwood Canyon, or Millcreek Canyon. We include the study in the review because of its proximity to the Tri-Canyon area.
Zhang & Smith, 2018	Peer-reviewed journal article	Weather and air quality drive the winter use of Utah's Big and Little Cottonwood Canyons	None	2018	To examine the influences of daily weather conditions and air quality on winter use of Big and Little Cottonwood Canyons.	Cooler temperatures and greater amounts of snow in the canyons, as well as poorer air quality in the city, have a positive and significant influence on winter canyon use.

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STAKEHOLDER INTERVIEWS

COMMON THEMES:

There is a need to balance use and development of the Central Wasatch with protecting the ecosystem, watershed, diversity of experiences, and other things that make the Central Wasatch such a special and important place for people to live in/near and visit.

Concern about the fact that we do not have a good idea of how many people are visiting the Central Wasatch in general, not to mention where people are going, how they are recreating and experiencing the canyons, and what impacts they may be causing.

Sense that some people want the study to determine the number of people that should be allowed in the canyons at any given time. Other interviewees expressed a concern that a visitor use study will be used to restrict numbers of visitors or certain kinds of visitation in the Central Wasatch, such as to limit how many people can go to a trail head or how many people can go to a ski area on any particular day

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DATA COMPILATION

	USDA Forest Service National Visitor Use Monitoring Program
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Central Wasatch Visitor Use Study	
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	Salt Lake Climbers Alliance Surveys
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Wasatch Backcountry Alliance and USDA Forest Service Trail Counters	
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	Utah Department of Transportation Traffic Counts
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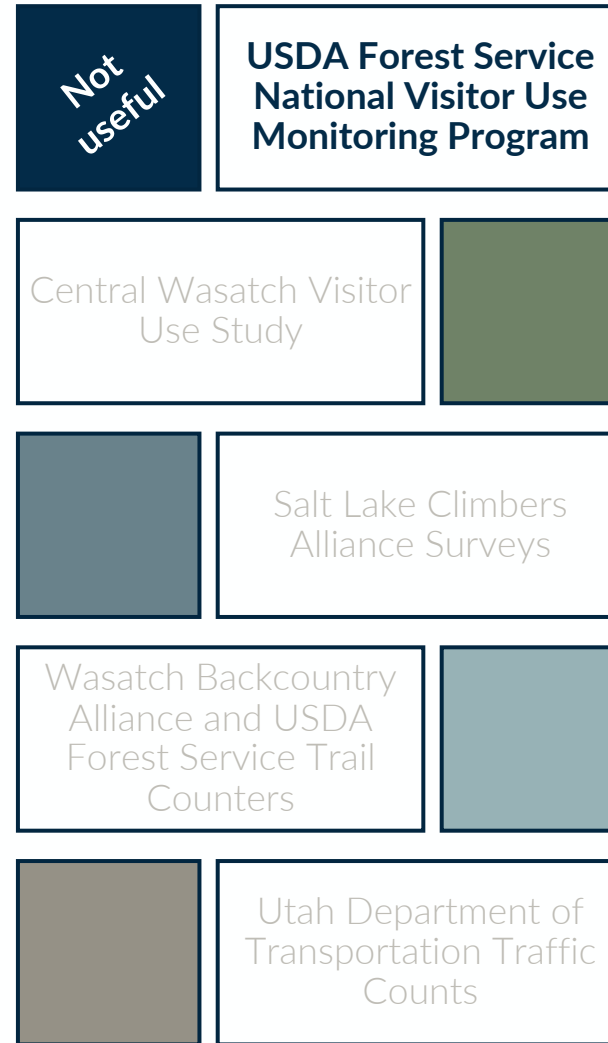
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Year (Fiscal)	Canyon	Site Days Sampled	Settings Surveyed	Survey Responses
2017	Big Cottonwood	25	9	360
2017	Little Cottonwood	11	7	280
2017	Millcreek	24	15	334
		60	31	974
2012	Big Cottonwood	22	7	346
2012	Little Cottonwood	11	8	112
2012	Millcreek	14	7	177
		47	22	635
2007	Big Cottonwood	10	2	65
2007	Little Cottonwood	6	3	36
2007	Millcreek	10	8	36
		26	13	137

Because the sampling frame for the National Visitor Use Monitoring program is created based upon sites across the entire forest, we cannot generate any inference about use levels or perceptions of use at spatial resolutions smaller than the entire Uinta-Wasatch-Cache National Forest.

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DATA COMPILATION

USDA Forest Service National Visitor Use Monitoring Program

Central Wasatch Visitor Use Study	Somewhat useful
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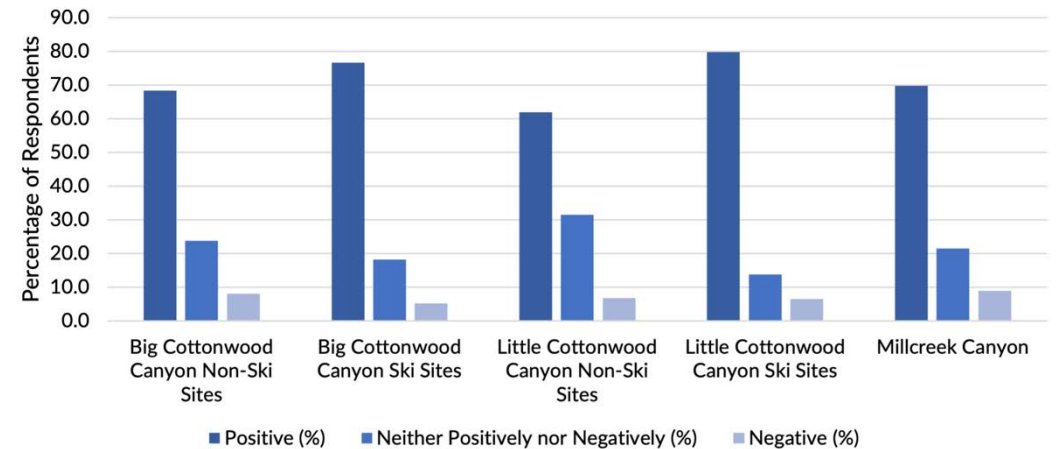
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Canyon	Site Days Sampled	Settings Sampled	Survey Responses
Big Cottonwood	92	16	1,183
Little Cottonwood	104	14	1,711
Millcreek	111	10	839
Total	294	40	3,733

Data on possible social indicators include:

- Socioeconomic and demographic characteristics of visitors within each canyon.
- Types of outdoor recreation activity happening within each canyon.
- Desired outdoor recreation experiences of visitors within in each canyon.
- Displacement out of the canyons because of crowding and density of use.



LEGISLATIVE AND POLICY REVIEW

What mechanisms exist to either monitor or manage recreational use of the canyons?

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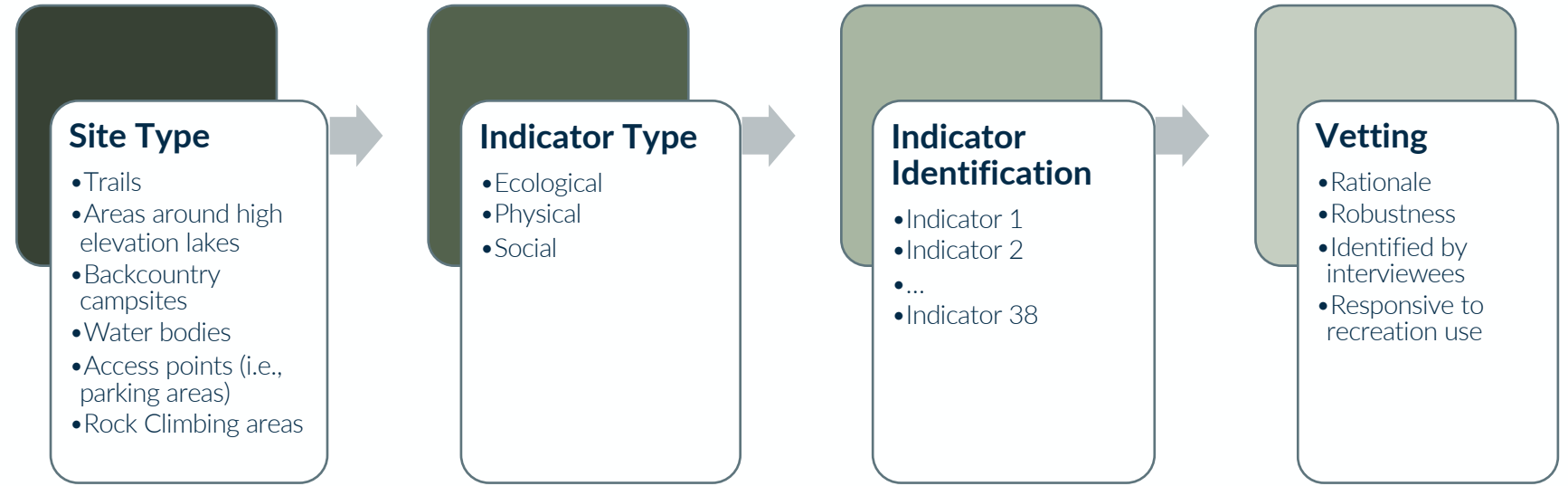
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INDICATOR ASSESSMENT



INDICATOR ASSESSMENT

Trails

- Informal trail proliferation and condition
- Trail condition
 - Trail width; linear extent
 - Trail condition class; linear extent
 - Trail depth (incision); linear extent

Areas around high elevation lakes

- Disturbed shoreline

Backcountry campsites

- Campsite proliferation; campsite number and location
- Campsite area
- Campsite condition

Water bodies

- Water quality
 - E. coli/coliforms; counting of indicator organisms
 - Nitrate
 - Dissolved organic Carbon
 - Particulate Carbon
 - Suspended sediment
 - Total dissolved Nitrogen

Access points (i.e., parking areas)

- Roadside vegetation disturbance
- Parking
 - Developed and roadside parking use
 - Average time a car is parked

Rock climbing areas

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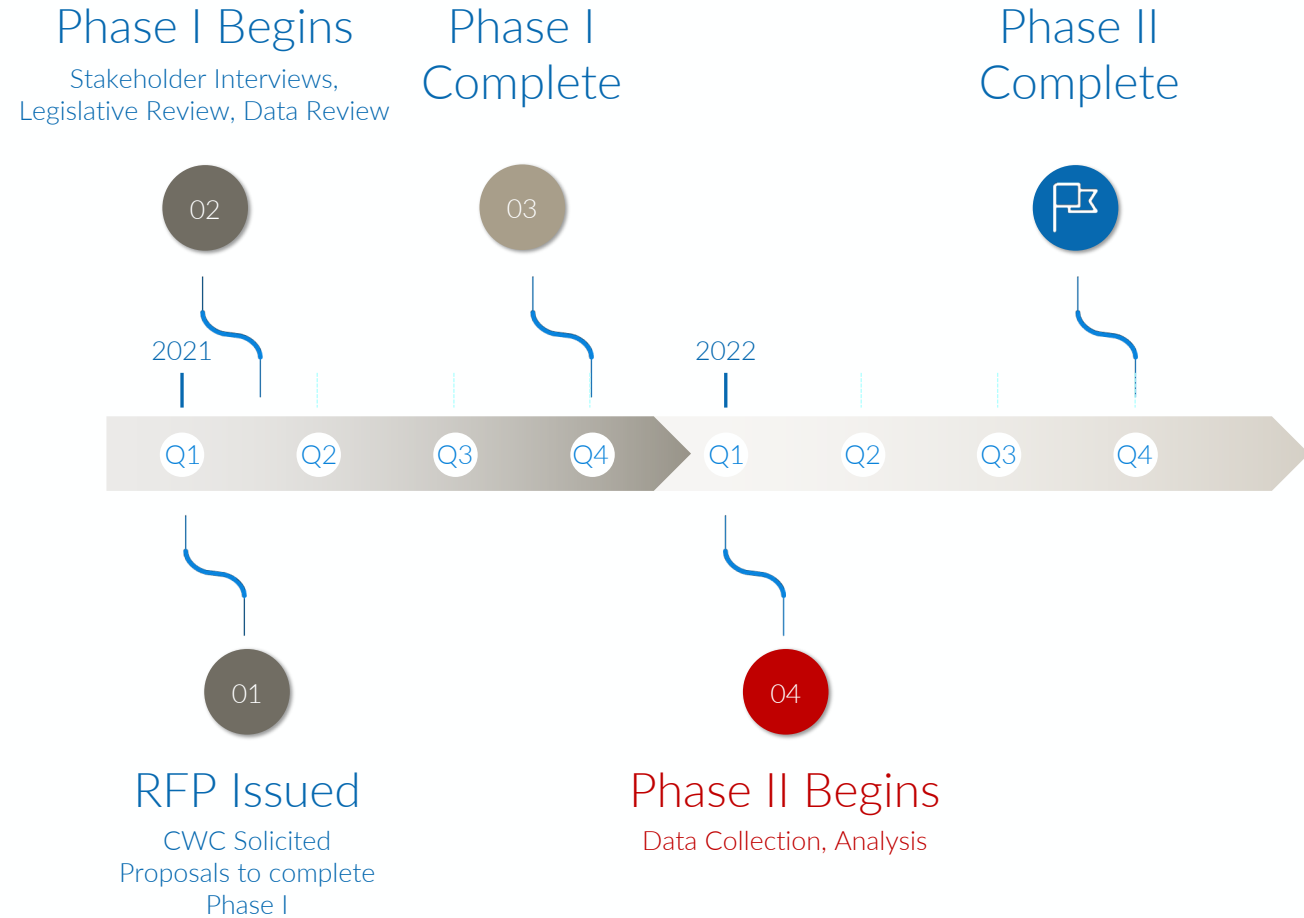
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Quantify



Examine relationships with use

- Infrared trail counters
- Trail cameras
- Pneumatic traffic counters
- Mobile location data

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GOALS OF PHASE II

Develop a scientifically grounded understanding of:

- the spatial and temporal dynamics of current and projected outdoor recreation use;
- the extent to which outdoor recreation activity within the canyons affects key indicators of ecological and physical resource conditions; and
- the likely changes in ecological and physical resource conditions under projected levels of use.

QUESTIONS

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