[](http://www.health.utah.edu/parks-recreation-tourism/research/ORET.php)

**Research Prospectus**

A comprehensive evaluation of the recreational use of Big Cottonwood and Little Cottonwood Canyons to inform recreational systems and impacts

**The Project Purpose and Need**

This prospectus describes a proposed research project between the University of Utah’s Outdoor Recreation, Education and Tourism Laboratory, and the Central Wasatch Commission. The purpose of this project is to evaluate and determine Big and Little Cottonwood Canyon’s:

1. Current and ideal temporal and spatial distributions of recreational visitor use;
2. Determine the relationships between use patterns and the ecological and social conditions in key locations (including but not limited to trails, visitor attractions, and trailheads); and,
3. Provide information on social, ecological, and physical visitor related inputs for ongoing water quality, experiential, and transportation needs.

**Benefits**

Specifically, the results of this project will provide information to assist in the management of each Canyon prescriptively for different physical, ecological, and social conditions, to plan for and achieve an ideal transportation system, increase recreation quality, appropriately distribute use, and plan for increased recreational visitation while preserving desired conditions.

The approach and concepts described in this document are underpinned by and directly align with the Interagency Visitor Use Management Council’s a) Visitor Use Management Framework, and b) Visitor Capacity Guidebook (IVUMC, 2019). The U.S. Forest Service is a council member and has embraced the content of the framework and capacity guidebook to guide current and future visitor use management in forests and grasslands. The IVUMC defines visitor capacity as “…the maximum amounts and types of visitor use that an area can accommodate while achieving and maintaining the desired resource conditions and visitor experiences that are consistent with the purposes for which the area was established” (IVUMC, 2019, p. 33).

Using the IVUMC framework and processes, this project will be the first in the Canyons to comprehensively analyze and determine the current conditions and inform visitor use monitoring. Also different from previous studies, this project will evaluate the current temporal and spatial distributions of use, while generating the necessary inputs for transportation modeling, including pedestrian modeling. As described below, this information is necessary to ensure that infrastructure and management alterations in Big and Little Cottonwood Canyons are legally defensible, sensitive to constituent needs, and incorporate future visitor use projections while preserving desirable and high-quality conditions.

Please note that we intend for this prospectus to provide the foundation for in-depth conversation with relative stakeholders and the Central Wasatch Commission. Following these conversations, this prospectus will be revised into a formal proposal with a detailed budget, and specific timelines for negotiated deliverables. The current prospectus briefly outlines a) the background and rationale for the project, b) general research approach of Phase I, c) desired data, d) potential deliverables, and e) a proposed timeline.

**Background and Rationale**

*Interdependence between transportation and recreation*

As outlined in the Mountain Accord’s Existing Conditions and Future Trendlines Report, transportation, environmental conditions, recreation use, and the economy are intricately linked and interdependent (Mountain Accord, 2014). Specific to the work outlined in this prospectus, transportation and recreational visitor use within the Canyons are reciprocal. For example, the attributes of current transportation systems directly influence the quality of Canyon-based experiences, temporal and spatial distributions of use, air quality, pollution, access, and seasonal crowding. Consequently, without empirical research that incorporates both transportation and recreation, planning for and managing one domain may be misinformed and negate the goals of the other. This point appears well-supported by multiple CWM stakeholders and decision-makers who conclude,

“Currently, personal vehicles constitute the primary mode of access to recreation locations, severely stressing the transportation network on peak volume days and creating conflicts with other road users, such as road bikers. Increases in use will make access more difficult, even on days that experience average traffic volumes, and will potentially limit recreation participation in the future” (p. 12) and “…if actions are not taken to provide high quality recreation experiences for increasing numbers of users recreation experiences will begin to decline due to crowding, conflicts between user groups, environmental impacts, traffic and parking congestion, and degrading infrastructure” (Mountain Accord, 2014, pgs. 9, 12).

These reciprocal relationships are not new, however, are often neglected by planners and managers due to information deficits born from a lack of comprehensive studies that incorporate both transportation and recreational analyses (Manning et al., 2012). Therefore, this study proposes to evaluate and synthesize what is known relative to visitor use, what is monitored, and what data gaps currently exist.

Within Phase I, we will review all relevant studies and information which informs social, physical, and ecological elements of the canyons.

* **Social elements** are subjective and describes a threshold or range of conditions that are acceptable and desired, such as ’no more than 10 people within view at one time’ or ‘no more than 3 minutes waiting for a parking spot.’ When conditions remain within a social or experiential capacity, the quality of the recreation experience is maintained, provided the ecological system is also sustained. However, without understanding preferences for these conditions, managers do not have defensible information for limiting use or other management actions (Manning, 2009).
* **Physical elements** are more objective and is the threshold that existing infrastructure can accommodate specific levels of use, such as the number of parking spaces within the corridor or the number of sites in a campground (Elsworth, 2011).
* **Ecological elements** involves assessing the resilience and resistance of specific ecosystem elements, including endemic species, water and air quality, etc. related to recreational use.

Social, physical, and ecological elements must be considered and ultimately aggregated when evaluating current conditions and identifying visitor use objectives for ideal conditions. Recreational use and transportation are inextricably and intimately linked and the authors of the transportation and recreation sections in the Existing Conditions and Future Trendlines Report seem to agree, stating,

“Anticipated future trends including climate change, land use development (e.g., residential and ski resort expansion), and population growth will concentrate recreation users into smaller areas, increasing crowding and conflicts. Many of the high-quality areas for different recreation activities overlap, which increases conflicts between different user groups during high use days. As the use of these areas increases, user conflicts will intensify, diminishing the quality of future recreational experiences” and “in the Cottonwood Canyons, parking is at or near capacity on peak winter days (15-20 days per year). Parking is also a problem near recreation access points during peak summer periods.” (Mountain Accord, 2014, pgs. 2, 10).

Effective studies evaluating use in these Canyons must address these linkages in order to comprehensively analyze information relevant to visitor use, which our proposed study intends to accomplish.

**Analysis areas, management zones and available space.**

The interdependence between transportation, visitor use, and recreation quality is complicated because the relationships between all three differ between settings, forest zones, and recreational activity groups (Manning, 2009). Key decision-makers and stakeholders seem to agree and state,

*“The setting in which recreation occurs plays a critical role in the enjoyment of recreational activities. Each area within the Central Wasatch has a unique balance of different settings, which support these activities. Future land use development and increasing use in these areas can modify the setting and character, upsetting the delicate balance of recreation uses.”* (Mountain Accord, p.11).

In order to identify and implement visitor use strategies without interrupting this balance, it is important to consider that visitor use differs between management zones (e.g., wilderness areas vs. front country areas) and analysis areas (e.g., specific section of trail that receives high use) due to existing space, use and travel patterns, infrastructure, desired conditions, and setting considerations, which this research will address.

**Phase I: (Completed approximately 8 months from the start, i.e., October 1, 2020 – May 1, 2021)**

**Note:** We intend for this prospectus to provide the foundation for in-depth conversation with relative stakeholders and the Central Wasatch Commission to inform a specific methodology, # of focus group meetings, and data sources. Following these conversations, this prospectus will be revised into a formal proposal with a detailed budget, and specific timelines for negotiated deliverables. The current prospectus briefly outlines a concept to include: a) the background and rationale for the project, b) general research approach, c) desired data, d) potential deliverables, and e) a proposed timeline.

**Review Existing Direction and Knowledge: Gap Analysis of Current Recreation Research and Monitoring in the Uinta-Wasatch-Cache National Forest**

In order to uncover current knowledge concerning visitation within the Uinta-Wasatch-Cache National Forest, specifically as it applies to Big Cottonwood and Little Cottonwood Canyons, we will synthesize data that has been gathered between years 2000-2020. We will identify key results and findings and how they interact to inform visitor use management in the canyons. The research synthesis will not seek to support or refute any hypotheses, build theory, or evaluate the impacts of the evidence using meta-analytic techniques (i.e., effect size). Instead, we will identify subthemes based on the constructs and issues identified in seminal works (e.g., Manning 2011) and by senior researchers.

The results will be used to identify where we have solid data which can be utilized in a visitor use analysis approach and where there are data gaps. During this step, we will also review applicable policy, current monitoring efforts, and existing triggers for management action (i.e., infrastructure, environmental dashboard, water quality). This effort would culminate in a workshop designed to identify future research needs to move visitor use management forward in the canyons.

Specifically, within the gap analysis we will:

1. Review Big and Little Cottonwood Canyon applicable management legislation (USFS ROS Management Direction, wilderness areas), agency policies, and any other management direction for the Canyons (i.e., water quality, etc.);
2. Assess and summarize existing information and current conditions as they relate to social, ecological, and physical thresholds, including but not limited to: visitor use studies, monitoring results, academic theses and dissertations, reports by consultants, transportation data, water quality data, and wildlife monitoring data, etc.;
3. Assess and summarize existing information and current conditions (using focus groups), as they relate to sociodemographic and geographic trends and variations of existing user groups, with particular attention given to racial, ethnic, and socioeconomic analyses of current use of the Canyons; and,
4. Develop an assessment and stakeholder-informed project plan for missing data needs.

Post understanding current information, data needs for addressing visitor use components will be outlined and next steps for obtaining additional data needs will be proposed. Briefly, should significant data gaps exist, we would propose a data collection plan for 2021-22, covering four seasons (see Phase II).

**Phase I – Deliverables and Cost**

**Phase I** of the visitor use management study proposes several deliverables, 1) a detailed report, including sections for an executive summary, results tied to visitor use information available and any data gaps, with proposed resolutions for securing those gaps, and detailed recommendations for next steps.

**Personnel:** 1-2 full-time graduate student for 1 year, 2 faculty for oversight and direction, and CWC staff to assist in securing available studies and information.

**Timeline:** 8 months

**Estimated Cost:** $35-$50k (depends on the # of focus groups, outreach) inclusive of Phase I report, workshop organization, and all deliverables.

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