

# 2020 UDOT RESEARCH PROBLEM STATEMENT

**Problem Statement deadline is March 16, 2020. Submit statements to [UTRAC@utah.gov](mailto:UTRAC@utah.gov)**

*All submitted problem statements become the property of UDOT and authors are not guaranteed a contract for related work.*

**Title:** Active transportation facilities in canal corridors

**No. (Office Use):** 20.05.05

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Select **ONE** Subject Group  Materials/Pavements  Maintenance  Traffic Mgmt/Safety  Structures/Geotech  
 Planning  Aeronautics  Public Transportation  Other

## 1. Write a brief research project objective:

The objective of this research project is to document the potential benefits, tradeoffs, options, and case studies associated with accommodating active transportation facilities in canal corridors.

## 2. Explain the problem and why this research is important: (*Importance reflects 50% of the statement score*)

Active transportation facilities such as trails can provide economic and public health benefits to the communities through which they are located. Developing networks of off-street trails can encourage people of all ages and abilities to walk, bike, roll, and ride, whether for recreation or transportation purposes, both within and between communities. Yet, in built-up or developing areas, finding sufficient connected right-of-way for trails can be challenging and expensive. Canals offer potential opportunities for siting trails as they are existing linear transportation resources, have minimal grades, and often connect communities and towns. One recent example of a canal trail is the Murdock Canal Trail in Utah County.

There are many options for accommodating active transportation facilities in canal corridors, and various potential benefits and tradeoffs for canal companies to consider. In the case of enclosing the canal in a buried conduit, potential benefits include: reductions in seepage, better monitoring of flow rates, downstream management, hazard mitigation (flooding/canal breach), water quality (no runoff mixing). Yet there may be concerns related to urban water management, monitoring of conveyance structures, water rights of seepage water, liability, etc. There is a research need to document the potential benefits and tradeoffs of various options for trails along canals, as well as example case studies.

## 3. Describe how the research results will be implemented and benefit Utah: (*Implementation reflects 50% of the statement score*)

Many active transportation plans in Utah (e.g., Cache County Trails & Active Transportation Plan) propose paved or unpaved trails along canal corridors. This research will help to identify appropriate cases and where accommodating active transportation facilities in canal corridors could be beneficial to all parties involved, and it will provide UDOT with relevant considerations to help advise and communicate with canal companies about the development of trails.

## 4. List the major research tasks:

1. Search, review, and summarize examples of active transportation facilities along canal corridors. Prepare case studies. These could be from Utah, nearby states, or even other countries (e.g., The Netherlands). Examples may include: Murdock Canal Trail (Utah County), Highline Trail (Cache County).
2. Develop and conduct interviews/surveys with select canal company employees and other relevant parties and stakeholders. Questions may cover topics like: benefits and costs of enclosing canals, monitoring or management efficiencies, liability and access issues, concerns about providing and managing public access, etc.
3. Categorize and detail transportation considerations, including: types of facilities that might be appropriate for trails (e.g., long, flat, few crossings, within or connecting urban areas), facility types and uses (e.g., paved vs. unpaved, equestrians), recreation, aesthetics, etc.
4. Categorize and detail canal considerations, including: flow monitoring, flow management solutions, downstream delivery control, water conservation, hazard mitigation, water quality, water rights, trash, access, maintenance, liability, privacy, etc.
5. Identify funding opportunities (including state and federal transportation and water grants and funding sources) and prepare rough cost estimates of different transportation and canal options, benefits, etc.
6. Prepare final report.

**5. List the expected research deliverables (reports, manual, specification, design method, training, video, etc.):**

The primary deliverable would be a final written report, containing the following:

- Transportation considerations: Details about the types of conditions and locations of canal corridors where active transportation facilities might be most effectively located.
- Canal considerations: Details about topics for canal companies to consider, including potential benefits and tradeoffs.
- Case studies: Summarize case studies, including: context, agreements, funding, observed transportation benefits, observed benefits for canal company, contact information for parties to follow up with more questions.
- Results from interviews/surveys: Summarize interviews/surveys with canal companies and stakeholders, anonymously as desired. Findings may include: perceived benefits to canal companies of enclosure or improvements; perceived barriers or implementation challenges, etc.
- Cost estimates and funding opportunities: Rough cost estimates or ranges of estimated costs for different canal solutions (e.g., pipe, box culvert), active transportation facilities (e.g., paved, crossings), and potential benefits to canal companies (e.g., water conservation, water management, maintenance).

**6. Requested from UDOT: \$46,000**  
**Briefly explain funding sources:**

**Other/Matching Funds: \$0**

**Total Cost: \$46,000**

**7. Outline the proposed schedule, including start and major event dates:**

13 months.

August 2020: Kick-off meeting.

Fall 2020: Review case studies. Prepare for interviews/surveys (develop questions). Categorize transportation and canal considerations. Identify funding sources and preliminary cost estimates.

Spring 2021: Conduct interviews/surveys. Detail transportation and canal considerations. Refine cost estimates.

Summer 2021: Prepare draft report. Receive feedback on draft report. Revise draft report.

August 2021: Submit final report.