

# 2016 UDOT RESEARCH PROBLEM STATEMENT

\*\*\* Problem statement deadline is March 14, 2016. Submit statements to Tom Hales at [tahales@utah.gov](mailto:tahales@utah.gov). \*\*\*

**Title:** Analysis of Bicycle Infrastructure in Utah

**No. (office use):** 16.05.01

**Submitted By:** Grant G. Schultz and Shaunna Burbidge

**Organization:** Brigham Young University and Active Planning

**Email:** gschultz@byu.edu, burbidge@walkbikeplan.com

**Phone:** 801-422-6332, 801-336-7991

**UDOT Champion (suggested):** Jeff Harris/Angelo Papastamos

**Select One Subject Area**

Materials/Pavements

Maintenance

Traffic Mgmt/Safety

Preconstruction

Planning

Public Transportation

## 1. Describe the problem to be addressed.

Bicycling as an alternate mode of transportation has been on the rise. It is environmentally friendly in nature and the associated health benefits have made it a popular choice for many types of trips. In response to the increased use of active transportation across the state, a research team comprised of Brigham Young University (BYU) and Active Planning researchers recently completed a research project for the Utah Department of Transportation (UDOT) titled "Impact of Bicycle Corridors on Travel Demand in Utah" (Schultz et al. 2016). The purpose of this research project was to increase understanding of the impacts of implementing bicycle infrastructure within the State Route system on bicycle rate as a function of roadway characteristics. The research evaluated the impact of the UDOT "Inclusion of Active Transportation" policy within the state, estimated the impact of bicycle corridors on bicycle rate as a function of roadway characteristics (e.g., speed limit, functional classification, AADT), evaluated the impact of bicycle corridors in combination with vehicle lanes, and provided limited guidelines to be used when evaluating locations for possible bicycle corridors or bikeways. One of the limitations of the research that was completed was a lack of data on bicycle corridors throughout the state. In order to complete the previous research, data were collected at 42 sites across the state to identify relationships between bicycle data and roadway characteristics. Although this sample was sufficient for the research conducted, the cross section of different bicycle infrastructure classifications according to American Association of State Highway and Transportation Officials (AASHTO) infrastructure categories was not complete. As a result, the results of the analysis were not able to be separated into different vehicle infrastructure types.

The purpose of this research is analyze a more complete cross section of bicycle infrastructure types across the state and to compare the different bicycle infrastructure types to provide input on which types of infrastructure should be placed on specific roadway types to provide the most efficient use of the infrastructure and roadway network. This will require the collection of bicycle data statewide for a wide cross section of infrastructure types utilizing the bicycle data collection guidebook currently being developed by Active Planning for UDOT.

References:

Schultz, G. G., C. K. Haskell, D. R. Bassett, and S. K. Burbidge. (2016). "Impact of Bicycle Corridors on Travel Demand in Utah." Report UT-16.01. Utah Department of Transportation Research Division, Salt Lake City, UT.

## 2. Explain why this research is important.

UDOT has taken a very active role in identifying the impacts of bicycle infrastructure across the state. It has been assumed and shown that incorporating bicycle infrastructure has a positive impact on the state. However, as more and more data are collected, there continues to be a lack of data on the specific impacts of different bicycle infrastructure installation across the state. This research will help to fill this gap in knowledge by providing more detailed information and baseline data on different bicycle infrastructure types. UDOT will benefit from this research by gaining further understanding of the benefits of different types of bicycle infrastructure across the state. The results of the research will help to identify limited recommendations on bicycle infrastructure installation on state roadways.

## 3. List the research objective(s):

1. Evaluate the impact of bicycle infrastructure types across the state.
2. Develop limited recommendations for bicycle infrastructure implementation and installation on specific roadway types.

**4. List the major tasks:**

1. Develop a project scope of work and detailed cost estimate.
2. Conduct kickoff meeting.
3. Perform literature review on bicycle infrastructure and implementation from a national perspective, including correlation between bicycle infrastructure and roadway classification.
4. Conduct an inventory of bicycle infrastructure statewide (incorporating previously completed research by Active Planning, BYU, and others).
5. Collect data on a cross-section of bicycle corridors including as many types of bicycle infrastructure as feasible and combine this data with data collected as part of the Report UT-16.01 study.
6. Provide limited recommendations on bicycle infrastructure compared to roadway classification.
7. Report results to UDOT in the form of a written report.

**5. List the expected results:**

1. Engineering report documenting the literature review and research results.
2. Understanding of bicycle infrastructure implementation compared to vehicle classification across the nation.
3. Increase the database of existing bicycle volume data across the state.
4. Limited recommendations on bicycle infrastructure implementation.

**6. Describe how this research will be implemented.**

This research will be implemented by the UDOT Planning Division to assist in future decision making related to active planning across the state.

**7. Requested from UDOT: \$60,000  
(or UTA for Public Transportation)**

**Other/Matching Funds: \$**

**Total Cost: \$60,000**

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

It is recommended that this project begin late summer/early Fall 2016 with the project scope of work and detailed cost estimate, followed with the literature review. The work will continue with the remaining tasks as outlined. The results of the research will then be reported to UDOT in the form of a written report. The research is anticipated to take 12-16 months.