

2016 UDOT RESEARCH PROBLEM STATEMENT

*** Problem statement deadline is March 14, 2016. Submit statements to Tom Hales at tahales@utah.gov. ***

Title: Trip and Parking Generation by TODs Phase II

No. (office use): 16.05.02

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UDOT Champion (suggested): Jeff Harris

Select One Subject Area

Materials/Pavements

Maintenance

Traffic Mgmt/Safety

Preconstruction

Planning

1. Describe the problem to be addressed.

The decision on how best to allocate land around transit stations is a debated topic, with transit officials often opting for park-and-ride lots over active uses such as multifamily housing, office, and retail organized into transit-oriented developments (TODs). Providing large park-and-ride lots has been the default strategy to maximize transit ridership in the short-run. But is it the best strategy in the long run? The debate continues when the station area is developed, with officials usually assuming that TODs require the same number of parking spaces as conventional developments and that transit stations require the same number of park-and-ride spaces as non-TOD stations, even if much of the travel demand is captured internally and much of the transit demand is generated by TODs themselves. One-to-one parking replacement policies are common when surface parking is replaced by TODs and structured parking. Balancing the amount of parking at TODs with the need to create a pedestrian-friendly environment and encourage mixed-use development can be complicated.

2. Explain why this research is important.

An over-abundance of parking at TOD stations can result in an environment that is not pedestrian-friendly or safe for pedestrians or bicyclists, and one that is expensive for residents and businesses due to the high cost of structured parking. By quantifying parking demand at TOD stations, we can determine best practices for all transit users based on how they arrive at the station.

This study will increase the understanding of transit ridership as well as how transit riders arrive at TOD stations. This will provide insight into parking demand and policies that may be used to discourage parking while encouraging bicycle and pedestrian access. In Phase 1 of this study, already funded and completed, we measured trip and parking generation at six TOD sites across the country using a methodology that is the most robust published to date (and to our knowledge, only the third study of its kind). The six are Redmond TOD in Seattle, Englewood in Denver, Rhode Island Row in Washington D.C., Wilshire-Vermont in Los Angeles, Fruitvale Village in San Francisco, and Ashmont in Boston. We found, for example, that the Redmond TOD in the Seattle region generates about one-third as many vehicle trips as predicted by the Institute of Transportation Engineers' Trip Generation manual, and about one-half the peak parking demand predicted by ITE's Parking Generation manual. Also, we found that there is a real opportunity for sharing parking spaces among these different uses, something which is not realized at present.

The Phase 1 TODs are relatively small, and have low rates of internal capture. In Phase 2, the phase for which funding is requested, we will study trip and parking generation at two larger TODs, City Creek in Salt Lake City and Orenco Station in Portland. These larger TODs are expected to have much higher rates of internal capture, and hence lower rates of trip and parking generation.

3. List the research objective(s):

1. Measure trip and parking generation at TODs and test whether TODs generate as many vehicle trips as Institute of Transportation Engineer's (ITE's) Trip Generation manual estimates and need as much parking as the ITE Parking Generation manual suggests.
2. Understand the barriers in polices and regulations and establish best practices for promoting TODs in practice.

4. List the major tasks:

1. Collect quantitative data at two additional TODs: City Creek in Salt Lake City and Orenco Station in Portland.
2. Collect qualitative data (documents and interviews) from transit agencies, metropolitan planning organizations (MPOs) and other key stakeholders about the policies and requirements for the parking and development around transit stations.
3. Analyze data and compare to ITE's trip and parking generation guidelines. Generate new methodology for assessing trip and

parking generation at TODs by quantitative analysis.

- 4. Understand the barriers of promoting TOD in practice by qualitative analysis.
- 5. Write report and peer-reviewed articles.

5. List the expected results:

- 1. Initial data analysis has already shown very different generation rates than those suggested by ITE’s Trip Generation Manual and Parking Generation Manual.
- 2. The addition of new and larger TODs will improve the generalizability of the study. We expect the above rates to change, but the direction of relationships will likely persist.
- 3. The interviews and documents analysis of policies and requirements will help us understand the barriers of promoting TODs in practice.

6. Describe how this research will be implemented.

The results of this study will be useful to planning practitioners. As the Wasatch Front continues to grow in population and experiences development pressure and increasingly scarce available greenfield land, compact infill development is likely to become commonplace. With such development pressures, it is also likely that the price of real estate will correspondingly rise. As such a paradigm arises, the cost to developers of parking will become even more burdensome. It is essential that an updated comprehensive understanding of trip and parking generation by this new style of development is developed and disseminated to planning practitioners and state agencies. New models will be created that can be incorporated into the Wasatch Front Regional Council and the Mountainland Association of Governments’ travel demand model. Additionally, this model will be essential for planning and development efforts undertaken by the Utah Transit Authority and their development partners as they continue to promote and build TODs.

7. Requested from UDOT: \$36,000 Cost: \$66,000	Other/Matching Funds: \$30,000	Total
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8. Outline the proposed schedule, including start and major event dates.

- Project Start Date: August 1, 2016
- Qualitative Data Collection: August-December, 2016
- Quantitative Data Collection: September-December, 2016
- Data Analysis: January-March, 2017
- Report Writing: April-June, 2017
- Project End Date: June 31, 2017