Predicting Travel Impacts of New Development in America's Major Cities: Testing alternative trip generation models

**URBAN TRIP GENERATION IS NOT WELL UNDERSTOOD**

There is a widespread belief that the available tools for estimating travel impacts of urban development are not as strong as they could be. Implications include:
- cities may be hindered in developing appropriate travel impact mitigations
- cities lack good information to communicate to existing residents regarding potential travel impacts of proposed development
- cities, with better tools, would be able to make stronger policy based on more reliable understandings of development impacts.

Most cities rely on a variety of data sources to estimate impacts of new development on their transportation systems, including:
- Institute of Transportation Engineers’ (ITE) trip generation rates
- Census data
- local ridership/travel behavior surveys

**COMPARATIVE RESULTS**

![Summary of Results](image)

**SUMMARY**

For many years there have been several models and methods for predicting the number of trips generated by new developments. This paper compares the estimated trip generation outputs of several models to field counts and surveys conducted for the District Department of Transportation (DDOT) at 16 locations in Washington, DC.

Our findings support the widely held belief that existing tools are not well suited to trip generation estimation in urban contexts. The paper is part of a larger study effort that seeks to develop a robust urban trip generation dataset that will be a foundation in the creation of better models.

**MODE SHARE DATA COLLECTION AND RESULTS**

Data were collected during winter and spring; data collection occurred as a survey people entering and exiting the sampled buildings during peak morning and evening hours of 7:00 to 9:00 and 4:00 to 6:00, respectively.

**SITE LOCATIONS**

- Find site locations
- Site locations with Existing Bldg
- Site locations with New Bldg
- Site locations with Both Bldgs

**INTERCEPT SURVEY TO DETERMINE SAMPLE MODE SHARE**

- Total number of people entering a building
- Total trips by mode

**URBENS**

- URBENS is a computerized program that can predict a wide range of travel outcomes for any proposed development.

**SGTG**

- SGTG is a computerized program that can predict a wide range of travel outcomes for any proposed development.

**PSU**

- PSU is a computerized program that can predict a wide range of travel outcomes for any proposed development.

**TRIP GENERATION ESTIMATION TOOLS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
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<tr>
<td>ITE</td>
<td>Institute of Transportation Engineers' (ITE) trip generation rates</td>
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<td>SGTG</td>
<td>Square Footage of Multiple Uses</td>
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<td>Parking and Non-Auto Modes</td>
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<td>EPA-MXD</td>
<td>Environmental Protection Agency-Mixed Use Development (EPA-MXD)</td>
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**BUILT ENVIRONMENT IMPACTS ON TRIP GENERATION**

- Literature Review
- Density
- Land Use Mix
- Parking
- Non-Auto Modes
- Bicycling Quality

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