EVALUATION OF BUS-BICYCLE AND BUS-RIGHT TURN TRAFFIC DELAYS AND CONFLICTS

BACKGROUND
Portland has major policy in place to increase cycling and transit mode-shares.

LITERATURE
AUS, 2006: Over half bus-bicycle accidents occur at intersections.
UK, 2001: Most common bus-bicycle collision is bus-overtaking-bicycle.
US: Lack of research on bus-bicycle conflicts and/or interactions.

STUDY SITE
Westbound Traffic: Southeast Madison at Grand

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RESEARCH GOAL
Quantify bus-bicycle conflicts and check for causes of bus delay.

METHODOLOGY

VIDEO ANALYSIS: Record bicycle activity, bus activity, and right-turn vehicle activity. Data collections took place during the June, August, and September.

CATEGORIZATION: 72 possible combinations to describe bicycle and bus-right turn lane activity.

TRAVEL TIME ANALYSIS: Calculate the time a bus spends traveling through the study site.

RESULTS
The histograms show the variability of traffic scenarios for 219 bus events. Variability is greater during peak traffic hours, but there are also highly complex scenarios during off-peak hours.

Using Poisson arrival theory, we can model changes in probability of bus-bicycle conflict.

The regression analysis checked for relationships between the independent variables and the amount of time it took a bus to travel through the study site.

CONCLUSION
The quantification of bus-bicycle conflicts and bicycle-caused bus delay supports the need for future street designs/improvements to minimize bus and bicycle interaction.