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

BACKGROUND
25% cycle mode-share
25% transit mode-share
6.3% cycle mode-share
13.3% transit mode-share
AUS, 2006
UK, 2001
US

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

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 ARIVAL THEORY, WE CAN MODEL CHANGES IN PROBABILITY OF BUS-BICYCLE CONFLICT.

USING OUR COUNT DATA AND THE METHODS USED TO CALCULATE AADT, THE STUDY SITE IS ESTIMATED TO INCUR 11,000 BUS-BICYCLE CONFLICTS ANNUALLY.

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.