

Update on Current Research Projects & Potential for Implementation



2015 Transportation Engineering Conference

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“If we knew what we were doing, it wouldn't be called research.”

This quote attributed to Einstein. However, “There is no evidence that Einstein ever said anything of the sort, and yet thousands of sites, including some academic books and articles, use the quote, with attribution to Einstein.”

scatterplot 2014 “everything you wanted to know about bad citation practices”

<https://scatter.wordpress.com/2014/07/31/everything-you-wanted-to-know-about-bad-citation-practices/>

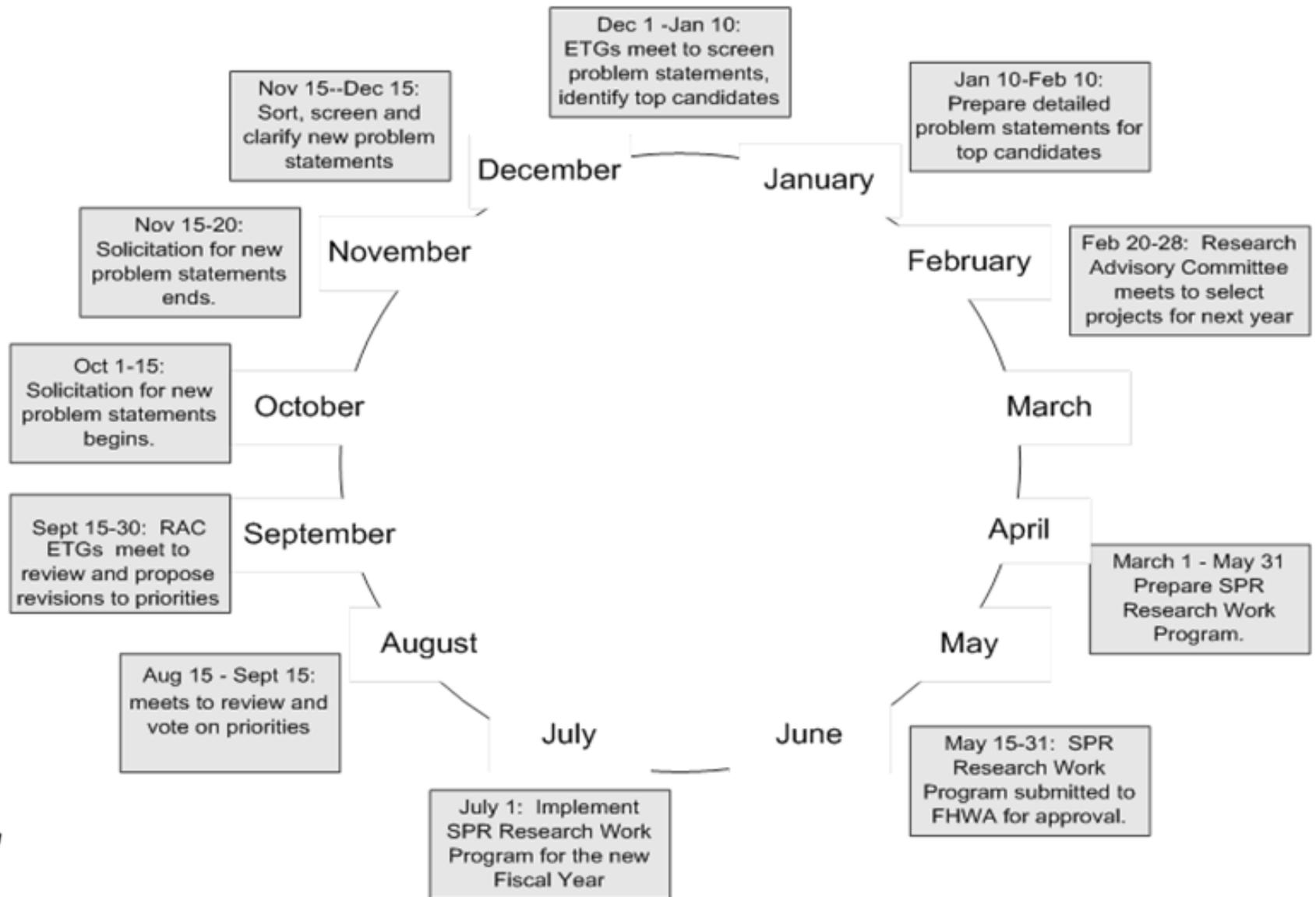


About ODOT Research Section

- Oversees ODOT's federally funded research, development and technology transfer program.
- ODOT Research focuses on what is "applied research"
- We try to develop new knowledge that can be applied to a specific practical application.
- Services:
 - Research Program
 - Technology Transfer (T2)
 - Library Services

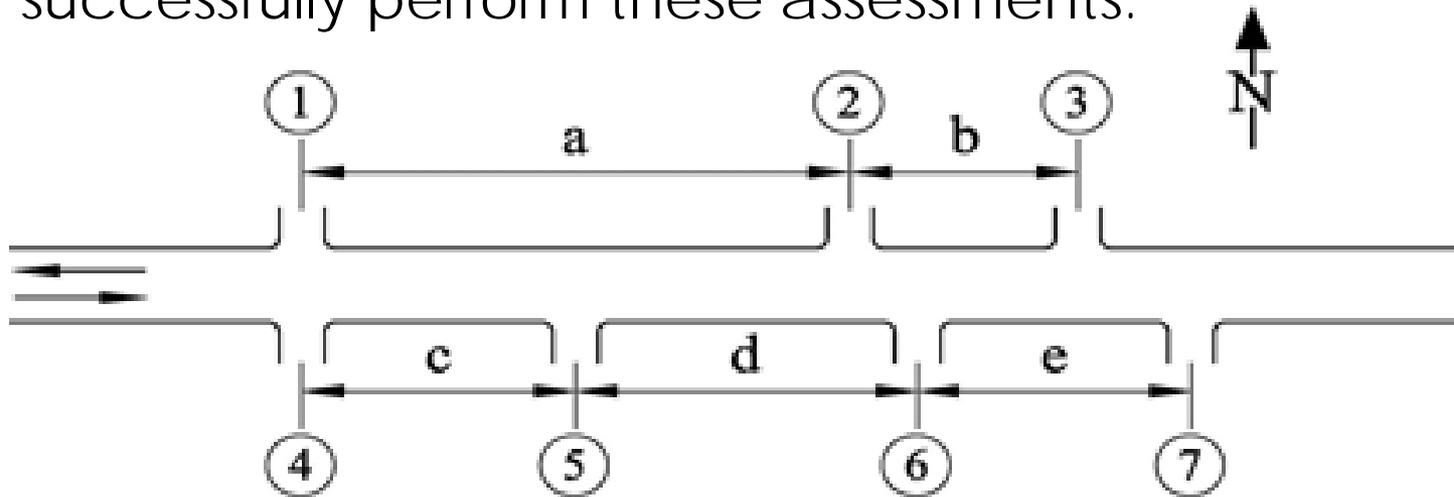


ODOT Research Project Selection Timetable



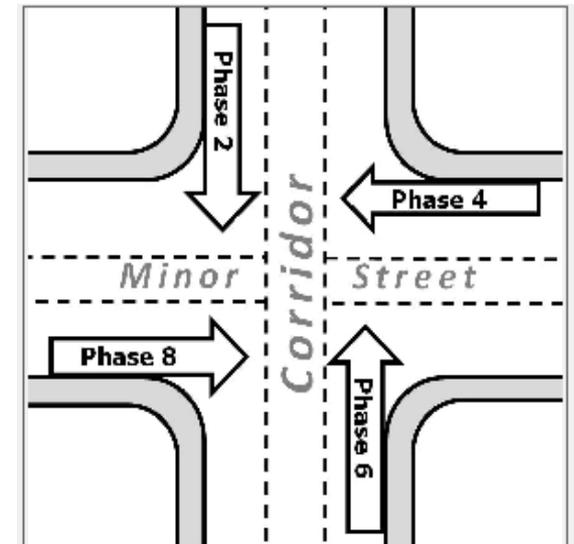
Developing an Oregon Access Management Best Practices Manual

- Quantifies the safety and operational effects of various access management strategies,
- Provides measurable criteria to evaluate these access management techniques, and
- Identifies data collection practices necessary to successfully perform these assessments.

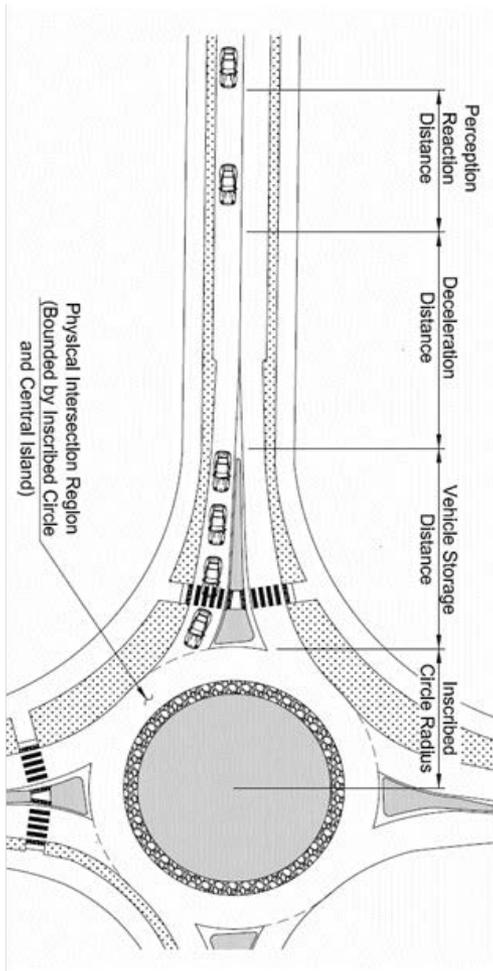


Selection and Application of Advanced Traffic Signals

- The research examines the factors involved in determining conditions where specific advanced traffic signal features and adaptive signal control systems can best be implemented.
- The study produced a Microsoft Excel based evaluation tool to assist in evaluating optimum features for specific intersections, and a cost-benefit calculation framework to examine return on investment.



Safety Performance Measures for Roundabout Applications in Oregon



- Developed statistical models to predict the impact of roundabout design variables on the number and severity of crashes.
- Compared the model results to similar models of 4-way stop intersections.
- Examined the transferability of the Oregon models to roundabouts in Washington state.



Operational Guidance for Bicycle-Specific Traffic Signals

- The study reviewed engineering guidelines for design of bicycle-specific traffic signals and collected physical performance data for cyclists at signalized intersections in Oregon
- Performance data was markedly different than accepted national figures used in signal timing
- With this data, signal timing for bicycle signals and mixed-use signals can be improved



Design & Implementation of Pedestrian and Bicycle-Specific Data Collection Methods in Oregon

The objective was to provide guidance for developing a statewide data collection system for bike/ped data

- A review of existing bicycle and pedestrian data collection programs in Europe and North America
- A summary existing of bike/ped data collection equipment
- A description of ongoing bike/ped data collection efforts in Oregon
- A review of factoring methods review and data analysis using bike/ped data
- A pilot study at the intersection of Hall & 99W in Tigard.



Contact: ODOT Research Section

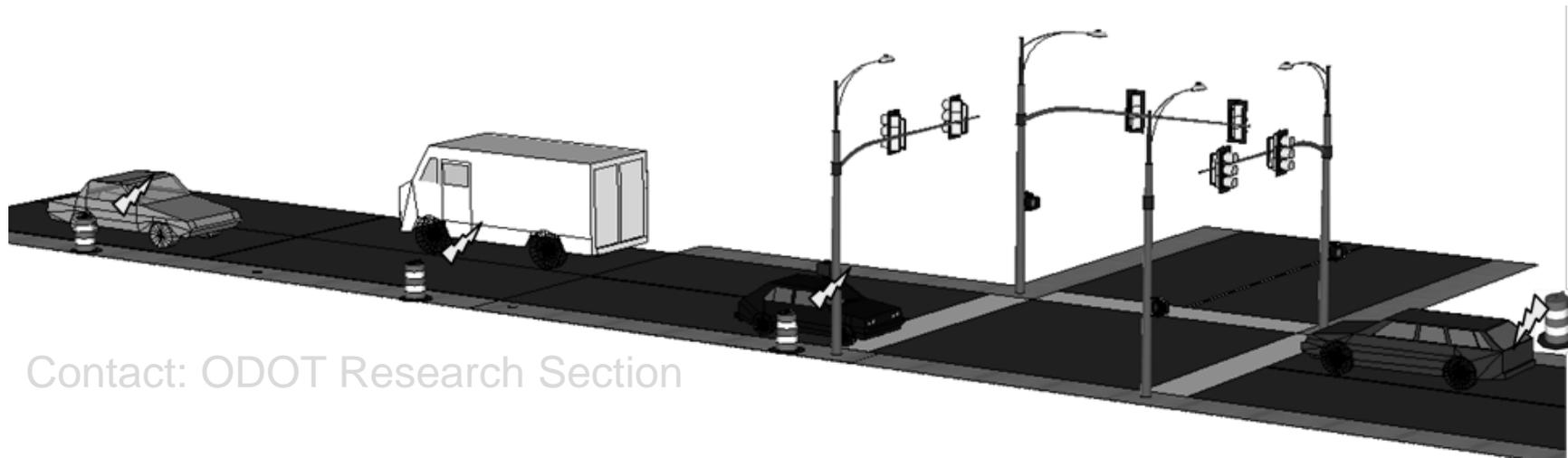
Improved Safety Performance Functions for Signalized Intersections (Publication expected: May 2015)

- Updates predictive models for crashes at intersections based on:
 - intersection characteristics;
 - crash history at each location; and
 - approach speed.
- The study finds that while approach speed is not a predictor of crash numbers, it is a significant predictor of crash severity.



Bluetooth Data Collection System for Planning and Arterial Management

- This project developed an inexpensive portable wireless roadside data collection system
- The data collection units are used for short term data collection (normally a week or less).
- Applications include data collection for travel time estimation, origin-destination study, and intersection performance estimation



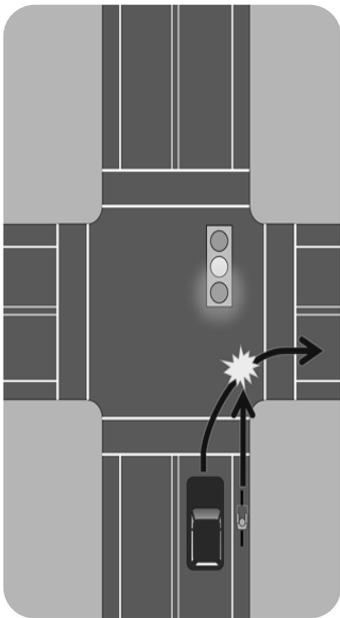
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Toward Effective Design Treatments for Right-Turns at Intersections with Bicycle Traffic

(Publication expected: August 2015)

This research results in recommended practices for intersection designs that involve right-turning vehicles and through moving cyclists.



- The research quantified the safety alternative traffic control strategies to reduce right-turning vehicle-bicycle crashes.
- Conducting driving simulation tests using OSU's driving simulator tests.
- Analyze the simulator data to evaluate driver and bicyclist response to each of the tested intersection scenarios.
- Analyze the field data to validate the simulator outcomes.



Implementation

- Research needs better ways to get the word out.
- As we finish a report we evaluate research findings for applicability to ODOT practice.
- In conjunction with potential users and the Technical Advisory Committee, the Research Section will prepare an implementation plan to ensure effective and timely application of the research results throughout ODOT.
- Implementation of research findings is normally done by the end user ... ***we need to hear from our customers regarding what works for you***



Feedback



Thank you