

Signal Timing Manual

*Baltimore-Washington Regional Traffic Signal
Forum*

May 25, 2011



KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

Outline

- › Project Overview
- › TSTM v1.0 Recap
- › Updates to the TSTM
- › Opportunities to Get Involved
- › Summary



Project Overview

- › NCHRP 3-103 – Update of the Signal Timing Manual

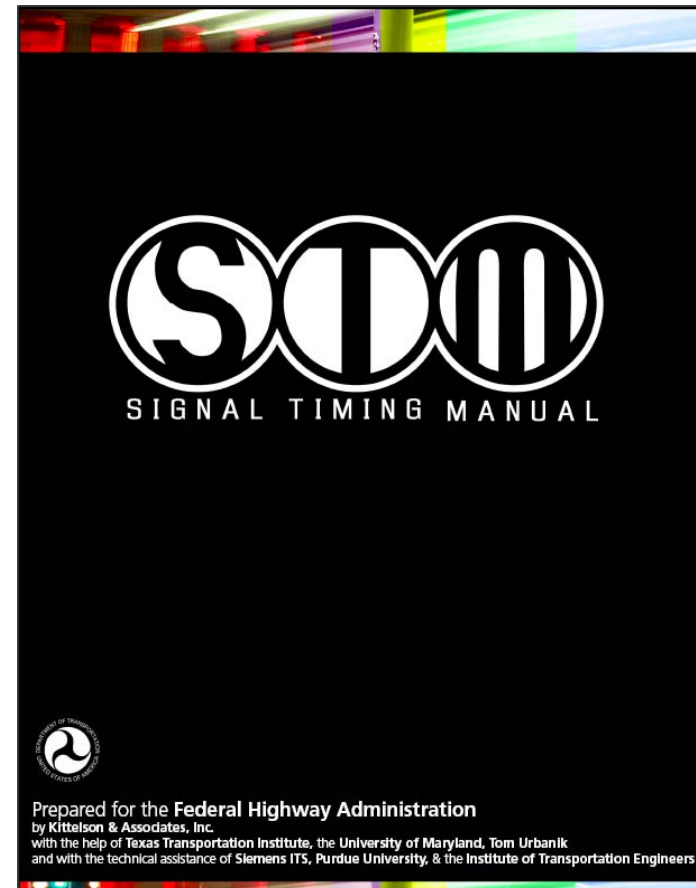
- › Project Team –
 - *Principal Investigator* –
 - Tom Urbanik, PE, PhD – Kittelson & Associates, Inc.
 - *Purdue University, Kimley-Horn & Associates, Texas Transportation Institute*

- › Panel Members –
 - *Panel Chair* –
 - Peter Koonce, PE – City of Portland
 - *Woody Hood, Eddie Curtis, Jim Sturdevant, Susan Langdon, Rick Denney, Paul Olson, Mark Luszcz, Bill Shao, Alek Stevanovic*



Traffic Signal Timing Manual (TSTM) Version 1.0

- › Completed in 2008
- › Funded by FHWA
- › Available on www.signaltiming.com
- › First traffic signal timing focused reference document
- › Used in academia, public agencies, consultants
- › *Disclaimer: It is not comprehensive, nor was it intended to be.*



TSTM Version 1.0 – Approach

- › Identify existing materials
- › Review state of practice
- › Provide an outline for the materials
- › Review ongoing and future efforts with FHWA
- › Compile best practices from workshops
- › Identify research problem statements to direct future efforts
- › Utilize peer review panel



TSTM Version 1.0 – Chapter Titles

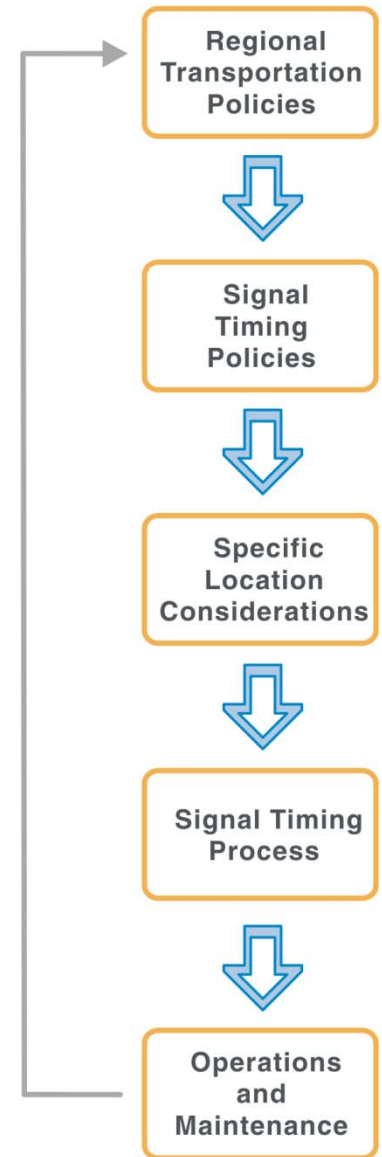
1. Introduction
2. Policy and Funding
3. Operations
4. Design
5. Isolated Signal Timing
6. Coordination
7. Timing Plan Development
8. Maintenance
9. Advanced Topics



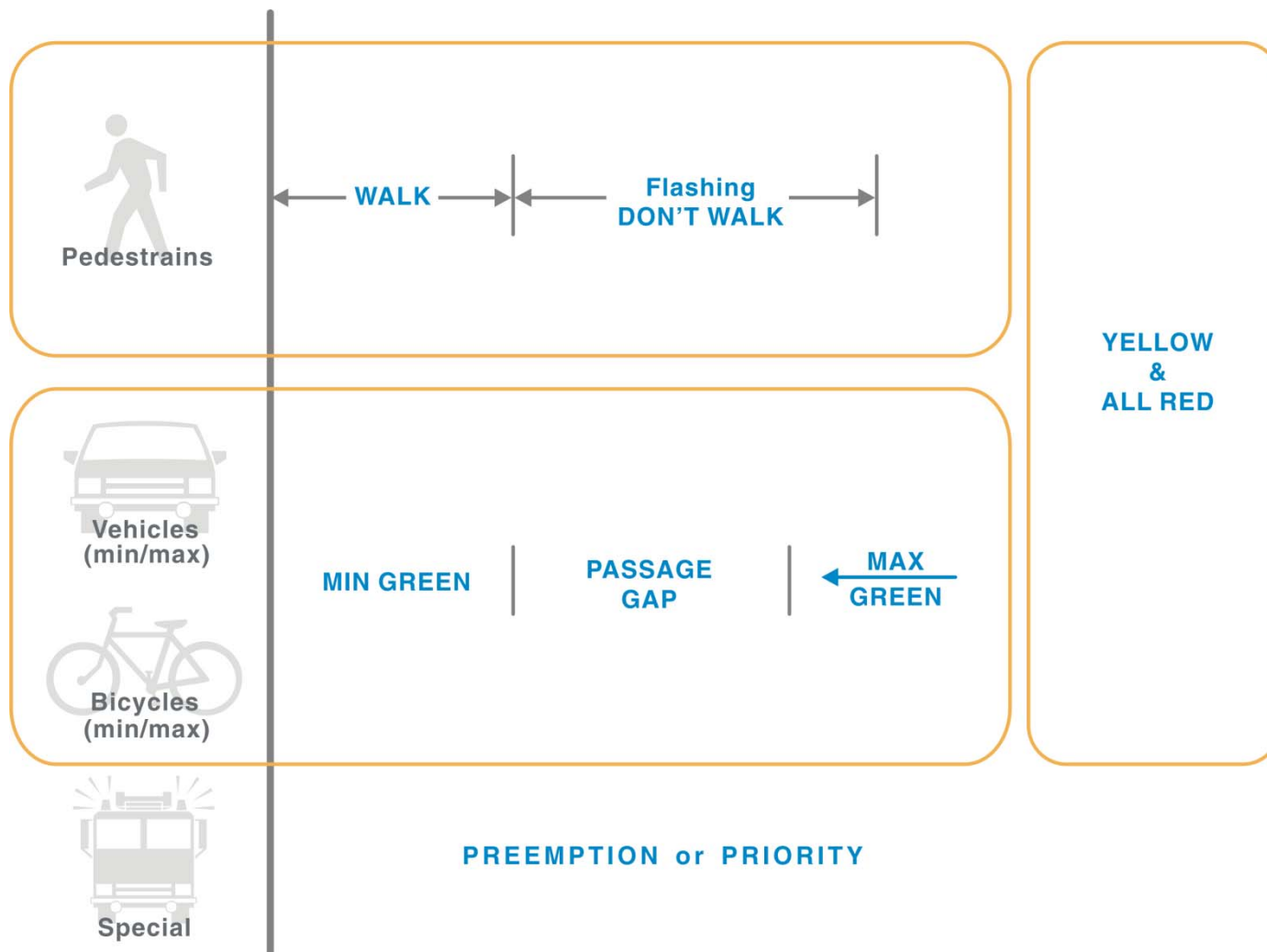
TSTM Version 1.0

› Chapter 2 – Policy

- *Regional Transportation Policies should guide our objectives for traffic signal timing*
- *Specific locations may have different needs*
- *A Signal Timing Process identifies steps and articulates a plan for achieving objectives*



TSTM Version 1.0



TSTM Version 1.0

- › Synthesis of available documents and “general” practice
- › Connection between policy, design, operations, and maintenance
- › Nine chapters plus glossary
 - *265 pages*
 - 1950 HCM – 147 pages
 - 2010 HCM – 4 volumes + online resource + TCQSM
 - *Disclaimer:*
 - *Version 1.0 is not comprehensive, nor was it intended to be.*
- › Known opportunities to expand chapters and technical areas



Updates to the TSTM

- › Recently completed and published research/projects
 - *2009 MUTCD*
 - *2010 HCM*
 - *NCHRP*
 - 3-90 – Operation of Traffic Signal Systems in Oversaturated Conditions
 - 3-66 – Traffic Signal State Transition Logic Using Enhanced Sensor Information
 - 3-79A – Arterial Performance Measures
 - Synthesis 403 – Adaptive Traffic Control Systems: State of Practice
 - *FHWA*
 - Regional Traffic Signal Operation Programs
 - Improving Traffic Signal Management and Operations
 - Signal Timing Under Saturated Conditions



Updates to the TSTM

› Focus Groups

- *Five planned through 2011 summer*
- *Goals*
 - Critique of Version 1.0
 - Input on the intended audience and how it will be used
 - Input on material
 - Identify critical issues that affect traffic signal performance
 - Identify agency timing policies, objectives, performance measures and strategies for achieving the objectives

› Research Plan

- *Revise and expand chapters*
- *New chapters*
 - Performance Measures
 - Context Sensitive Timing
 - Adaptive Control
 - Traffic Signal Preemption / Priority / Responsive Systems



Project Schedule

- › Summer 2011
 - *Focus Groups*
 - *Refine Work/Research Plan*
- › Fall/Winter 2011
 - *Summary of focus groups (White Paper)*
 - *Research Plan*
 - *Interim Report*
- › 2012
 - *Execute Research Plan*
 - Annotated outline
 - Conduct research
 - Develop draft chapters
 - Final chapters
 - Ancillary products
 - Website, training materials, presentations, additional reference materials
- › 2013
 - *Final documents and products*



Opportunities to Get Involved

- › NTOC Traffic Signal Library
- › www.signaltiming.com
 - *Soon to be updated*
 - *Surveys, forums, etc.*
- › TRB Signal Systems Committee
 - *Signal Timing subcommittee*



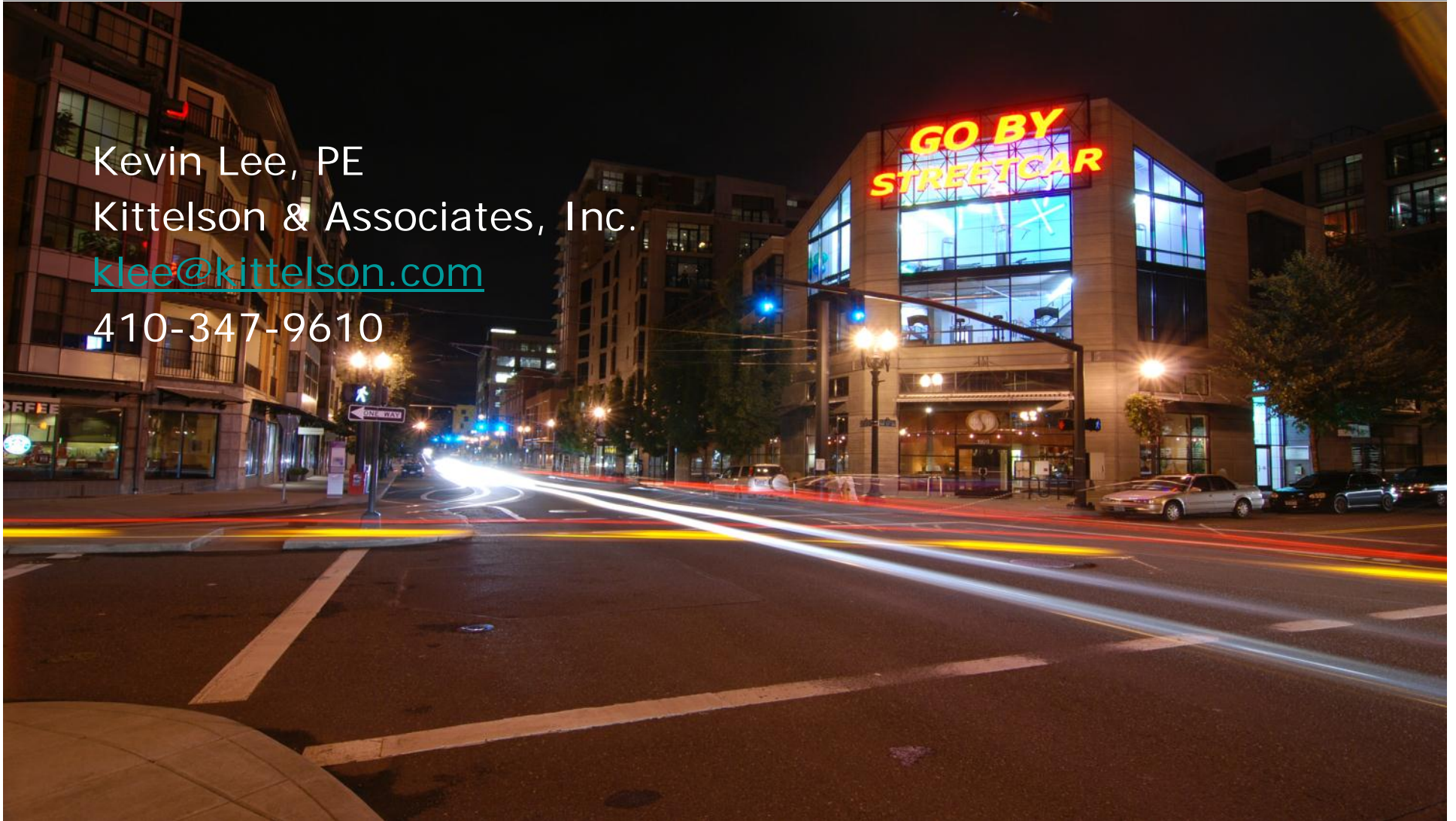
Summary

- › Project underway
- › Version 2.0 expected in 2013
- › Incorporates recent research and publications
- › Expanded topics and chapters
- › Opportunities to provide feedback and comments



Questions

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