WisTMP 2.0
Recent Data Improvements to the Wisconsin Transportation Management Plan

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FHWA Final Rule

- FHWA Final Rule on Work Zone Safety and Mobility
  - Requires all states to develop a Transportation Management Plan (TMP) process.

- What is a TMP?
  - According to the Rule, “a TMP lays out a set of coordinated transportation management strategies and describes how they will be used to manage work zone impacts of a road project”.

Wisconsin initially developed a “paper” form to comply with the FHWA Final Rule.
- This form was filled out by preparers, and then distributed to approvers via email.
- Many form sections were narrative, with paragraph descriptions.

WisTMP 1.0
- Online web application initially launched in 2014
- Had capabilities for TMP Document preparation, routing & approval, and online access to a searchable archive repository of current & past TMPs.
- The TMP form was largely based on the previous paper form.

WisTMP 2.0
- Launched in March 2019
- Greatly improved TMP Form
- Topic of today’s presentation.
Objectives of WisTMP 2.0

• Streamline workflow (TMP preparation & approval process)
• Form Redesign
  • Restructured and Reorganized the form, eliminating redundancies.
  • Dynamic form that adjusts the amount of information required based on what is entered.
  • Increase amount of usable information entered into the TMP.
  • Increased Data Quality
• Support future decision support capabilities and work zone performance measures.
WisTMP Architecture

- WisTMP interfaces with 4 systems:
  - Financial System to obtain project information
  - GIS/LRS for mapping locations.
    - Photolog database is used by the Queue Warning System (QWS) decision support tool in WisTMP.
  - Crash database to obtain crash & other safety related information.
  - Project Team develops the TMPs that are entered into WisTMP.
  - Relevant WisDOT & FHWA staff review & approve the TMPs.
- Future work may link WisTMP and Wisconsin Lane Closure System (WisLCS) to share data.
WisTMP Workflow

• To Create a TMP, the PM fills in the basic project level information in Section 1A.
  • This automatically pulls relevant project level information from the WisDOT financial system.

• PM and TMP Team continue filling in the TMP Form sections.

• Components of a TMP:
  • The standard TMP document, filled out via series of “wizard” forms.
  • Attachments – additional forms, supplementary information
  • Signatures of the approvers
  • Review & Approval comments
  • Routing & Revision History.
WisTMP Workflow

• Once TMP ready, it goes through approval process

• Two stages:
  • 60% Approval – corresponds to the end of the design study phase.
  • 90% Approval – corresponds to the end of the plan, specification and estimate (PS&E) phase.

• Optional Amendments capture changes after the construction has started.

• WisDOT considers TMPs to be living documents
  • Referred to and updated throughout project lifecycle.
Approval Process

WisTMP Approval Process

Team Prepares, the Routes to Project Manager for Approval

Project Manager Approval

Regional Traffic Engineer Approval
Bureau of Traffic Operations Approval, if needed

Regional Project Development Chief Approval

FHWA Approval, if needed

Approved 90%?

TMP Amended, if needed

PM Approval

Amendments are optional

Up to 10 Amendments

No. We’re at Approved 60%.
Form 2.0 Enhancements

- Reduced to 10 sections
- Consolidated & reorganized form.
- Dynamic form
  - Certain sections drive what’s needed in later sections
- Limited narrative sections; more data element type information and data in tables.
Form 2.0 Enhancements

• Section 1 – Project Information
  • Divided into 3 subsections
  • No changes from Form 1
  • Important for this presentation is Locations:
    • Locations are map-based. When entering a location, user can use a map to enter the start and end of the work area.
    • Locations are used in 2 tables, one in Section 6 and one in Section 9.
    • A TMP can have multiple locations.
Form 2.0 Enhancements

- Section 3 – Existing conditions
  - New section, new data fields
  - Captures the existing conditions prior to construction.
  - Helps drive what’s needed in Section 5.
Form 2.0 Enhancements

- Mitigation Strategies
  - Form 1 – static list of about 20 strategies.
  - Form 2 – more dynamic list of about 90 strategies, split between 3 sections.

- Section 4 – Work Zone Strategies
  - Contains work zone strategies the project will use.
  - Cost is also entered, as needed, for each strategy.
    - Cost is initially a planning level estimate but can get closer to real value as project moves forward.
  - Helps drive what’s needed in Section 6.
Form 2.0 Enhancements

- Section 5 – Work Zone Impacts
  - Most questions have narrative answers.
  - Dynamic – based on the Yes/No questions in Section 3.
    - Only the Yes answers will have their corresponding question displayed here.
  - The first & last three questions always present.

These fields depend on the answers given in Section 3.
Form 2.0 Enhancements

- Section 6 – Traffic Analysis
  - Consolidated several sections in Form version 1.0 into this one section.
  - Traffic Analysis table is always present.
    - Based on the Locations entered in Section 1
    - Decision Support Tool also uses this information.
  - Other subsections here are dynamic, and only shown if the corresponding Work Zone Strategy was selected in Section 4.
  - Detour information is now in table form. Previously it was narrative.
Form 2.0 Enhancements

• Sections 7 & 8
  • Section 7 contains Public Information Strategies
  • Section 8 contains Incident Management Strategies
Form 2.0 Enhancements

- **Section 9 – Staging Plans**
  - Captures the staging plans for the project
  - Dynamic in that Pedestrians question only displayed if Section 3 has Yes for pedestrians.
  - New Vehicle Restrictions table.
    - Captures restrictions per location listed in section 1.
Form 2.0 Enhancements

- Form Validation
  - New feature in Form 2.0
  - Validates the form for missing data that is needed.
  - Generates a list which is shown in a popup window.
  - TMP not allowed to be routed for approval until TMP passes Form Validation.
Work Zone Data

• WisTMP is one tool WisDOT uses for collecting work zone data
• This data is used to help develop new policy
• The data can also be merged with other data sources to help make project level decisions
  • WisTMP includes one Decision Support Tool, which assists Regional Work Zone Engineers in determining the use of a Queue Warning System (QWS).
Queue Warning System Decision Support Tool

- **QWS DST**
  - Combines information from WisTMP, Police Crash Reports, and WisDOT PhotoLog, and Wisconsin Curve Database.
  - Displays any current issues on the roadway, for each Location listed in a TMP.
  - Dots are crashes and triangles show where substandard curve is.
  - System helps determine where a Queue Warning System might be useful.
Future Work

• Further integration with other systems such as WisLCS
• Expand use of decision support tools
• Map TMPs for better project coordination
• Development of a project dashboard for performance measurement
Questions?

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