AASHTOWare Project Status

FieldManager & Contract Management Conference

April 1, 2015

Background

- *Trns•port has been renamed AASHTOWare Project as part of AASHTO rebranding initiative*
- *The AASHTOWare Project (AP) systems are critical to MDOT carrying out its mission*
- *MDOT uses the systems to manage and process virtually all aspects of Michigan's road, bridge, airport, and railroad construction project life cycles*
- *Current legacy systems utilize client/server based technology*
  - *Becoming obsolete*
  - *Eventually will no longer run in standard supported environment*
- *Major endeavor underway to rewrite and update existing client/server based systems for operation in web based environment*

Transition Analysis Project

- *MDOT conducted transition analysis project in 2011*
- *Purpose of project was to identify and examine the issues involved with migrating the client/server based legacy systems to the new web based systems*
- *Based on the results of the analysis, it was recommended:*
  - *Move forward with implementing the web based systems*
  - *Retire the client/server predecessors*
  - *Replace MDOT's Materials Testing System (MTS) with the AP Construction/Materials system*
  - *Implement the AP Civil Rights & Labor system*

Legacy/Replacement Systems

Legacy System	AP Replacement System
• Proposal and Estimates System (PES) • Letting and Awards System (LAS)	• Preconstruction
• FieldManager Software Suite • FieldNet System • Construction Administration System (CAS) • Materials Testing System (MTS)	• Construction/Materials
• Expedite	• Bids
• N/A	• Civil Rights & Labor

Business Case For Moving Forward

- *New and improved functionality in web based systems*
  - *Significant amount of new business functionality in addition to retaining applicable functionality in client/server predecessors*
  - *Provides improved business efficiencies as software is built using best business practices based on input from DOTs nationwide*
- *AASHTO using license fees from client/server systems to help fund the development of web based systems*
  - *AASHTO no longer funding enhancements to client/server systems*
  - *Only further investment being made by AASHTO to client/server systems is for break/fixes*
- *Consistent with State of Michigan's strategic direction which calls for migrating client/server applications to web based environment*
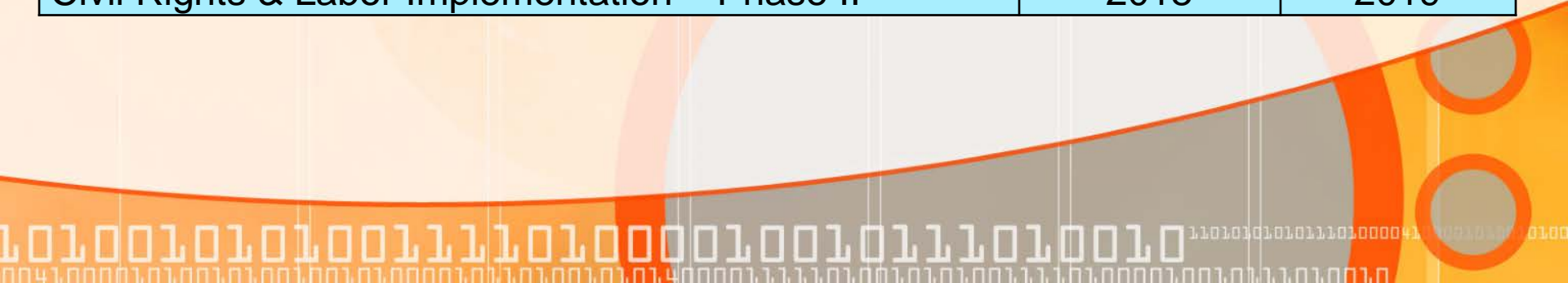
Business Case For Moving Forward (cont)

- *Web based systems designed with a unified data model with a single standard security model*
  - *Provides single consolidated architecture that addresses the entire construction project life cycle (design, letting, award and construction) in one consolidated system*
  - *Provides many benefits including ability to install and maintain a single software solution for multiple functional areas*
- *Web based systems are industry standard and offer many advantages over client/server systems*
  - *Access to software much more readily available to users as web browser and internet connection is all that's required*
  - *Users no longer have to deal with installs, patches, and upgrades*
  - *Software upgrades much faster to complete statewide*
  - *Software less costly to maintain for State of Michigan and user organizations*

Business Case For Moving Forward (cont)

- *If MDOT does <u>not</u> move forward, the following will likely occur:*
  - *MDOT will lose AASHTO support for client/server systems*
    - *AASHTO is sun setting client/server legacy systems and will no longer provide support after sun set date*
    - *PES/LAS support ended 6-30-14*
  - *MDOT will have to independently fund enhancements needed to client/server systems in order to keep functionality current*
  - *MDOT will not realize the many new business functions and efficiency improvements provided in web based systems*
  - *Client/server systems will eventually no longer run in State of Michigan's standard environment*

Projects Needed To Move Forward With Web Systems

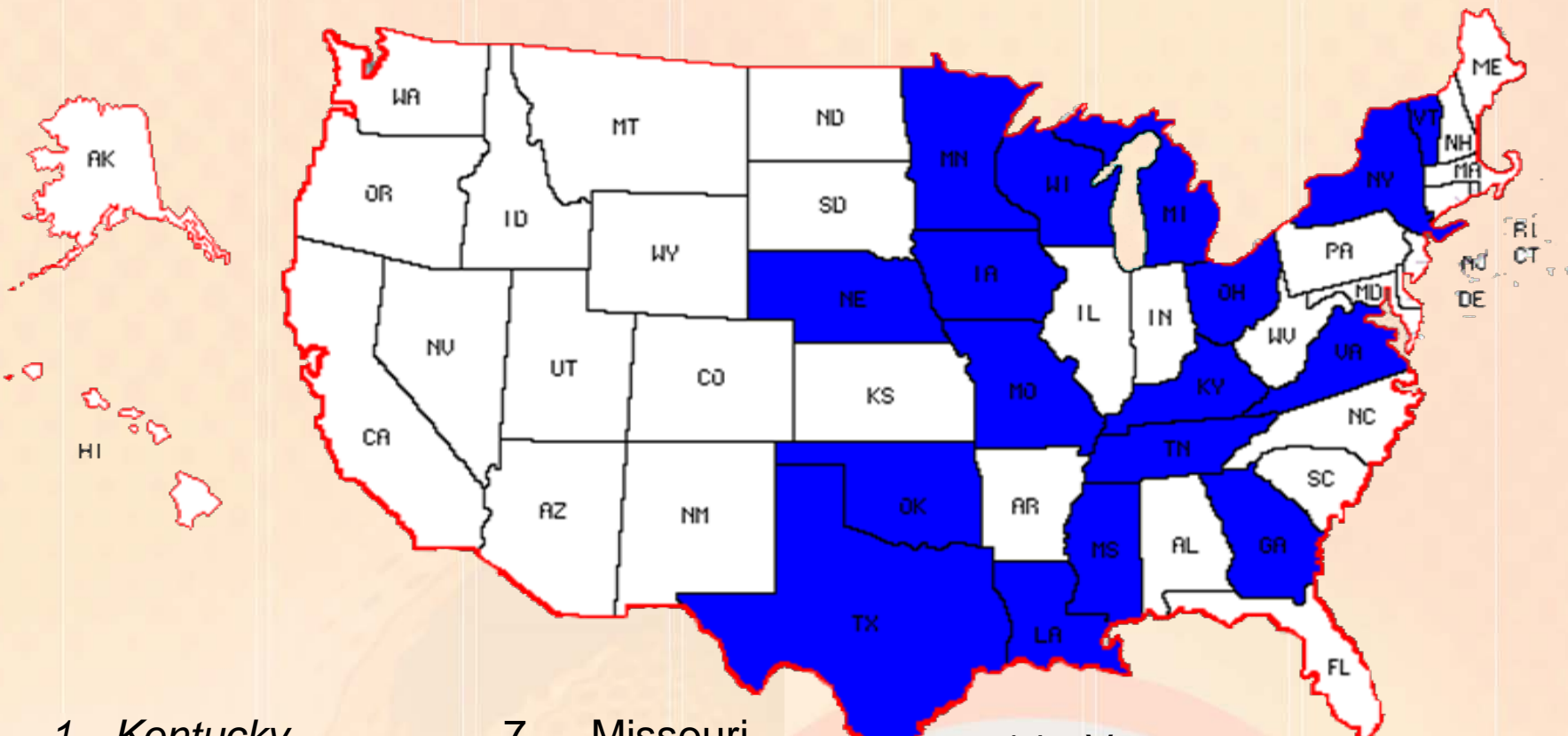| Project	Actual/Est. Begin Year	Actual/Est. End Year
Preconstruction Analysis/Preparation	2011	2014
Construction/Materials Development	2011	2014
Preconstruction Implementation	2013	2014
AASHTOWare Project 3.01 Development	2014	2016
Construction/Materials Analysis/Preparation	2015	2016
Civil Rights & Labor Analysis/Preparation	2015	2016
Bids Analysis/Preparation	2015	2016
Construction/Materials Implementation	2016	2017
Civil Rights & Labor Implementation	2016	2017
Bids Implementation	2016	2017
Construction/Materials Analysis/Preparation – Phase II	2017	2018
Civil Rights & Labor Analysis/Preparation – Phase II	2017	2018
Construction/Materials Implementation – Phase II	2018	2019
Civil Rights & Labor Implementation – Phase II	2018	2019

Preconstruction System Notes

- *Cut-over from PES and LAS to Preconstruction system*
  - *Migrated data from PES/LAS to Preconstruction*
  - *Implemented 20 upgraded Preconstruction interface systems into production*
  - *Implemented Preconstruction into production*
  - *Decommissioned PES and LAS*
  - *Cut-over was completed in Oct, 2014*
- *Currently Preconstruction system is for MDOT staff only*
- *Local agencies and design consultants are continuing to use the Michigan Engineers' Resource Library (MERL) and the Stand Alone Project Worksheet (SAPW)*
- *MDOT will likely expand Preconstruction use to local agencies and design consultants in a future release*

Construction/Materials Development Project

- *Software design and engineering required to develop the Construction/Materials system*
- *Michigan partnered with AASHTO on the project:*
  - *Served as champion state with nationwide leadership role*
  - *MDOT's system requirements were included in project*
  - *Provided project management and oversight assistance*
  - *Provided staff for comprehensive hands-on participation*
  - *Provided funding contribution*
- *Partnership benefits included:*
  - *AASHTO and other states provided majority of funding*
  - *Utilized expertise of AASHTO committee members for "best business practices" (16 states participated)*
- *System delivered with AP release 3.00 and project was completed in Dec, 2014*

States That Participated In Construction/Materials Project

1. *Kentucky*
2. *Louisiana*
3. *Georgia*
4. *Iowa*
5. *Michigan*
6. *Minnesota*
7. Missouri
8. Nebraska
9. New York
10. Ohio
11. Oklahoma
12. Tennessee
13. Texas
14. Vermont
15. Virginia
16. Wisconsin

Thank You Beta Testing Participants!

- *Tim Anderson, Bay City TSC*
- *Mohammad Azam, Lansing Construction Field Services*
- *Mike Eustice, Hubbell, Roth & Clark*
- *Scott Greene, Lansing Construction Field Services*
- *Yvonne Guerra, Jackson TSC*
- *Nathan Heath, Lansing Finance & Administration*
- *Connie Kern, Lansing Finance & Administration*
- *Lisa Martino, Parsons Brinckerhoff*
- *Channing Page, Lansing TSC*
- *Eric Rodegher, Kent County Road Commission*
- *Bob Smrek, Marshall TSC*
- *Gary Swanson, Grand Traverse County Road Commission*
- *Brian Therrian, Ishpeming TSC*
- *Matt Thomas, Mt. Pleasant TSC*
- *Tia Thomas, Abonmarche*
- *Dennis Warren, Lansing Construction Field Services*

Construction/Materials System

- *System contains all applicable functionality in FieldManager and CAS*
- *Also includes significant amount of new functionality:*
  - *Electronic approvals for:*
    - *Contract Modifications*
    - *IDRs*
    - *Pay Estimates*
    - *Contractor Performance Evaluations*
  - *Historical reports*
  - *Ability to go paperless in many areas including:*
    - *Contract Modifications*
    - *IDRs*
    - *Pay Estimates*
    - *Contractor Performance Evaluations*
  - *Event notifications*
  - *Materials source & facility oversight*

Construction/Materials System (cont)

- *New functionality (cont):*
  - *User roles*
  - *Enhanced security*
- *Interfaces with Mobile Inspector app which allows inspectors to create IDRs using a mobile device (tablets, smart phones)*
- *Improved/reengineered functionality in many areas including:*
  - *IDRs*
  - *Material approvals*
  - *Material usage*
  - *Stockpiles*
- *Web based system will streamline and eliminate:*
  - *FieldNet*
  - *Sending read-only copies of contracts to contractors*
  - *Client software installs and upgrades*

Construction/Materials System (cont)

- *New user interface:*
  - *Does not look like FieldManager*
  - *Looks like a web application*
- *Many enterprise level agency customization options including ability to:*
  - *Customize field labels*
  - *Customize screens*
  - *Insert external links on screens*
  - *Customize reports*
  - *Develop and embed new reports*
  - *Locate user access to reports based on business task at hand*

Construction/Materials System

- *Will use standardized AASHTO terminology as much as possible - changes include:*
  - *Inspector's Daily Report -> Daily Work Report*
  - *Contract Modification -> Change Order*
  - *Construction Pay Estimate Report -> Payment Estimate For Contractor*
  - *Contractor's Performance Evaluation -> Contractor Evaluation*
  - *National Pollutant Discharge Elimination System -> Stormwater Environmental Compliance Inspection Report*
  - *Site Times - > Contract Times*
- *Hundreds of enterprise level agency configuration options which will allow MDOT to configure software based on MDOT business rules*

Construction/Materials Analysis/Preparation Project

- *Project began in Jan, 2015*
- *Conducts the analysis work and tasks required to prepare the Construction/Materials system for implementation*
- *Work includes:*
  - *Conduct gap analysis between Construction/Materials and predecessor systems*
  - *Preparation work required to migrate FieldManager/CAS data, interfaces, reports, and business processes to Construction/Materials*
  - *Configure software for MDOT's business processes*
  - *Identify and apply customizations needed*
  - *Prepare software for external access*
  - *Develop and customize reports*

- *Work includes (cont):*
  - *Test software in DTMB's environment*
  - *Upgrade interface systems to interface with Construction/Materials instead of FieldManager/CAS*
  - *Develop training plan*
  - *Develop implementation plan*
- *Seeking SMEs from user community*
  - *2 local agency reps*
  - *2 engineering consultant firm reps*
  - *2 construction contractor firm reps*
- *Project currently in the initiation & planning phase*
- *Current estimated completion is June, 2016*

AASHTOWare Project 3.01 Development Project

- *Software design and engineering required to develop AP release 3.01*
- *Project currently in design phase*
- *Provides major functionality improvements to all the web based AP modules including Preconstruction and Construction/Materials*
- *Construction/Materials enhancements include:*
  - *Storm water environmental compliance inspection functionality*
  - *Force account functionality*
  - *Ability to create and maintain meeting records*

- *Construction/Materials enhancements (cont):*
  - *— Materials management additions:*
    - o *Material requirements*
    - o *Laboratory information management*
    - o *Material sampling and testing*
  - *— Ability to go paperless in additional areas including:*
    - o *Material Test Reports*
    - o *Material Test Certifications*
  - *— Various user interface improvements*
- *Currently scheduled for completion Sept, 2016*

Overall Construction/Materials Schedule

Task	Actual/Est. Begin Date	Actual/Est. End Date
Analysis	Apr. 2010	Oct. 2011
Design	Jan. 2011	Jan. 2014
Development	Apr. 2011	Feb. 2014
Alpha Testing	Feb. 2014	May 2014
Beta Testing	May. 2014	Sept. 2014
Production Release Finishing	Oct. 2014	Dec. 2014
Production Analysis/Preparation	Jan. 2015	June 2016
Implementation	July 2016	June 2017
Production Preparation – Phase II	July 2017	June 2018
Implementation – Phase II	July 2018	June 2019

Const/Materials Use For Non-MDOT Let Contracts

- *State of Michigan will host Construction/Materials software for MDOT let contracts only*

- *FieldManager will continue to be available for non-MDOT let contracts for awhile after MDOT has implemented Construction/Materials*

- *Potential tools that could be used for non-MDOT let contracts after FieldManager is no longer available include:*
  - *Michigan Tech's Michigan Engineers' Resource Library (MERL) software*
    - *See http://merl.michiganltap.org/about for information*
  - *AASHTO contractor's (Info Tech) Appia software*
    - *See https://www.infotechfl.com/appia for information*

Questions?

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