

# EAMP - AGILE ASSETS PROJECT OVERVIEW

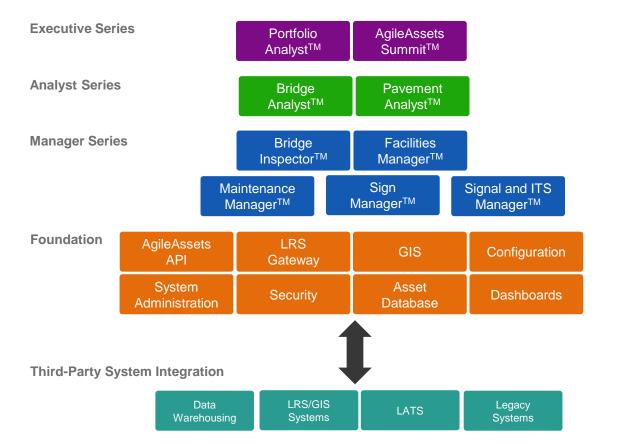
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## ENTERPRISE ASSET MANAGEMENT PLANNING AGILE ASSETS

- Bridge Data Information System (BDIS)
- ⇒ Pavement Management System (PMS)
- Structures Management System (SMS)
- Portfolio Analyst
- Roadway Inventory System (RIS)
- Maintenance Management System (MMS)
- Summit



#### AGILE ASSETS PRODUCT SUITE AT NYSDOT







#### **BRIDGE DATA INFORMATION SYSTEM (BDIS) LIVE 2014**

- Bridge and Large Culvert Inventory and Inspection (Conversion to National Bridge Elements 2015)
- Inspection Scheduling
- Flagging
- Vulnerability Analysis
- Load Rating
- ⇒ Field Data Collection (FDC)
- Federal Reporting
- Daily Extract



#### STRUCTURES MANAGEMENT SYSTEM LIVE 2017

- Inventory and Inspection of Secondary Structural Assets
  - Overhead Sign Structures (OSS)
  - Retaining Walls
  - Noise Walls
- ⇒ Field Data Collection (FDC)
- Bridge Needs Modeling
- Ranking Analysis



#### **PAVEMENT MANAGEMENT LIVE 2017**

- Pavement Needs Modeling
  - Repository for Pavement Condition Data
  - 45 Empirically Based Deterioration Curves
  - ☐ Treatment Recommendations based on Time at a Condition State
  - Utilizes Optimization Analysis
- Integration with ESRI Roads and Highways for Linear Referencing and Geometry
- Roads and Highways Now the Underlying Linear Referencing System for All

Assets



#### **PORTFOLIO ANALYST EXPECTED 2018**

- Cross Asset Trade Off Analysis
- Determines Funding Levels for Various Asset Classes to Achieve Optimal Outcomes
- Utility Function Based Facilitated by Decision Lens
- Utility Functions Driven by Condition State Triggers + Backlog
- Single Objective Multi-Variant Optimization Analysis (Frontier Performance) for a Given Funding Level
- Currently only Pavement vs Bridge
- Program Level Trade Off (Not Project Level)



#### **ROADWAY INVENTORY SYSTEM EXPECTED 2018**

- RIS Data Warehouse
- Smart Entry Engine (Tabular and Spatial Integrated)
- Repository for Roadway Inventory (Condition in PMS)
- Straight Line Analyzer



#### **SUMMIT**

- High End Analytic Tool
- On the Fly Ad Hoc Queries
- On the Fly Graphing Capability



#### MAINTENANCE MANAGEMENT SYSTEM EXPECTED LATE 2018

- Daily Work Reporting Labor, Equipment, Materials and Work Accomplishment by Asset
- Time and Attendance
- Stockpile Management
- ⇒ Work Management Work Orders, Work Requests, Service Requests, Projects, Annual Work Planning and Budgeting, Work Scheduling
- Maintenance and Signals Crews and Signals Lab Management



#### MAINTENANCE MANAGEMENT SYSTEM (CONT.)

- Facilities Management
- AVL and Telemetry
- Mobile Work Manager / ESRI Collector
- Secondary Asset Inventory and Condition
- Fugro Data Collection
- Maintenance Quality Assurance



### **WORK ORDER, TIME IN & OUT FLOW**

Automatic Vehicle
Location (AVL)
Snow & Ice operations

Trip Summary Payload
StartDate: MM/DD/YYYY
StartTime: HH:mm
EndDate: MM/DD/YYYY
EndTime: HH:MM
Truck\_ID
Employee\_ID
Dry Material Type
Dry Material Used(T)
Wet Material Type
Wet Material Used(G)
Miles Traveled(Mi)
Hours (HH:MM)

Create Work Order

Maintenance

Management System

(MMS)

Create/update Work Order
 Time In/Time Out

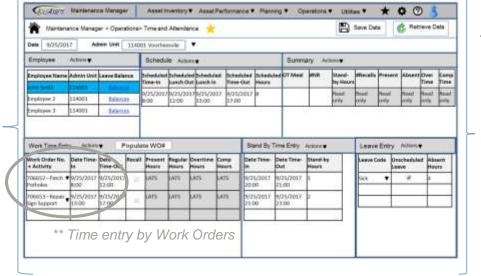
Mobile Work Manager (MWM)

. Get Employee Schedule



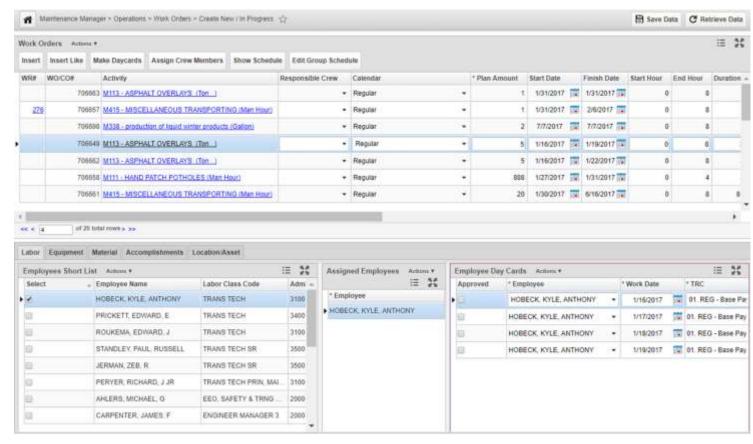
LATS

- Process Time In / Time Out
- 2. Delete Time In / Time Out
- Process Employee Time Summary
- 4. Process Time Approval
- Process Schedule Exception
- 6. Delete Schedule Exception
- Process Leave
- 8. Delete Leave





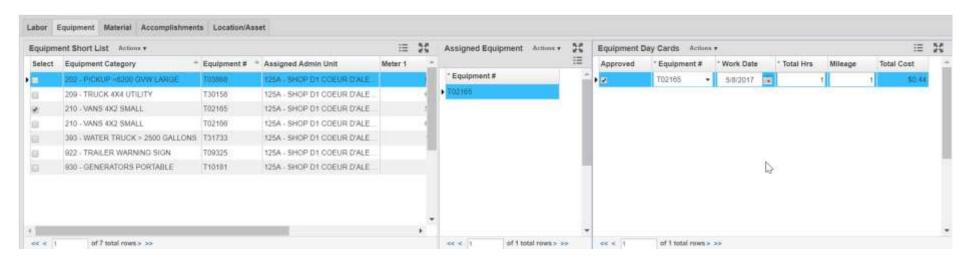
#### MMS: WORK ORDERS INTEGRATION WITH TIME AND ATTENDANCE



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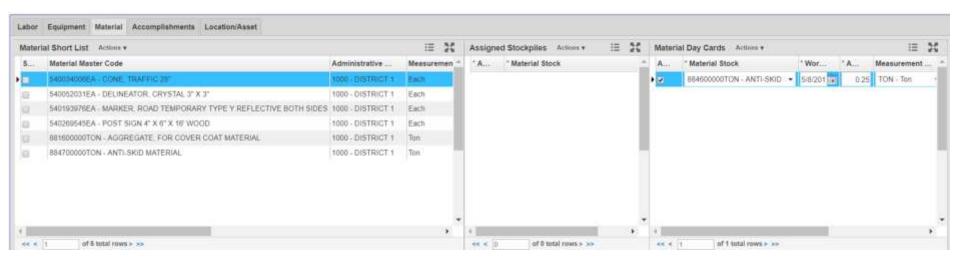
Department of Transportation

#### MMS: WORK ORDERS INTEGRATION EQUIPMENT REPORTING





#### MMS: WORK ORDERS INTEGRATION WITH MATERIALS REPORTING





#### MMS: MOBILE WORK REPORTING AND TIME AND ATTENDANCE

- Mobile Work Manager
  - Integrated Work Order and Time and Attendance Reporting
  - Mobile Solution Benefit \$8.4 M/Year In Increased Productivity Crews Don't Have to Return Early for Supervisor to Do Desktop Reporting (OITS B/C Analysis 11/27/2017)
  - LATS Would Require More Computers in Residencies to Report or Lost Productivity by Sharing Computers
- ⇒ AVL
  - Automatically Creates Work Order for Each Trip including Labor Hours, Equipment Time and Materials Summary



#### CRITICAL MMS FUNCTIONS DEPENDENT ON INTEGRATED WORK/TIME REPORTING

- Payroll
- Federal Emergency Reimbursement: FEMA and FHWA
- Salt and Materials Management
- Salt Management and Funding
- Tort Liability
- Budget Justification
- Operational Guidelines and Performance Improvements
- Business Decision Making



#### **KEY CONSIDERATIONS**

#### Impact to current business process

- Maintenance division business process calls out for time entry at the supervisor level for the crew assigned to the Work Order
- Moving time entry over to LATS may impact this business process as with LATS, individual users may have to enter their own time
- Potential Maintenance division users impacted by this change ~3000

#### Streamlining business process

- Current setup with MAMIS as well as one planned for MMS allows for time to be entered in the same application where the work is performed
- This limits the # of applications user need to hop to complete his/her assignment

#### Data Integrity

- ☐ In MMS, time is recorded at Work Order/Activity level
- Moving Time IN/Out to LATS will require additional data reconciliation between LATS and MMS impacting overall data quality
- Past experience with few of AgileAsset's clients who chose moving Time entry to separate application, resulted in additional software and business processes to support ongoing data reconciliation and correction



#### PROBLEMS WITH SEPARATING WORK REPORTING FROM TIME AND ATTENDANCE

- Creation of Duplicate Data Entry
- Inability to Do Crew Level Reporting
- Need to Recreate Full Work Order Functionality in LATS
- Data Integrity
- Training and Support
- Loss of Cost Savings from Mobile and AVL
- CMA (LATS) Would Need to Develop Specialized Knowledge in Maintenance Management
- Impact on Materials Management and Federal Reimbursement
- Schedule
- Redesign of Web Services



#### **SCHEDULE**

- December 2017 Completed Design Phase
- January 2018 Begin Construction
- October 2018 User Acceptance Testing
- January 2019 User Training
- ⇒ February 2019 Phase 1 Go Live: Online Version
- May 2019 Phase 2 Go Live: Mobile Version



### Questions?

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