

- Transportation Asset Management Plan (TAMP)
- Pavement Asset Management System (PAMS)
- Bridge Asset Management System (BAMS)



TAMP Background

- Case Study "Red Report" 2003
 - o Wealth of inventory and condition data.
 - Homegrown, uncoordinated mainframe applications.
 - Lack needs predictions, cost tracking, and integration across assets.
- MAP 21 2012

 TAMP first discussed
- FAST Act
 - o TAMP rulemaking
 - o Performance measures





TAMP Actions To Date

- Organization Changes:
 - o Reduce "silos."
 - o Single source for condition data reporting.
 - o Accentuate asset management focus.
- Draft Development:
 - Performed Gap Assessment and Self Assessment.
 - o 5th draft to date.
- Steering Committee Formation:
 - o Standards and requirements.
 - o Oversight and monitoring.



Plan Requirements

- TAMP is for the NHS.
- All NHS pavement and bridge assets, regardless of ownership.
- Intending to eventually include other NHS infrastructure assets and assets on other public roads.
- TAMP shall cover, at a minimum, a 10-year period.

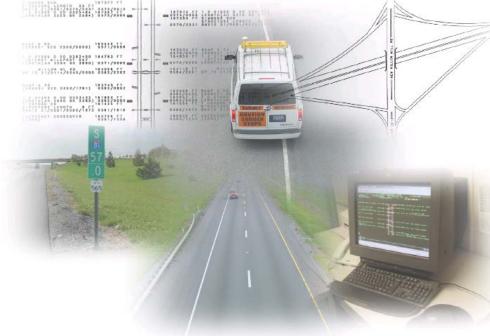


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Roadway Management System (RMS)

- PennDOT's means for:
 - o Defining and monitoring the State highway network.
 - Maintaining an inventory of the roadway features, conditions, and characteristics.



EXTR: 02/16/2	000 ROADWAY MA	NAGEMEN	T SYSTEM	02/16/2000 08:33:33
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		==	0010/1085	
ASHDALE ST	001058 FT		001058 FT	()
(CITY)	0010/1058	==		
()	000774 FT		000774 FT	SHELTON ST
		2.2	0010/0774	
RUSCOMB ST	000702 FT		000702 FT	()
(CITY)	0010/0702			
	000512 FT		000512 FT	ALBANUS ST
		17	0010/0512	(CITY)
ALBANUS ST	000497 FT		000497 FT	
(CITY)	0010/0497			
ROOSEVELT BL	000208 FT	11	000208 FT	ROOSEVELT BL
(SR6001 SEG 0181/1006)	0010/0208	==	0010/0208	(SR6001 SEG 0181/1006)
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		==	0010/0050	(CONN)
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ROOSEVELT BL			NC R	ISING SUN AV
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SR: 1001	TOTAL LEN	1: 7.50	6 MI.	
COUNTY: PHILADELPHIA	DIST: 60	95	SR DIR: B	
ACTN:				
SB a				32/008



Roadway Management System (RMS)

- Data stored and managed in RMS includes:
 - o Roadway geometry
 - o Traffic information
 - o Pavement and shoulder history
 - o Municipal and legislative boundaries
 - o Intersection locations
 - o Roadside features
 - o Structure locations
 - Railroad crossings
 - o Pavement testing data
 - o Condition survey data (including guide rail and drainage features)
 - o Posting/bonding information



Pavement History Data

Includes layer type, layer depth, layer width, year placed.

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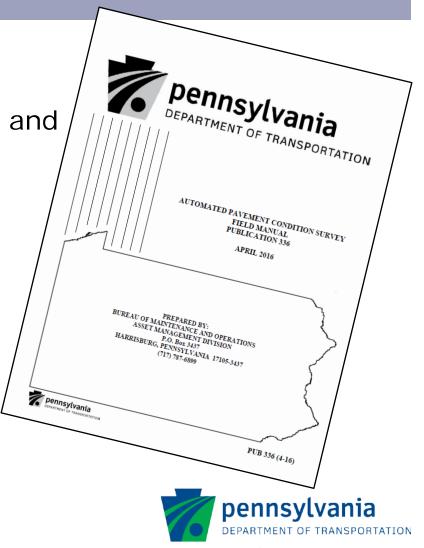


Pavement Condition Data

<u>STAMPP</u>

Systematic Technique to Analyze and Manage Pennsylvania Pavements

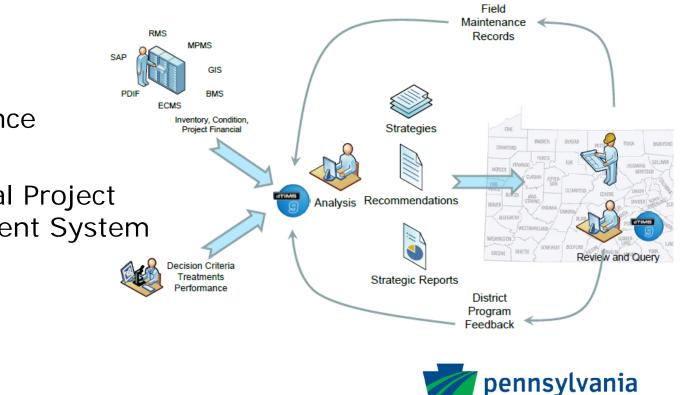
- Pavement Conditions Videologging (Pub. 336)
- Shoulder & Guiderail manual survey (Pub. 33)
- Storm Water Facility manual survey (Pub. 73)
- CRC & Unpaved Roads manual survey (Pub. 343)



Pavement Asset Management System

Makes use of data from:

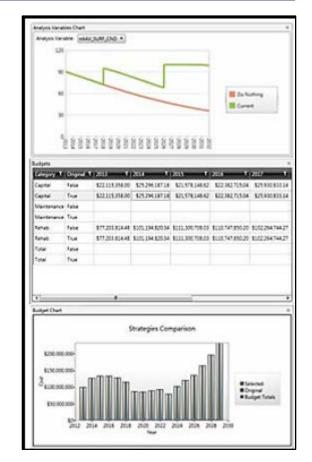
- RMS
- SAP Plant Maintenance
- Multimodal Project Management System



DEPARTMENT OF TRANSPORTATION

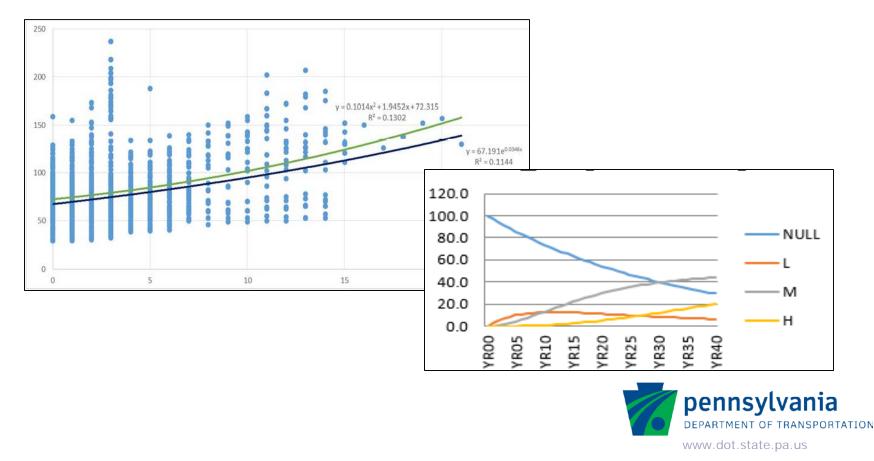
Pavement Asset Management System

- Predict optimized strategies based on budget scenarios and condition data.
- Cost-effective network planning.
- Models for forecasting future pavement conditions.
- Existing long-term budget allocation decisions (TIP, 5-Year Plans) present challenges to implementation and affect how funds are optimized in PAMS.





• Without PAMS, no ability to predict individual pavement distress conditions for like pavements.



- Deighton Associates contracted in April 2014.
- Customized off the shelf product:

Deighton's Total Infrastructure Management System (dTIMS[®])

• PAMS will be ready for use by Central Office and District Personnel in the first quarter of 2017.



- PAMS was moved to production in May of 2016.
- Testing and production environments were found to operate differently, and the production environment security prevented user access.



- Full statewide implementation of PAMS will be incremental over a 5-year timeframe.
 - <u>Year 1</u> Validate the results. Feedback will determine adjustments, and gaps in data to be addressed.
 - <u>Year 2</u> Continue data validation, and begin to apply to planning processes. Focus on pavement treatment selection practices as related to Surface Improvement Plans (SIP).



- <u>Year 3</u> Continue data validation, and identify planning methods and policy direction. Focus on pavement treatment selection practices as related to SIP and TIP.
- <u>Year 4</u> Establish Statewide role of PAMS utilization and results related to SIP work.
- <u>Year 5</u> Monitor and fine-tune, established best-practices and finalize policy content. Utilization of PAMS for SIP Work and Pavement Preservation TIP Work.



- After Year 5, publish policy:
 - o User Policy: who utilizes the system, when, for what.
 - Data: where does the data come from, how it can be improved or maintained.
 - Prioritization of changes/issues and how they are tasked.



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Bridge Management System (BMS2)

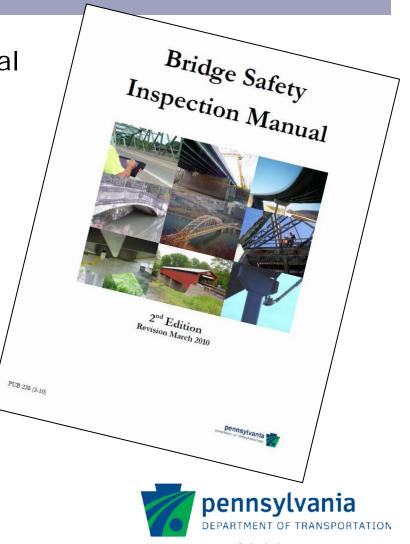
- Database to house all bridge inventory and condition data.
- Location and administrative data from RMS.
- Interfaces with SAP-PM for maintenance needs/activities.

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	Welcome to PennDO	's Bridge Management System	
Welcome to the web version of the PennDOT Bridge Management System optimal programs for bridge maintenance and rehabilitation.	2 (BMS2). Authorized users may access this site to view and maintain inventory and insp	etion information for Pennsylvania bridges and other structures. BMS2	Web supports decision-making to help maintain the long-term health of bridges and to formulate
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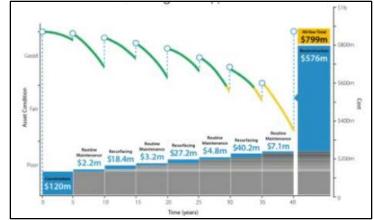
Bridge Inspection Data

- Bridge Safety Inspection Manual (Pub. 238)
- Specification for the National Bridge Inventory Bridge Elements (SNBIBE)
- AASHTO Manual for Bridge Element Inspection (MBEI)



Bridge Asset Management System (BAMS)

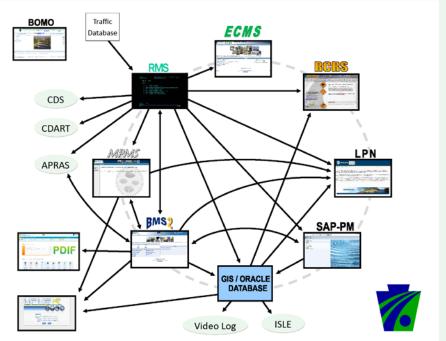
- Similar to PAMS, BAMS is a forecasting tool to allow us to better manage our bridge assets.
- Provides information to Districts and Planning Partners to help select the right repair at the right time.
- Predict future bridge condition based on funding levels.
- Analyze our data sets and assist in programing to lowest life cycle cost (LLCC).





Bridge Asset Management System (BAMS)

- Similar to PAMS, BAMS will rely on databases that contain years of historic inventory, inspection data and other information from:
 - o BMS2
 - o ECMS
 - o MPMS
 - o RMS





Bridge Asset Management System

<u>Status:</u>

- Preliminary work completed:
 - o Deterioration modeling.
 - o Cost modeling.
- Expected implementation in 2017.



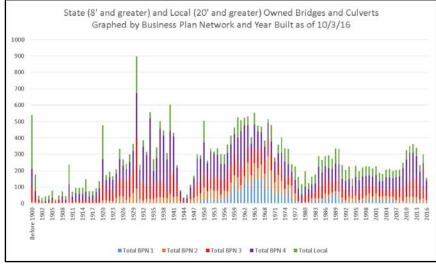
Bridge Asset Management System (BAMS)

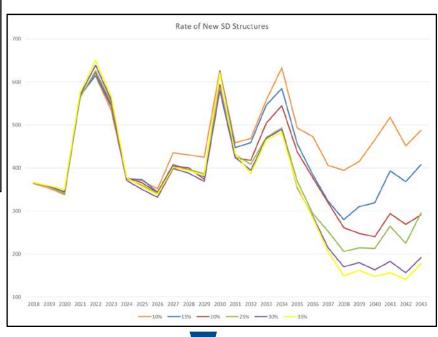
- In advance of BAMS, BAMS Lite has been developed.
- Scaled down version of the COTS, designed to forecast bridge condition based on a given funding level.
 - Network level only.
 - Cannot create specific projects (hence "Lite").



Bridge Asset Management System (BAMS)

• BAMS Lite - Same great information, less detail.







Transportation Asset Management Plan (TAMP)

Pavement Asset Management System (PAMS)

Bridge Asset Management System (BAMS)



Questions?





J. Michael Long, P.E. Chief, Asset Management Division Bureau of Maintenance & Operations (717) 787-6899 johlong@pa.gov

