Oklahoma Department of Transportation
October  2015

# OKLAHOMA/UTAH PEER EXCHANGE (OKLAHOMA DOT ASSET MANAGEMENT SCAN)

A summary of activities and discussions out of the Utah hosted asset management scan.

# ACKNOWLEDGMENTS

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## PURPOSE

The DOT scan is but one step in a series of activities that will provide principle players the framework to foster ODOT's approach for developing a performance-driven Transportation Asset Management Plan (TAMP) as MAP-21 requires. Where early opportunities to organize thinking with Executives and top managers afford the most effective planning and execution towards TAMP efforts, the scan will offer exposure to best practices and lessons learned.

## THE WELCOME

Oklahoma's arrangements for a full day of asset management activities were coordinated with the help of Utah's Director of asset management Stan Burns. Mr. Burns was the primary meeting facilitator while other UDOT staff engaged the ODOT team as the agenda allowed.

Carlos Braceras, UDOT's Executive Director offered comments as he welcomed the ODOT team and FHWA partners. Mr. Braceras recalled that asset management had evolved from a range of initiatives which collectively would enhance transparency. He noted that an evolution of challenges persists as coordination of different initiatives continues. A direct take away was the idea that Oklahoma DOT could start small with a focus on the highest valued asset. This approach recognizes that the asset management program will implement towards improvements.

## THE ODOT OVERVIEW

Tim Gatz, ODOT Deputy Director gave an overview of the Oklahoma State transportation system and the agency roles (including partnership with Oklahoma Turnpike Authority). He recalled that a slow growth in State funding inside an environment of relative low tax-base had challenged the delivery of ODOT's mission; to support the growing commerce. Mr. Gatz added that recent legislative increases came with minimal spending contingencies. The group perceived this detail to be a direct value to Oklahoma's preservation programs.

Asset preservation activities augment the capital project development process. Such activities had been made possible through State funding. Effectively the process considers preservation outcomes as the 8 year Construction Work Plan is rebalanced. The result is amplification of the highest benefit for the transportation system.

Collectively ODOT's organizational units and asset management systems support Division Engineers as they drive decisions on meeting the needs of the system. Today's resource levels suggest that alongside Operations, efforts from the Strategic Asset & Performance Management and Project Management could assemble and capture what is being done today. The result would be a "true Asset Management System" that institutionalizes transparency and usability across a systematic investment strategy.

Terri Holley, Oklahoma TAMP Lead, wrapped up DOT overviews by further reporting on Oklahoma's asset management status in relationship to MAP-21 requirements. She noted that as development of ODOT's TAMP continues, the federal rulemaking process related to both the transportation asset management & national performance management measures would be monitored as primary influences.

## THE UDOT OVERVIEW

Corey Pope, UDOT Director of Program Development offered a financial overview. He noted UDOT's 600 Million dollar revenue stream in terms of state transportation funds (STF), federal funds, and transportation investment funds (TIF).

Mr. Pope credited asset management for enhancing communication with legislatures. Shane Marshall, UDOT Deputy Director recalled that a recent 5cent increase in gas tax was due to the agency's "shift from talking about the needs to talking about the outcomes". Stan Burns added that a decade old commitment to use 85% of STP portion of federal funds for preservation and rehabilitation of pavements and bridges was a key breakthrough in asset management.

## UDOT ASSET MANAGEMENT PROGRAM OVERVIEW

Mr. Burns continued describing the evolution of UDOT's core Asset Management Program; including its structure and ancillary functions such as data warehousing, transparency in government, and cross asset application.

He attributed the adoption of asset management as a UDOT culture to executive leaders who proactively set the direction. The direction was continued each year as part of UDOT's publication, *Annual Strategic Direction and Performance Measures*. Further agency alignment had been propagated through principals like "Good Roads Cost Less". The message was communicated both internally and externally. Practices like "a plan for every section of every road" became staples of the Asset Management Program, while they were easily translated into practical action items.

## A CALL FOR KNOWLEDGE MANAGEMENT

Oklahoma DOT continues managing challenges of discontinuity evolving from an aging work force. In UDOT's case a workable solution to knowledge management was the branding of asset management with simple catch phrases. In later discussion Shane Marshall added to this sentiment. He recalled a roughly two year pause in effective development as personnel shifts occurred across key positions. Mr. Marshall suggested that early establishment of a framework that tells where the agency is going with asset management, combined with simple and repeatable delivery could anchor the vision; and combat the inevitable loss of common knowledge during transitional periods.

## UDOT ASSET GROUPS

Along the lines of repeatable delivery, UDOT's pavement management, bridge management, maintenance, and safety groups each shared perspectives on developments in asset programs and management systems. A fundamental consistency across asset groups was the common understanding of the roles and responsibilities; not only across areas but up and down the asset management program structure.

For example, Carmen Swanwick, UDOT Chief Structural Engineer recalled that even in the absence of a formal process her group's work within regions and across long range transportation planning had recognizable benefits. Overlapping plans in bridge program with pavement program streamlined the delivery and appearance of the preservation program as a whole. The ODOT team could appreciate that while not all agency areas currently function at the same maturity level, asset management assists with the discovery of agency benefits at every level.

## THE DECISION SUPPORT TOOL

Meeting attendees actively participated in a mock project selection process. The process was unique to the ODOT team in that it was facilitated and documented through a decision support tool developed by the Decision Lens capital planning solution.

UDOT's John Thomas led discussions starting with how ODOT prioritizes its capital spending in delivering its mission statement. Project categories were rated against established priorities in an effort to assign value in effectiveness in meeting strategic goals. With the ability to upload actual ODOT projects from the 8yr construction work plan, the end result was a recommendation of which projects, if developed, promised the greatest benefit.

Cognizant of the day's complete schedule, the exercise scope was kept simple. The ability to share perspectives and exchange personal knowledge across the team was highly valued. With the application of UDOT's decision support tool ODOT recognized a framework to capture and communicate an intricate decision process. Arguably the uses for any decision tool could grow with increased systems integration and the inclusion of enhanced data.

## GIS

Utah DOT offers a data portal which is the geo-spatial product of enterprise data integration. At its inception, the concept was to organize all data and make it accessible to everyone within the organization. Predefined maps can be queried by key word searches, but the "add layer" feature offers broad adaptability to the map viewer. Historically this type of data mining would be done manually, and could require significant efforts. As Oklahoma continues its own development in the way of geo-spatial data base, the team could anticipate a direct benefit in streamlined scoping and planning of projects.

Information systems and decision support tools tend to rest atop extensive data efforts. In this since, State DOTs perceive data as a valuable asset. UDOT's approach to managing its data was a central database or a data warehouse. Consolidated data collection and development facilitated by these functioning areas was not only cost effective but had helped establish buy-in across divisions.

A cohesive foundation at the data level is essential to an enterprise business process and its effective decision support framework[1]. For example, UDOT has seen a roughly 90% adherence-to-recommendations rate across all field divisions as engineers go through the consideration of system-generated project lists. With such a high focus on data UDOT's Shane Marshall highlighted another lesson learned summarized below:

Lean data collection, based on what decisions need to be supported by asset management, is a best practice. While expansion of data collection efforts is optional, appropriate data collection levels that are necessary to current asset management goals are crucial. An understanding of which data provides the greatest benefits and an awareness of the appropriate levels of asset management for the different asset types could help facilitate the approach to a "lean data" principal.

## AN AGENCY COMPARISON

A fundamental distinction alluded to multiple times throughout the day's discussions was the disparate situations with long term State transportation funding levels. While Oklahoma has seen an increase with the 2005 initiated R.O.A.D.S.[2] fund, Utah's established support more than two decades earlier is now evident in the existing system performance and conditions of assets. Notwithstanding Oklahoma was encouraged on the other hand, as this distinction could provide a foundation for a more long term vision for asset management.

## ODOT LESSONS LEARNED

Oklahoma's team saw the Utah scan experience as highly beneficial and timely as the early stages of TAMP development are ongoing.  UDOT was able to speak from a position of already having a TAM model established. They could essentially recognize the TAMP (as MAP-21 requires) to be a product delivered out of the process.

Key points around TAM included a strong presence from leadership; which had set the strategic direction of asset management for others to work towards. One benefit ODOT could envision with this leadership approach is a collective shift in the asset management culture.

An interesting point was made about starting new systems. Generally in the absence of negative associations, an opportunity for buy-in arises. Moreover, Oklahoma agrees with Utah in that all existing tools, people, and processes make up a substantial foundation for a newly formalized asset

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[1] Refer to the AASHTO Transportation Asset Management Guide, 2003. Figure 2.1 *Example Resource Allocation and Utilization Process in Asset Management*
[2] Rebuilding Oklahoma Access and Driver Safety

management program. Oklahoma anticipates that a fully developed asset management program will in turn enhance interactions between key agency areas.

The day ended with a brief wrap up session where the ODOT team was asked to identify takeaways from the scan experience. The list below is not all inclusive, as multiple takeaways have been integrated throughout the body of this summary document.

- A FULL GAP ANALYSIS OF AGENCY ASSET MANAGEMENT IS CRITICAL.

- A PREFERRED APPROACH IS TO START SMALL WITH MANAGEABLE PIECES AS THE AGENCY MOVES FORWARD.

- A VISION FOR ASSET MANAGEMENT IS TO SUBSTANTIATE THE DECISIONS BEING MADE.

- AVOID BURDENSOME DATA COLLECTION. SEEK AUTOMATED SOLUTIONS.

- AVOID REDUNDANT DATA COLLECTION. TAKE FULL ADVANTAGE OF WHAT IS ALREADY BEING COLLECTED.

- IDENTIFY WHERE THE SHIFTS AND ADAPTATIONS NEED TO BE MADE. UNDERSTAND BARRIERS TO CHANGE AND PLAN AHEAD.

## NEXT STEPS

- UTILIZE COMMENTS AND TAKEAWAYS FROM BOTH THE UTAH AND OHIO SCAN, AND INFORMATION FROM A COLLECTION OF ONGOING TAMP EFFORTS TO DEVELOP A FINAL OUTLINE FOR THE ODOT TAMP WORKPLAN.

- AS AN AGENCY, ADOPT OUTLINE FOR TAMP WORK PLAN AND FORMALIZE SUPPORTING COMMITTEE STRUCTURES DETAILED WITHIN.

- CONDUCT AGENCY GAP ANALYSIS AND ACT UPON FINDINGS.

- DEVELOP TAMP AS A FOCAL POINT FOR PEOPLE, PROCESSES, AND TOOLS COMPRISING A SYSTEM OF INTERACTIONS THAT OBJECTIVELY MEET THE CALL FOR A FORMALIZED TRANSPORTATION ASSET MANAGEMENT PROGRAM, AND MEET THE REQUIREMENTS FOR MAP-21.

**Oklahoma/Utah Peer Exchange (Oklahoma DOT Asset Management Scan)**

**August 13, 2015**

**Oklahoma DOT Scan Team**

| Name | Title | Area |
|---|---|---|
| Kevin Bloss, P.E. | Division Engineer | Operations - Field Division Three |
| John Bowman, P.E. | Director of Capital Programs | Capital Programs |
| Tim Gatz | Deputy Director | Executive Management |
| Paul Green, P.E. | Director of Operations | Operations |
| Terri Holley, P.E. | Asset Management Engineer | Strategic Asset & Performance Management |
| David Ooten, P.E. | Division Engineer | Strategic Asset & Performance Management |
| Brad Mirth, P.E. | State Maintenance Engineer | Operations |
| Casey Shell, P.E. | Chief Engineer | Operations |

## Oklahoma/Utah Peer Exchange (Oklahoma DOT Asset Management Scan)

## August 13, 2015

## Utah Department of Transportation

**Calvin Rampton Complex • 4501 South 2700 West • Salt Lake City, Utah 84114 • Conf. Rm: John Njord**

**8:00 to 10:00**

- 8:00 – 8:20 Welcome, Opening Comments, Introductions
- 8:20 – 8:40 Oklahoma DOT Overview – Tim Gatz, ODOT Deputy Director

  > Expectations
  > Current Processes
  > Anticipated TAM Organization

- 8:40 – 9:20 Utah Asset Management Overview – Stan Burns, P.E., UDOT Asset Management Dir.

  > Strategic Direction (*Preserve Infrastructure, Optimize Mobility, Zero Fatalities,*
  > Journey to Implementation
  > Maintaining Organizational Support to the TAMP Development
  > Steering Committee, Role / Responsibility to UDOT's TAM framework

- 9:20 – 9:45 Programs Management Overview – Stan Burns

  > Financial Summary
  > Introduction to Pavement Management

- 9:45 - 10:00 Break

**10:00 to 12:00**

- 10:00 - 12:00 Programs Management (matrix of measures/collect data/ analyze)

  > Pavements (wrap up) – Asset Group
  > Bridges – Asset Group
  > Maintenance (Routine and Operations) – Asset Group
  > Safety – Asset Group

*Programs Management Topics*: Management Systems used to identify criteria for preservation activities, dTims and data from Operations Management System used to predict future pavement conditions based on different funding scenarios, Management Systems matrix of measures included in the scope of TAM, Leveraging systems support with engineering judgement to yield Division flexibility yet promote repeatability, mobile Lidar and other technologies that identify, locate,

record, and assess conditions of roadway appurtenances, linking strategies for maintaining roadside assets - to - performance and safety of the highway system, Utah's shift to a sophisticated "Zero-Based" budgeting process, how funds are distributed to the Divisions, and the development of investment strategies.

**Lunch 12:00 to 1:15**

**1:15 to 3:45**

- 1:15 – 2:00 Performance Measures, Targets, Goals

  Approach to Target Setting
  Strategies to Target Setting and Implications to Performance

*Performance Topics*: measures/targets emerging from TAMP and/or legislature interests, handling distinctions between federal and state measures/targets, and using risk categories to simplify the risk management process.

- 2:00 – 3:30 Dashboards

  UPLAN, analyzing project based trade-offs for asset performance
  Decision Lens, cross-asset optimization
  Aligning Data to support Strategic Direction/Asset Management
  Data Warehouse

*Dashboards Topics*: How data becomes valued and treated as an asset in and of the TAM model. Resources (monetary, personnel, time) required to align data processes. How information from management systems is used in investment decision making (ex. preservation, safety, capacity, operations).

**3:30-4:00**

- Close out
- ODOT Take Away

# APPENDIX C

## Deliverables

Participants will be asked to provide three comments or takeaways each that address any of the following:

⇒ How can I (my unit) Champion the use of asset management principles and concepts within the organization?

⇒ What is my (unit's) role in supporting the agency's asset management efforts?

⇒ Where is the maturity of the ODOT's asset management program?

⇒ What assets should be included in the comprehensive asset management framework?

⇒ What agency actions or decisions will be covered in our plan? (preservation activities, capital improvement, operational improvements, etc.)

⇒ What business processes will be included in the TAMP effort? (policy development, planning, programming, budgeting, program delivery, maintenance, operations, etc)

⇒ Which asset management efforts will be emphasized?(these are aspects that ODOT will apply consistently; like integrated information systems, advanced applications in data acquisition, strategic application of asset management systems, tradeoff analysis across programs, consideration of benefits in a LCA framework, etc.)

⇒ What are some plans for using existing resources to advance the agency's use of asset management principles?

⇒ Comments will be organized in order to:

Assist working groups' communications with Staff about the implications of a preferred approach to adressing MAP- 21 requirement.

Assist working groups' communications with Staff about the implications as ODOT personalizes minimum requirements to better meet Agency needs.

Assist TAMP coordination as we consider what is supported by and/or will support TAM; and what resources are available and/or will be required.

Scan discussion comments, Scan takeaways, and other information will be summarized in a short report of the DOT Scan experience.

⇒ Purpose: The DOT scan is but one step in a series of activities that will provide principle players the framework to foster ODOT's approach for developing a performance-driven Transportation Asset Management Plan (TAMP) as MAP-21 requires.

Early opportunities to organize thinking with Executive/Top Managers affords the most effective planning and execution towards efforts.

⇒ Objective: Incorporating DOT scans as part of the Agency Self-Assessment, will provide added perspectives to our own discussions on the strategic direction TAM will take on, the TAMP Objective and Scope as it supports the agency TAM model, and ODOT's preferred approach to adressing MAP-21.

Because TAM/TAMP is such a broad-based initiative, participation is required from all areas managing transportation programs. The scan will offer exposure to best practices and lessons learned (about processes, tools, people,etc.)through others' journey to implementation.

⇒ Goal: Prepare for a valuable technology exchange.

Identify three-takeaways as a result of scan.

⇒ Helpful review materials as well as Utah "tidbits" will be offered by TAMP Lead.

## Approach

**TAM is...**
"Our business process: which aids in visualizing tradeoffs for today's decisions on impacts to tomorrow's performance"

Scan comments, Scan takeaways, and other information from agency self assessment is used to endorse a Final Draft of the ODOT TAMP Framework and appended Committee Structures.

ODOT TAMP Work Plan Framework and Committee Structures recieves approval.

## Outcomes

The focus for an Agency Gap Analysis is set.

ODOT moves into the agency GAP Analysis activities.