Ohio Department of Transportation | Phase 2

Performance Audit Summary

AUDIT SCOPE AREAS

- Key Performance Indicators
- Fleet Management
- Capital & Expenditures
- Bridge Management
- Pavement
- Maintenance Management
- Overhead Costs
- Strategic Business Intelligence

MAJOR TAKEAWAYS

Overall, ODOT lacks a strong, consistently applied, Department-wide approach to the use of data and information needed to make strategic decisions. We found common themes with data-driven decision making throughout the Department:

- ODOT lacks a FHWA compliant Bridge Management System which could be used for cost/benefit analysis.
- ODOT's maintenance management practices lack the level of data integration common in peer states.
- ODOT is unable to conduct unit cost analysis on basic maintenance activity.

STRATEGIC BUSINESS INTELLIGENCE

Conclusion: ODOT has historically collected the data needed to effectively manage its offices and divisions but has not taken a department-wide approach to strategic data management. The lack of a consistently applied, department-wide approach to strategic data management could make it difficult for ODOT to sustain progress into the future.

Recommendation 8.1: ODOT should enhance its business intelligence capabilities to allow Department leadership to manage organizational strategy with quantitative inputs, using data to drive key business decisions.

KEY PERFORMANCE INDICATORS (KPI)

Conclusion: Tracking KPIs will allow the Department to collect critical data that will allow for the optimization of projects and workload based on Departmental goals and objectives. Incremental changes can lead to significant operational gains, whether they be in the form of cost savings or increased functionality and ability to perform critical highway and bridge maintenance.

Recommendation 1.1: ODOT should implement performance monitoring through the use of well-developed performance indicators and key performance indictors applied at the appropriate level. Developing and managing appropriate performance measures could lead to efficiency improvements across all areas of ODOT's operations.

FLEET MANAGEMENT

This area was analyzed in prior audits. Rather than implement the recommendations from those prior audits, ODOT has removed policies and procedures and left the fleet management decisions entirely to the Districts.

Conclusion: We found that within several categories of vehicles, disposal age varies significantly from District to District, and sometimes within the same District. While ODOT's Central Office indicated that District Officials were best suited to make decisions related to fleet replacement, the variation in disposal age which exists indicates that this is not the case.

Recommendation 2.1: ODOT Fleet Central Office should implement policies for the replacement of fleet and equipment for ODOT Districts. The policies should be supported by a data driven methodology, and should identify when districts should dispose of equipment and what should be considered when evaluating if a replacement is necessary. Finally, ODOT should take care to make sure the policy covers all pieces of equipment, including all sizes of vehicles, mowers, and equipment with small engines, such as weed whackers.

CAPITAL & EXPENDITURES

Conclusion: ODOT uses both state and federal bonds for a variety of projects. The use of bond funding can be a useful tool and allows the Department to complete major projects in a timely manner. Further, because inflation related to construction costs often outpace regular inflation, using bond funding can reduce the overall expense related to projects. However, the Department could improve the use of bond revenues through strategic decision making.

Recommendation 3.1: The Department currently uses bond funding for routine maintenance expenses, which is can result in unnecessary interest charges. ODOT should reserve bonding for projects with a long useful life.

Recommendation 3.2: The Department should require debt affordability studies to gauge when it can afford to take on new debt prior to pursuing new bond issuances.

Issue for Further Study: Ohio may have up to $1.2 billion in outstanding highway bond debt at any given time. As of FY 2020, there was approximately $200 million in unused bond capacity. While there are many factors that the Department needs to consider before undertaking a project, ODOT should research if there are opportunities to take full advantage of the statutory borrowing limit and therefore finish more construction projects in a given year.

BRIDGE MANAGEMENT

Conclusion: Federal regulations set minimum standards related to bridge condition and maintenance. These regulations include the frequency and standards for bridge inspections. We found that Ohio's bridges are maintained in a safe and effective manner and that the cost per square foot is lower than peer states.

While ODOT is presently maintaining bridges in an effective manner, we found two areas that could result in increased efficiency and potential cost savings.

Recommendation 4.1: ODOT should implement and support a successful Bridge Management System (BMS) installation that meets the Federal Highway Administration (FHWA) minimum documented standards (23 CFR 515.17).

Recommendation 4.2: The General Assembly should revise ORC §5501.47 to remove the requirement that ODOT conduct annual inspections of all bridges and instead adopt a risk based methodology for bridge inspection, consistent with peer states and federal guidelines that allow for a risk-based 24-month inspection cycle for some bridges.

PAVEMENT

Based on information available from 2019, we determined that the condition of pavement maintained by ODOT is in-line with peer averages. However, the Department is doing so at a higher cost per mile compared to peers.

Conclusion: ODOT does not collect or deploy data in a manner which allows the Department to optimize pavement management practices. We identified three key areas for improvement in relation to this process.

Recommendation 5.1: ODOT collects data manually, which may not be as accurate or as effective a method as automatic data collection. ODOT should develop an efficient and effective pavement data collection plan consistent with best practices.

Recommendation 5.2: ODOT should adopt best practices for pavement projections. The Department currently fully projects expenditures five years in advance, and partially expenditures projects for up to 10 years. Moving to a longer time frame could improve pavement optimization.

Recommendation 5.3: ODOT should conduct a study to optimize project selection at the district level, including the maximum percentage match between PMS project recommendations and the timeframe Districts have to complete the projects.

MAINTENANCE MANAGEMENT

Maintenance activities represent a significant portion of ODOT's annual budget. However, the Department was unable to provide the data necessary to conduct unit cost comparisons. That is to say, ODOT could not tell us the cost to perform similar maintenance activities across Districts. Critical data needs to be maintained in a manner which allows for the effective management and monitoring of operations.

Conclusion: ODOT's current system maintenance management system, EIMS, is built on an industry-standard system that has been used successfully in peer states, but ODOT is not currently fully utilizing its existing technology. The Department recognizes the importance of an MMS but is currently pursuing the purchase of a new system rather than fully implementing the system they already purchased. An effective MMS would allow for the collection of data that could be used to conduct unit cost analyses to better allocate resources.

Recommendation 6.1: The Department should explore every opportunity to optimize their existing system before committing to the purchase of something else. And adopt best practices to leverage the existing maintenance management system tools, including better integration with the Department's other IT systems and use in work planning.

Recommendation 6.2: ODOT should ensure the maintenance management system captures the costs of maintenance activities and allows analysis of the most economical means for conducting highway maintenance.

Recommendation 6.3: ODOT should restart, strengthen and enhance the Maintenance Condition Rating (MCR) program.

OVERHEAD

As identified in Phase 1 of this audit, ODOT does not conduct cost/benefit analyses related to the use of outsourced labor. This may result in additional expenses related to labor and was further reviewed in the current audit.

Conclusion: The Department uses overhead calculations in other areas of operations, but not when determining the financial impact of contracted labor. Further, these decisions are left to District management with limited guidance from the Central Office.

Recommendation 7.1: ODOT should develop a standardized methodology for applying overhead to insourcing and outsourcing decisions, and assist the various departments in their application of appropriate cost-benefit analyses.