ODOT Funding Package Resource Library

Investment in Information Systems and Technology

Just like physical assets, ODOT owns and maintains digital assets (applications and technical infrastructure) that require regular maintenance over the course of their life. In many cases, though, digital assets age much more quickly than physical assets. This is due to the frequency of change in business requirements and the relentless pace of changing technology.

After an application reaches the 9-year mark without major maintenance work or replacement, it begins to be a productivity burden to an organization. Over time, gradual lack of alignment with business needs or current technical standards results in the need for manual workarounds, the inability to efficiently accommodate new business needs, barriers to cost-saving automation through integration of application services, difficulties maintaining support talent, and challenges with data transparency and interoperability.

Within ODOT's portfolio of applications, the average age of the 180 most business-impactful applications is 16 years. The good news is that approximately 30% of those applications are performing well and merit continued investment to maintain their performance. However, over 60% of ODOT's applications require significant modernization or wholesale replacement. For various reasons, they are beyond the point of providing the agency a reasonable return on maintenance investments, and at best, can be maintained to nominally satisfy business needs.

Benchmark analysis of ODOT's application development and support costs show the agency is 13% more cost efficient than peers. However, 95% of the department's IT budget is spent on running the business, and only 5% is spent on transformative work. ODOT is comparatively good at keeping our aged systems running and deploying tactical services to support new business needs. But lacking major investments to perform transformative modernization (such as was done with the DMV modernization project, OLIVR), the department is poorly positioned to maintain this level of productivity. We know from industry research that this is a challenging position to be in because applications beyond the 9-year mark see productivity declines of 2%-3% annually, crowding out investment for new, long-lived business capabilities and resulting in more tactical investments which, themselves, only add to support complexity.

There are several key programs included in our Information Systems funding request. They are as follows:

Accounting, Cost Management, Asset Management and Reporting

The Transportation Environmental Accounting Management System (TEAMS), implemented in 1985, is ODOT's consolidated financial, cost accounting, and asset (e.g., trucks and maintenance equipment) management system. This system runs on an antiquated and aging COBOL mainframe system. As a result, modification of this application, such as implementing new business processes, is virtually impossible. Replacing this system is critical to ODOT's long-term success. A holistic solution that provides the department with a modern, transparent, efficient, accessible,

and decision-making-centered data management system with revised data governance processes will result in less manual and labor-intensive work, a higher degree of business certainty, improved system security, and better overall reporting.

<u>Crash Data Systems and Analysis</u>

The department's Crash Data System is the primary storehouse for roadway network crash data. This data informs an understanding of which roadways and corridors in the state system require targeted project scoping and safety enhancements. Unfortunately, the system is built on aging technology that prevents the implementation of any meaningful improvements. Currently, it takes up to 18 months to analyze the data from the system due to the manual nature of the collections process. This delay results in unnecessary and unacceptable delays in project scoping and programming while putting Federal project funding and system-wide safety improvements at risk.

<u>Federal Reporting Systems</u>

The Federal Highway Administration (FHWA) has directed state transportation agencies to report all jurisdictional (e.g., state, county, and city) roadway and network information. This information includes such items as highway characteristics and elements, the location of Americans with Disabilities Act (ADA) compliance construction elements, and the condition of assets such as bridges, culverts, and retaining walls. Unfortunately, ODOT's current system, TransInfo, does not enable capture of all critical data and requires workarounds and the use of stand-alone applications. A seamlessly integrated platform will enable the department to more effectively analyze and report on the conditions of all of Oregon roadways thereby improving decision making, planning, maintenance, engineering and construction activities, while enabling the delivery of solutions that are cost effective, timely, and sustainable.

<u>Network Infrastructure, Cloud-Based Systems, and Cybersecurity</u>

ODOT must embark on a continuous modernization strategy by ensuring that applications are designed for agility, are technically current, and continue to deliver value to the department over time with a slower aging process. The agency will do this by building and leveraging application service ecosystems and using modern application deployment and development models that promise more capability and lower support requirements over time.

Investments will be focused on the applications that are most critical to the agency, but those investments will be made within the context of a comprehensive portfolio strategy. This modernization effort, consistent with State of Oregon direction, will be "cloud first." This direction promises better stewardship of taxpayer dollars. In some cases, modernization will involve adopting a vendor-supported cloud-based application, in others, it will take the form of application capabilities built up from modern cloud component services.

Finally, all of this will require significant investments in network and cybersecurity. Primary among those is a large investment in zero-trust framework. "Zero-trust" is an operating model for the 21st century that provides users access to what they need, and only what they need. Currently, all

Federal agencies must implement zero-trust capabilities, and many states have already followed suit. The State of Oregon is committed to implementing a "zero-trust" operating model.