

JOINT TRANSPORTATION RESEARCH PROGRAM

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Crawfordsville Technical Services Asset Management Workflow Improvement Project

Introduction

The Indiana Department of Transportation (INDOT) is divided into six districts, with district offices located in LaPorte, Fort Wayne, Crawfordsville, Greenfield, Vincennes, and Seymour. Each district has a Technical Services Department who, with support from INDOT Central Office staff, are responsible for managing INDOT assets and providing technical support to the district (including capital programs, maintenance, construction projects, and others). They also provide input to statewide asset management and capital programs. Each Technical Services Department has assigned asset owners who are responsible for the management

of assets such as roadways/pavement, bridges, large culverts, small culverts, traffic/safety, mobility, and (in the case of Crawfordsville) drainage.

The researchers of this project were chartered to work with the Technical Services Department in the Crawfordsville District by using Value Stream Mapping (VSM) techniques to identify and recommend improvements to the asset management workflows.

Findings

The most significant issue identified by the Crawfordsville Technical Services project team is the unbalanced workload throughout the year and the concentrated



INDOT Crawfordsville district office.

time demand in the fall to support the Annual Call process. This time demand hinders the effectiveness of the process and the quality of the results.

While numerous actions have been recommended, and some piloted, those with the highest impact will address this fundamental issue.

1. Implement early scoping on select projects.
 - Use the Asset Management 20-Year Plans to identify low-risk projects which can have scoping started up to a year ahead, thereby leveling the workload for the asset managers/owners
2. Increase on-call consulting resources.
 - Increase both the budget and the number of on-call consultants to enable an early start to scoping.
3. Implement a deadline for changes to the Annual Call process and scoring system.
 - This deadline will limit increases to the already high time demands late in the year.

Implementation

VSM techniques were used to analyze the following four workflows of the Crawfordsville Technical Services Department's asset management:

1. Annual Call process,
2. maintenance work planning process,
3. discretionary funding process, and
4. systemic funding process.

For each workflow, the Crawfordsville Technical Services team developed a current state Value Stream Map (VSM) and analyzed it for improvement

opportunities. Preliminary results of this analysis were reviewed by key INDOT Central Office personnel and Technical Services personnel at four of the other five districts. Feedback from these reviews, along with the Crawfordsville team's analysis and insights, were used to generate 24 recommendations for improvement (17 actions internal to Crawfordsville Technical Services and seven external actions to Crawfordsville but within INDOT).

The project team also developed future state VSMs that depicted the projected workflows if the recommended actions were implemented.

The current state VSM was analyzed extensively, yielding numerous opportunities for improvement, including those listed above. Recommended actions were developed, and select key actions were implemented on a pilot basis. Prototype Excel models were developed to enable the analysis, pilot implementation, and simulate the desired outcomes in the future state VSM.

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