

CASE STUDY



Montana Department of Transportation Saves Time and Standardizes Estimation Processes with AASHTOWare Project Estimation™

CHALLENGE ▼

The Montana Department of Transportation (MDT) was using three disparate systems to produce standard construction cost estimates, a cumbersome and time-consuming process that didn't always produce the most accurate estimate.

SOLUTION ▼

MDT implemented AASHTOWare Project Estimation. During the initial development of AASHTOWare Project Estimation, MDT was heavily involved and worked with the Technical Committee on Cost Estimating (TCCE) to determine the scope of the software.

RESULTS ▼

Implementing this module enabled MDT to standardize their estimation process and produce accurate estimates based on real-time data. MDT now sees increased productivity and usage in both the Design and Construction departments thanks to the ease of creating an estimate and tools like regression and bid-based pricing. Their design department is also able to focus more on design tasks now that they can produce estimates with the click of a button.

"We were scattered in how our estimating was being done. The biggest thing we fixed was a lack of consistency and uniformity across our organization."

Chad Richards

Former Engineering Cost Analyst, Montana Department of Transportation

Interested in implementing AASHTOWare Project Estimation?

Contact your Infotech Account Manager or visit aashtowareproject.org/apr-est for more information.

Background

JOINT DEVELOPMENT PAVES THE WAY ▼

A core benefit of AASHTOWare software is the ability to collaborate with other states for joint development efforts. This process allows agencies to pool their resources to tackle issues that multiple states are facing. By working alongside other states and the TCCE, MDT was one of the leading agencies in producing the initial scope for AASHTOWare Project Estimation. By taking initiative and collaborating with agency peers, MDT was able to support the development of a module that would solve their biggest estimation challenges.

IN THIS CASE STUDY ▼

Kathy James, *Engineering Systems Supervisor*

Lisa Durbin, *Engineering Operations Bureau Chief*

Chad Richards, *Former Engineering Cost Analyst*



Issues

CREATING UNIFORMITY FOR ESTIMATION PROCESSES ▼

Before implementation, MDT had three systems for estimation: an average bid price Excel spreadsheet with macros, an Oracle database that stored bid tabs, and the Infotech® Estimator™ product. The lack of uniformity in process meant that results were scattered and didn't always reflect an accurate project estimate. Estimates that never went through any additional steps beyond average bid pricing would be off, which could impact the entire construction budgeting process. By formalizing the estimation process in one system, MDT hoped to create consistency and overcome turnover and different knowledge levels among the staff.

UPDATING BID TABS FOR ACCURATE DATA ▼

"It was a very manual process to get bid tabs updated... so it wasn't always real-time, current data." - Kathy James

The bid tabs that fed into the Excel spreadsheet used by MDT were updated every six months - "just enough time to forget how to do it," said Richards. That meant the data wasn't always the most up to date, nor did it benefit from the historical project records stored in AASHTOWare Project. Obviously, old data does not produce the most accurate estimates.

PRODUCING QUALITY DESIGN ESTIMATES ▼

While MDT's design staff is responsible for creating estimates, it's not their primary function. As such, introducing a tool that would allow them to push a button and create an estimate without a lot of legwork would produce quality estimates without substantial user input.

"With bid tabs, we weren't getting the benefit of the history of all the projects that we do now."

Kathy James
Engineering Systems
Supervisor



Implementation

THE PROCESS

MDT handled implementation internally, using the backbone of their previous AASHTOWare Project Preconstruction™ implementation to inform the process for the latest module. Richards spent roughly six months coordinating with James, Durbin, and other staff members to determine how they wanted to configure the system. Their biggest challenge was coming up with a reporting system for estimation reports, with James and her team finding a solution to produce a PDF report.

EXTERNAL CONTRACTOR ACCESS

MDT rolled out internal access a year prior to adding external users to the module. To add external contractors, the team worked with the state IT department to grant

an exception for external access. Then, James and her team set up separate external accounts using a different Active Directory and used the non-agency estimation user role to assign accounts to contractor users. The final piece was a vendor access security component, set up so vendors can only see cost estimates that they're tied to directly.

IMPLEMENTING DIFFERENT ESTIMATION METHODS

The AASHTOWare Project Estimation module offers a wide range of estimation methods that can often be overwhelming to new agencies. MDT narrowed their implementation scope by targeting the method where they had the most history: bid-based. Richards gradually added parametric estimation to the typical section, focusing on core functionality to expedite the process.

Results

PROCESS UNIFORMITY

Despite a few issues here and there with people not reading the instructional manual, MDT introduced a uniform estimation process with AASHTOWare Project Estimation.

“By and large, it’s fixed a lot of the issues we were having and it has led to better uniformity.” - Chad Richards

INCREASED ESTIMATE ACCURACY

By combining a standardized process with access to real-time bid tab information, MDT can produce more accurate estimates.

“It has helped out in a lot of instances where our estimates were off because they never went through any of the additional steps beyond average bid prices.” - Chad Richards

IMPROVED DESIGN ESTIMATES

The design staff at MDT are able to focus on their main responsibilities while easily producing accurate estimates at the push of a button.

“Giving [Design] a better tool that requires less input from the user to deliver a final end product has helped us dramatically.” - Chad Richards

TOOLS FOR CONSTRUCTION

As an unforeseen benefit, MDT finds that more people on the Construction side of the agency are using tools in AASHTOWare Project Estimation that previously weren't available to them.

“We’re seeing more people on the Construction side using some of the tools when they’re doing change orders. They used to use a clunky Oracle form that’s just a listing of the contracts and quantities, but now with [AASHTOWare Project] Estimation, they can do the regression pricing that they couldn’t do before.” - Lisa Durbin

Advice

Is your agency interested in implementing AASHTOWare Project Estimation? The team at MDT offered the following advice:

"Spend the time analyzing your use case and how the system will fit into your process, or how you need to modify the process to make it work with the system."

Chad Richards

Richards also makes the point that the latter is far easier than the former, especially when upgrades roll around:

"I tried to implement the system as out-of-the-box as possible and manipulate our process to conform with the software but still meet our needs, and I think that has probably been good for us. I always warn people not to go down the path of full configurations because it's going to lead to nothing but problems in the end. It makes it hard to find issues when the systems are all different."

James and Durbin seconded his advice, noting that

while configurations and customizations are a useful tool of AASHTOWare Project, it doesn't bode well to rely on them too heavily:

"Don't have configurations in one module that you don't have in another. It just throws you for a loop. Figure out how to use the system to do something, not how to configure it to do something."

Lisa Durbin

"From an implementation viewpoint, you don't want to get trapped in configuring things too much, you can really slow things down if you try and make it exactly how it used to be. Step outside the box and see what functionality is available." - Kathy James

Finally, both James and Richards highlight the importance of figuring out internal and external roles and access ahead of time

and working with the state IT department early to create exceptions:

"From an IT perspective - are they going to have external users? How are they going to set them up to access the system, depending on what their state IT requirements are? Factor that IT set-up time into the implementation schedule because there could be some roadblocks there."

Kathy James

"We spent a huge chunk of time talking about groups and roles. One of the biggest pieces is determining your securities and how are people going to flow through the process." - Chad Richards

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