

## CASE STUDY



# Collaboration & Connectivity: WVDOH Sets the Standard for AASHTOWare Project™ Implementation

## BACKGROUND ▼

In the early 1980s, West Virginia was one of the original three states that pooled funds to create AASHTOWare Project BAMS/DSS™, which became the first piece of AASHTO software. That initial investment underscores a decades-long commitment to being at the forefront of transportation innovation.

As the first state to implement every single AASHTOWare Project module and mobile application, West Virginia is setting the standard for maximizing the full potential of the software. How did they do it? By embracing a no-nonsense approach to collaboration that focuses on the collective needs of West Virginia over the needs of individual departments.

## SOLUTION ▼

The West Virginia Division of Highways (WVDOH) uses:

- » AASHTOWare Project Estimation™
- » AASHTOWare Project Bids™
- » AASHTOWare Project Preconstruction™
- » AASHTOWare Project Construction & Materials™
- » AASHTOWare Project Civil Rights & Labor™
- » AASHTOWare Project Data Analytics™
- » AASHTOWare Project Mobile Tester™
- » AASHTOWare Project Field Interviewer™
- » Infotech Mobile Inspector®
- » AASHTOWare Project Hosting

"There's no way to capture all of the efficiencies, the benefits, the cost savings...you give me a dollar value, and I can justify it."

**John Taylor,**

Consultant and former Assistant Director,  
WVDOH

## RESULTS ▼

From eliminating the need for an onsite document store to simplifying time-consuming reports, there are many module-by-module benefits that we'll explore throughout this case study. While these benefits stack up into considerable time and cost savings, WVDOH remains focused on the big picture and long-term outlook for the state. By implementing every AASHTOWare Project module in concert with each other, they experience:

- » One single source of data in one system with an ever-growing historical record of insights to drive informed decision making
- » Improved transparency and collaboration with contractors, consultants, auditors, investigators, and other stakeholders
- » An increased focus on connectivity and the elimination of siloed data and departments
- » Streamlined reporting and compliance with federal requirements



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# The connective thread

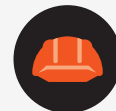
## running through WVDOT

In this case study, we will talk frequently about connections. Primarily technical connections - the kinds that run between software modules and administrative processes. But first, it's important to highlight the connections between the people who work at WVDOT. The first sign of this connectivity is in the logistics of the room during our interview; the majority of participants are at one conference table together. There's a palpable sense of camaraderie present in the banter and historical recollections that take place during the conversation.

Among the participants is John Taylor, the "retired" consultant with decades of experience, still clearly a vital part of the organization. There's Scott Abbott, who introduces himself by referencing Marshawn Lynch's famous "I'm just here so I don't get fined" statement - and then goes on to contribute essential information throughout our discussion. Russ Kees, the current EUD and Contract Management Coordinator, brings his sage perspective to every module we discuss.

David Ballard, Dan Brayack, Cliff Yuill - everyone participating in

### CASE STUDY PARTICIPANTS



- » **Russ Kees**, Assistant Directors of Contract Administration
- » **John Taylor**, Consultant and former Assistant Director
- » **Dan Brayack**, Assistant Director of Materials
- » **Scott Abbott**, Integrated Construction Technologies Supervisor
- » **David Ballard**, Assistant Director of Civil Rights Compliance
- » **Cliff Yuill**, Senior Systems Analyst and Onsite Support, Infotech

this case study represents their business area but spoke for and about DOT as one entity. There's a difference between working together and collaborating, and it's through the latter that WVDOT is able to achieve so much.

At one point, everyone on the call commends Taylor for his role in promoting

collaboration across the agency. His response serves as a practical, unofficial ethos for how WVDOT operates:

"I appreciate the kind words, but I always just wanted to get it done. If there's an issue, let's resolve it and move on."

## Investing in the development and evolution of AASHTOWare Project

WVDOT has a long history with AASHTOWare Project, dating back to the 1980s when they first pooled funds alongside Kansas and Texas to create AASHTOWare Project BAMS/DSS™.

In the decades that followed, they used other AASHTO software - PES/LAS, Site Manager, etc. - but today, they stand as the only agency to have implemented every modern,

web-based AASHTOWare Project module and mobile application. Their long-term investment in AASHTOWare Project is motivated by a commitment to progress and a sense of ownership, having been directly involved in the development and testing of so many solutions.

"Back in the day, we were a beta tester for Site Manager," said Taylor. "We needed to get AASHTOWare Project fully implemented, because once we were there, we would

have a greater impact on where AASHTOWare is going in the future, because we're experiencing what is occurring now."

That's a point that Taylor and the WVDOT team drive home throughout the discussion: the member agencies, the DOTs own this software. Use it, brand it, and influence where it goes. Of course, each implementation is driven by its own unique challenges and objectives. Let's dive into those on the following page.

## MODULE

# AASHTOWare Project Bids

IMPLEMENTED 2008

## CHALLENGE ▼

A time-consuming, paper-based process required physical bid collection and lengthy bid openings with 100+ people in a conference room waiting for results. Contractor inquiries also ate up time during the bidding process.

“I would have to drag an old wooden box out on the curb and contractors would drive by and drop their proposal and estimates into this lockbox.” - John Taylor

## GOALS ▼

- » Eliminate the paper-based bidding process and physical bid openings
- » Simplify the review and identification of legal/irregular bids
- » Streamline contractor communications during the bidding process

## RESULTS ▼

“It’s a much more smooth and understandable process for everyone involved and it’s much more efficient as well.” - Russ Kees

“We implemented the question and answer feature and once the project is advertised, no one from the public or contracting can call anyone at DOH and ask a question, they have to ask a question through the software... that is the greatest tool ever invented.” - John Taylor

## MODULE

# AASHTOWare Project Preconstruction

IMPLEMENTED 2010

## CHALLENGE ▼

Paper reports and files took up storage space and required DOH staff to operate a storefront where contractors would come to buy plans and specs. Additionally, WVDOH needed a platform to establish the digital phase of a contract and tie it into the state Enterprise Resource Planning (ERP) system.

“If you can picture a room, contractors would come in, they’d ring this little old bell, that meant someone was here to buy a set of plans... we had a whole floor dedicated just to selling these plans.” - John Taylor

## GOALS ▼

- » Eliminate the need for a physical storefront and associated manpower
- » Establish the digital phase of a contract
- » Ensure all project data is contained in one place for everyone to view

## RESULTS ▼

“By moving over to Preconstruction, everything is within the module now. It helps provide a history, basically, of everything we do with a contract.” - Russ Kees

## MODULE

# AASHTOWare Project Construction & Materials

IMPLEMENTED 2019

## CHALLENGE ▼

WVDOH previously relied on a home-grown system for managing construction and materials, and then AASHTOWare Project SiteManager. While these solutions got the job done, they didn’t offer the flexibility and connectivity of the web-based AASHTOWare Project Construction & Materials.

## GOALS ▼

- » Adopt a streamlined, modernized solution for construction and materials management
- » Increase transparency and efficiency with web-based system that’s open to contractors and industry stakeholders
- » Incorporate purchase orders into AASHTOWare Project to quickly meet work order needs
- » Track the proper materials processes to get federal funds
- » Eliminate the hurdles to project finalization by instituting requirements in the system

## RESULTS ▼

John Taylor:

“We’re giving contractors access, consultants access, we’re giving contractors the ability to approve change orders and view estimates so you don’t need to send him that each period. There are a lot of little things that if you add those up across the state, you’re talking about a tremendous time savings.”

“We’re putting purchase orders in AASHTOWare Project to track the materials on it, and as long as you’re doing that and following the proper procedures, then you can get federal funds.”

Dan Brayack:

“I was running an errand one day and I got a message that something was extremely critical. On my cellphone, I went in there and did the thing they needed in the parking lot. So, that’s pretty darn handy.”

“Our upper management said we want to have samples authorized after a certain time period, so I got together with my developers and it’s not ‘can we do this?’ it’s ‘what’s the best way for us to do this?’”

“In our previous system, we couldn’t hold payment if we didn’t get what was required from the contractor. Now that we’re requiring that information... what used to be our biggest hurdle for finalization, we get those all the time.”

## MODULE

### AASHTOWare Project Data Analytics

IMPLEMENTED 2019

#### CHALLENGE ▼

WVDOH was one of the original states that funded BAMS/DSS in the 1980s. As time went on, fewer and fewer people were able to operate

and extract insight from the outdated software. The agency needed a system that was easier for anyone to use that pulled data from the entire AASHTOWare Project ecosystem.

#### GOALS ▼

- » Introduce a modern software solution for data analysis
- » Leverage a system to analyze and award bids and respond to FOIA requests
- » Provide access to data insights across all AASHTOWare Project modules

#### RESULTS ▼

“The ease of providing reports to our upper management helps them make more effective decisions.” - Scott Abbott

“We use Data Analytics to award every job we have. When auditors come in, we use Data Analytics. If there’s a FOIA request, we use Data Analytics... The more data that gets in that unified system, the better we can see that in the future, everything is going to tie together. Some cities have reached out to our Data Analytics personnel and said ‘hey, we want to pave these streets, we want to get some market numbers, can we get those numbers from your Data Analytics?’ So that occurs, too.” - John Taylor

“Because of the unified database between all of the modules, they are getting enough data in Construction & Materials that they can start analyzing other stuff using Data Analytics.” - Cliff Yuill

## MODULE

### AASHTOWare Project Estimation

IMPLEMENTED 2021

#### CHALLENGE ▼

Differing estimation methods led to disparities and inaccuracies between estimates and bid lettings across the 10 WVDOH districts.

#### GOALS ▼

- » Ensure all participants are using the same estimation methodology for more accurate estimates
- » Amass and leverage data over time to be able to estimate projects with increasing accuracy and confidence over time
- » Drive informed, data-based decisions with the long-term State Transportation Improvement Program (STIP) in mind

#### RESULTS ▼

“It allows for more accurate estimates.” - Russ Kees

“What’s key to this is the long-term goal. If I want to build a bridge from here to Florida, you can rapidly go to this software and if you know the mileage and how many lanes you want, you can get an estimate.” - John Taylor

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## MODULE

# AASHTOWare Project Civil Rights & Labor

IMPLEMENTED: 2022

## CHALLENGE ▼

A manual, paper process for everything civil rights and labor-related meant that the agency often wouldn't find out about things like payroll issues until it was too late. These issues often led to increased federal scrutiny. Additionally, the bi-annual Uniform DBE Report was incredibly time-consuming to compile.

## GOALS ▼

- » Be more proactive than reactive with civil rights and labor management
- » Streamline the process of compiling the Uniform DBE report
- » Require contractors to submit timely paperwork to avoid federal scrutiny

## RESULTS ▼

"With implementation, it's allowed us to go completely paperless. It's a centralized process now, it allows us to be proactive and see things in real-time. Mistakes, errors, whatever can be corrected on the spot with no delay.

It's making the contractors do what they're supposed to do, when they're supposed to do it. We were constantly getting dinged by federal auditors for payrolls not being properly reviewed. This automates that process and takes care of that.

Before Civil Rights & Labor, it took six, eight, twelve weeks to get all of the data to compile the Uniform DBE report. With Civil Rights & Labor, the data is there, we can pull the report and it is accurate and it is instantaneous." - David Ballard



## Embracing statewide connectivity with AASHTOWare Project Mobile Applications

WVDOH adopted applications like Mobile Inspector, Mobile Tester, and Field Interviewer to get away from scratch paper and notebooks as the primary tools for activities like field or materials data capture. Now, they can capture inspection data in the field on mobile devices and feed it directly into AASHTOWare Project. But what about the many areas in West Virginia where there is no internet connectivity? That's where Starlink comes into play.

"West Virginia has four trucks with mobile Starlink on top. There's a lot of places with no service and some places where you can't even use a satellite phone. So we've started this pilot project by putting these Starlink systems on top of these trucks and taking them out to projects and other rural areas that don't have service," said Taylor.

# Moving forward with AASHTOWare Project

Now that WVDOH is fully implemented, the agency's goal is simple: continue to move forward with product enhancements. West Virginia was recently awarded as one of the leaders in agency-funded enhancements - at one point, Brayack pulls the award off a shelf behind him and offers, tongue-in-cheek, to rotate it around the office - and they will continue to push for advancements that meet the state's needs.

The agency will also continue building up its historical record of data in AASHTOWare Project to inform the long-term vision of the agency. Kees mentions that the STIP seems to change daily, but that WVDOH can

adapt thanks to a focus on collaboration, transparency, and information management.

"We're giving folks transparent access to the data so they can put it in their asset management system to make those data-driven decisions down the road," he said.

"Because we're transparent with AASHTOWare Project, the data is getting more and more prevalent. Every day, we make better business decisions based on the data we have in our system.

Ballard also touched on the goal of improving Title VI reporting with the federal government to

ensure an equitable distribution of funds throughout the state.

"If we can get in AASHTOWare Project Civil Rights & Labor and say where the money's going, where the road's getting paved, where the grass is getting cut, where the trees are getting trimmed - is it all in affluent areas, is it in disparate areas, or is it being evenly done and evenly distributed?" he said.

Because of the lack of silos, collaborative environment, and progressive mindset at WVDOH, the team is well-prepared for whatever the future brings.

## ADVICE TO OTHER STATES

What advice would WVDOH give to other states seeking to maximize their use of AASHTOWare Project?

Embrace solutions that work for every project, every time

"Can you do it for a thousand projects? We hear from competitors all the time, but when we get to talking to them, they can design software to meet that one project but they can't design it to meet the thousand projects we do every year." - John Taylor

Taylor makes the point that AASHTOWare Project is designed to support all of the project management needs of a transportation agency. He advises other agencies to properly vet competitor pitches to ensure their solutions can meet the needs of the entire state because, chances are, "they can't do it."

## Go hosted as soon as possible

“Whenever we run into issues, Infotech jumps right on it.” - Dan Brayack

AASHTOWare Project cloud hosting provides support to agencies for everything from module updates to security. For WVDOH, it allowed them to avoid Office of Technology requests and work directly with Infotech to ensure updates happen as soon as possible. “Today, we just call Infotech up and schedule it,” said Taylor. “I don’t need to go to the Office of Technology and make sure someone is available.”

## Break down your silos

“You are all there for one purpose, no matter what module you work in. Work together, break down the silos, and get the communication going.” - Cliff Yuill

Silos do not exist at WVDOH, and that level of collaboration is a key part of what enables their AASHTOWare Project success. Individual departments may have individual goals, but everyone is working towards the same mission: supporting the transportation needs of the state. Just like AASHTOWare Project modules work best in conjunction with each other, agencies can get more out of the modules when they break down their own departmental barriers.

## Embrace your ownership of the software

“This ain’t an Infotech software... this is AASHTO, you already own the software. Why don’t you brand and use your own software?”  
- John Taylor

Taylor emphasizes that the states that license AASHTOWare Project have the opportunity to brand it to their needs and even influence the direction of the software. As one of the leaders of agency-funded enhancement TMRs, WVDOH is very familiar with the impact an agency can have when it embraces its role in the software development process.



**As the conversation with the WVDOH wraps up, a question is posed - would they have done anything differently?**

And while there are things that could have been approached differently here and there, the answer is a resounding no.

“We think we’re successful because we’re here. We did the implementation order out of need and necessity. Yeah, there were some bumps along the way, but we’re here,” said Taylor.

“Part of being where we are now is we learned what we did wrong and we fixed it,” echoed Brayack.

And of course, there will always be more to fix. Brayack mentions a few test data sheets that they’d like to be paperless. Taylor mentions getting everybody on the same page with the Estimation module. Little things - the kind of issues that are no match for the collaborative foundation that WVDOH has built.