# e-Construction and Partnering Innovation Matrix By State

NOTE: Information in this table was obtained from publicly available sources (e.g. internet search and presentations). Information was last updated 6/30/2019. Any corrections or updates may be sent to Kathryn.Weisner@dot.gov

**Legend**
**ACM** Alternative Contracting Methods
**CPP** Construction Partnering Program
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**EPI** Innovation being Evaluated, Piloted, or Implemented, but no product was specified in the literature.

| State or U.S. Territory | Bid History Analysis | Bid Letting Management and Estimates | Bid Preparation and Analysis | Collaboration Portal | Construction Management System | Digital Signatures | Document Management System | Electronic As-Builts (GPS/GIS/PDF red-lining) | Electronic Bidding and Bid Bonds | e-Ticketing | Lab Inventory and Materials Management System | Mobile Devices for Inspection | Partnering | Project Management System | Project References (e.g. plans; standards; manuals) | Quantity Measurements (real-time verification) | Fleet Management | Queries and Reports | Virtual Meetings | Auto-Material Tracking (RFID/Bar-Coding) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alabama | AASHTO BAMS/DSS | AASHTO Preconstruction and Estimator | AASHTO Expedite | Investigating Solutions | Custom Program (1) | Paper-based Methods | Investigating Solutions for Construction (2) | ArcGIS Collector; Unmanned Aircraft Systems | Bid Express | Earthwave Technology FleetWatcher (3) | Custom Program (1) | iPads | NPA | Oracle P6 | Falcon DMS | Unmanned Aircraft Systems (4) | Equipment Watch | NPA | NPA | EPI | |
| Alaska | AASHTO BAMS/DSS | AASHTO Preconstruction | AASHTO Bids | NPA | AASHTO CRLMS and SiteManager (1) | NPA | Custom EDMS (2) | NPA | Bid Express | NPA | NPA | Microsoft Surface Pro | ACM; CPP | NPA | NPA | NPA | NPA | NPA | NPA | EPI (3) | (1) Alaska is in the process of implementing AASHTOWare Project Suite as follows: Phase 1: Preconstruction; CRLMS; Bids and Bid Express by July 2018. Phase 2: Const. & Materials by July 2018-July 2019. Replaces SiteManager. Phase 3: Estimation by July 2019-July 2020. Phase 4: BAMS/DSS by July 2020-January 2021. (2) Custom EDMS for storm water documents and permits. (3) Evaluating RFID/bar code technology to track materials. |
| Arizona | NPA | NPA | AASHTO Expedite | Custom Program (1); eBuilder (2) | Custom Program (1); eBuilder (2) | NPA | Custom Program (1) | NPA | Bid Express; SurePath (3) | NPA | Custom Program (1) | Citrix; Windows Tablets | ACM; CPP | NPA | NPA | NPA | NPA | NPA | NPA | EPI | (1) Custom CMS with multiple modules called FAST used for electronic contracting management; partnering evaluation; estimated engineering construction costs; project tracking; repository for archived documents; system to track compliance for DBE certification and payroll reporting; etc. Lastly; the PEN module is used for entering daily diaries. (2) eBuilder and a custom program called ELVIS (short for Engineering and Laboratory Vital Information System) on alternative delivery projects as a project collaboration portal and construction management system. Evaluating RFID/bar code technology to track materials. (3) SurePath is used to verify bid bonds. |
| Arkansas | AASHTO BAMS/DSS | AASHTO Preconstruction and Cost Estimation | AASHTO Bids | eBuilder | AASHTO SiteManager (1); eBuilder (2) | Doc Express | Doc Express; eBuilder (2) | NPA | Bid Express; SurePath (3) | NPA | NPA | Windows Tablets | NPA | NPA | eBuilder | NPA | NPA | Custom Program (4) | NPA | EPI (5) | (1) ARDOT plans to implement the AASHTOWare CRLS, but have not done so yet. (2) eBuilder is being used for the alternative delivery projects; but ARDOT uses Doc Express as the official filing cabinet for design-bid-build construction projects. (3) SurePath to verify electronic bid bonds. (4) State also has two custom applications; one is called SARS to run queries and reports directly from SiteManager; and the second one is called COGS to manage change order documentation and approvals. Their SiteManager program is heavily customized to accomodate reporting needs. (5) Arkansas uses bar codes to track certain assets (e.g. signs). |
| California | AASHTO BAMS/DSS | Evaluating Products (1) | AASHTO Expedite | NPA | Evaluating Products (1) | NPA | Falcon DMS (2) | NPA | Bid Express; SurePath (3); Surety 2000 (3) | NPA | NPA | Headlight (4); PlanGrid (4) and iPads | ACM; CPP | NPA | NPA | NPA | NPA | NPA | NPA | NPA | (1) Evaluating AASHTOWare Project Pre-Construction, Construction & Materials, and Civil Rights and Labor. (2) Falcon DMS is used for managing active structures documents; specifically engineering drawings; email; Microsoft Office; raster images and other types of documents. State also uses it for document retrieval system (e.g. roadway as-built plans; right-of-way; survey field notes; as-built structure plans; accident incident reports; etc.). (3) SurePath and Surety 2000 for verifying electronic bid bonds. (4) State is also piloting Headlight and PlanGrid on some alternative delivery projects. |
| Colorado | AASHTO BAMS/DSS | AASHTO Preconstruction(1) | AASHTO Bids | ProjectWise; SharePoint | AASHTO SiteManager (1) | Adobe Digital Signatures (2) | ProjectWise; SharePoint (3) | NPA | Bid Express; SurePath (4) | NPA | NPA | Headlight (5); PlanGrid (5) and Windows-based tablets | ACM; CPP | NPA | NPA | NPA | NPA | NPA | NPA | NPA | (1) Evaluating AASHTOWare Project pre-Construction, Construction and Materials, and Civil Right modules. (2) State does not have a consistent policy for e-signatures, but documents are signed electronically with Adobe ID. (3) Initiative to create field documentation forms using InfoPath and to store them in SharePoint. (4) SurePath is used for verifying bid bonds. (5) State is piloting several products to enable mobile inspection such as Headlight and PlanGrid. |
| Connecticut | AASHTO BAMS/DSS | AASHTO Preconstruction and Estimator | AASHTO Expedite | Bluebeam Revu | AASHTO SiteManager | DocuSign (change orders) and GlobalSign (internal documents) | ProjectWise | Bluebeam Revu | Bid Express | NPA | NPA | Mobile Inspector and Dell Tablets | NPA | NPA | NPA | GPS Rovers with Trimble Business Center | NPA | NPA | NPA | NPA | None |
| Delaware | AASHTO BAMS/DSS | AASHTO Cost Estimation and PES/LAS | AASHTO Expedite | SharePoint | Unifier | Paper-based Methods | ProjectWise | Paper-based Methods | Paper-Based Methods | Planning Pilot Project (1) | Multiple Individual Databases | iPads | ACM; CPP | Oracle P6 | Paper-based Methods | Paper-based Methods | Paper-based Methods | Paper-based Methods | Unifier | Skype for Buisness (2) | Paper-based Methods | (1) Evaluating e-ticketing technology. (2) Has been used in a few instances. Office staff has Skype for Business on their computers. |
| Florida | AASHTO BAMS/DSS | AASHTO Preconstruction | AASHTO Bids | ProjectSolve; Bluebeam Revu | AASHTO SiteManager (1) | IdenTrust | Hummingbird (2); ProjectSolve (3) | NPA | Bid Express; SurePath (4) | Earthwave Technology FleetWatcher (5) | NPA | Autodesk BIM 360 Field; Citrix; iPads | ACM; CPP | NPA | Hummingbird; ProjectSolve (2) | NPA | NPA | NPA | NPA | EPI (6) | (1) FDOT is planning to migrate to AASHTOWare Project Construction and Materials in July 2019. (2) Hummingbird is used for document storage inside of the firewall. (3) Use ProjectSolve as their collaboration platform outside the firewall; but have an electronic document management system for final archival of project files for record retention purposes. (4) SurePath is used for verification of electronic bid bonds. (5) Piloting e-ticketing technology. (6) Piloting RFID/bar code technology to automatically track materials. |

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| Georgia | AASHTO BAMS/DSS | AASHTO Preconstruction and Cost Estimation | AASHTO Bids | ProjectWise; e-Builder (1), and Custom Program (2) | AASHTO SiteManager | DocuSign (3) | ProjectWise; e-Builder (1), and Custom Program (2) | Bluebeam Revu | Bid Express; SurePath (4) | Working on Specifications | NPA | HP Tablets | ACM, CPP (5) | Custom Program (6) | ProjectWise (7); e-Builder (7); Web (7) | Paper-based Methods | NPA | Custom Program (6) | Video Conferencing; GoToMeeting | Paper-based Methods | (1) e-Builder is used for design-build and P3 projects only. (2) Contract Administration Tracking System (CATS) is used to manage contract documents signed electronically. (3) DocuSign is used to execute contracts and change orders. The Software is integrated with a custom financial application. (4) SurePath is used for verification of electronic bid bonds. (5) Formal partnering program in place for P3 projects and large design-build. Currently developing a partnering program for design-bid-build. (6) GDOT411 and GeoPI. (7) ProjectWise is used for storing plan sets for design-bid-build projects; e-Builder is used for storing plan sets for design-build and P3 projects; and all manuals and specifications are stored online. |
| Guam | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | None |
| Hawaii | Paper-based Methods | HANDS (1) | Paper-based Methods | Paper-based Methods | Investigating Solutions | Adobe Sign for Bid Documents | Paper-based Methods | Paper-based Methods | Paper-based Methods | Paper-based Methods | Paper-based Methods | Some tablets being used by consultants | NPA | Facsware for Project Management and Microsoft Project for Scheduling | Paper-based Methods | Paper-based Methods | Paper-based Methods | Paper-based Methods | In-person meetings | Paper-based Methods | (1) Hawaii Awards and Notices Data System (HANDS) |
| Idaho | AASHTO BAMS/DSS | AASHTO Preconstruction and Estimator | AASHTO Bids | Bluebeam Revu (1) | AASHTO SiteManager | NPA | ProjectWise (2) | NPA | Bid Express; SurePath (3) | NPA | NPA | Headlight (4) | ACM; CPP | NPA | NPA | NPA | NPA | NPA | NPA | NPA | (1) Bluebeam Revu is used for preconstruction digital review of plans. (2) ProjectWise is used for all project related documentation. (3) SurePath is used for verification of electronic bid bonds. |
| Illinois | NPA | ExeVision | NPA | NPA | Custom Program (1) (2) | NPA | Custom Program (1); ProjectWise | NPA | Bid Express; SurePath(2); Exevision (3) | NPA | NPA | Headlight (4) | NPA | Custom Program (2) | NPA | NPA | NPA | NPA | NPA | NPA | (1) Custom application called Illinois Construction Records System is used for construction documentation, which also serves as a digital quantity book for the contract. Controller requires wet signatures on change orders. (2) IDOT has a custom web-based application called Materials Integrated System for Test Information and Communication (or WebMISTIC) for storing material inspection and test information. (3) ExeVision is used for electronic bidding - electronic bidding is encouraged; but not mandatory. (4) SurePath is used for verifying electronic bid bonds. (5) Headlight is being used by consultans providing construction services |
| Indiana | AASHTO BAMS/DSS | AASHTO Preconstruction, Cost Estimation and Estimator | AASHTO Expedite | Bentley OpenRoads Navigator and ProjectWise; SharePoint | AASHTO CRLMS and SiteManager (1); AASHTO SitXchange (2) | Paper-based Methods | ProjectWise; SharePoint; Custom Program (3) | ArcGIS Collector | Bid Express; SurePath (4) | EPI (5) | LIMS (6) | Custom Program (7), HP Tablets, iPads (8) | CPP | NPA | NPA | Paper-based Methods | NPA | NPA | NPA | Piloting RFID for Small Culverts, Sheet Signs and Panel Signs | (1) Planning to upgrade to AASHTOWare Project modules. (2) Module that allows contractors to enter subcontractor information post-award. (3) Electronic Records Management System (ERMS) for long term storage. (4) SurePath is used to verify electronic bid bonds. (5) Evaluating e-ticketing. (6) LIMS in 2018. The state is a long-time user of SiteManager. (7) Field Assistant Application (module-based). Application connects to SiteManager. (8) While the state owns iPads, only Windows Tablets are used for construction purposes. The State also developed a custom inspector daily diary application. Working with Bentley to develop an interim 2D model-based application using a federal grant. This project is a share-cost effort between Indiana and Ohio. Indiana is paying for the 2D model-based plan application while Ohio is paying for the 3D model-based application. |
| Iowa | AASHTO BAMS/DSS | AASHTO PES/LAS | AASHTO Expedite | NPA | AASHTO FieldManager, AASHTO SiteXchange (1) | Doc Express | Doc Express (2); ProjectWise | Collector for ArcGIS, Survey 123, GPS Outline (3); PDF Expert (4) | Bid Express; SurePath (5) | Earthwave TechnologyFleetwatcher; i-Strada (6) | Custom Program | iPads | CPP | NPA | NPA | Custom Program (7) | NPA | NPA | Adobe Connect (8) | EPI | (1) Module that allows contractors to add subcontractor information post-award. (2) Doc Express is used for post-letting document management and digital signatures during the construction administration of a project, while ProjectWise is used for document management of engineering drawings during Preconstruction. (3) Implemented ArcGIS collector, Survey 123 and GPS Outline to document as-built location and conditions for culverts and a few other as-built features. (4) PDF expert for plan reading/markup and fillable forms on the iPads. (5) SurePath is used to verify electronic bid bonds. (6) Piloting e-ticketing for HMA and Concrete. (7) ERL system is an online room for specifications; manuals; road standards; materials; inventory materials; bridge standards; etc. (8) Adobe Connect is used for virtual meetings. (9) Bar codes are used to track certain field material samples (i.e. hot asphalt boxes). |
| Kansas | AASHTO BAMS/DSS | AASHTO Preconstruction | AASHTO Bids | Bluebeam Revu (1) | AASHTO CRLMS and SiteManager (2); Field Interviewer | NPA | ProjectWise | NPA | Bid Express; e-Plans; SurePath (3) | NPA | AASHTO Construction and Materials (2) | Mobile Inspector; Field Interviewer | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | (1) Bluebeam Revu used for Preconstruction collaboration. (2) In the process of implementing AASHTOWare Project Construction & Materials. (3) SurePath is used for verifying electronic bid bonds. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kentucky | AASHTO BAMS/DSS | AASHTO Preconstruction; Estimator | AASHTO Bids | ProjectWise | AASHTO CRLMS; AASHTO SiteManager (1); AASHTO SiteXchange (2) | Paper-based Methods | ProjectWise (3); AgilePoint (3) | Varies (4) | Bid Express; SurePath (5) | Earthwaves Fleetwatcher (6) | NPA | Dell Tablets with Citrix; iPad wit Mobile Inspector | NPA | NPA | NPA | GPS Rovers and Robotic Total Stations | NPA | NPA | NPA | NPA | (1) In the process of upgrading SiteManger to Construction & Materials. (2) Module that allows contractors to enter subcontractor information post-award. (3) ProjectWise is used for document management; but AgilePoint, a Platform as a Service (PaaS), is used to automate the routing and approval process for change orders. (4) As-built records are documented using a variety of methods; redlined PDFs or CAD drawings, or redlined on paper. Bluebeam is available to each project office. Also, piloting Collector for ArcGIS for ADA asset inventory (5) SurePath is used to verify electronic bid bonds. (5) Equipment is available for construction surveys. (6) Conducting pilot projects |
| Lousiana | AASHTO BAMS/DSS | AASHTO Preconstruction; Estimation | AASHTO Bids | Bluebeam Revu; Sharepoint | AASHTO CRLMS and SiteManager | IdenTrust; ePersona | ProjectWise, SharePoint, Falcon DMS (1) | NPA | Bid Express; SurePath (2) | NPA | NPA | Mobile Inspector, Headlight (3) | NPA | Custom Program (4) | NPA | NPA | NPA | Custom Program (4) | NPA | NPA | (1) Falcon DMS is used for accessing legacy documents with some level of integration. It is used to allow contractors to access released project bid-sets through the web. The system is integrated with other enterprise systems, and has been customized to allow interactive communication between project managers and contractors regarding bid sets. (2) SurePath is used to verify electronic bid bonds. (3) Headlight is being piloted to interface with SiteManager. (4) State has a custom program and project management system that tracks project time and cost, and produces reports. |
| Maine | AASHTO BAMS/DSS | AASHTO Estimator | AASHTO Expedite | Bluebeam Revu | AASHTO FieldManager | Doc Express | Custom Program (1); Doc Express | NPA | Bid Express; SurePath (2) | NPA | NPA | Mobile Inspector, iPads and Windows-based tablets | ACM | NPA | NPA | NPA | NPA | NPA | NPA | NPA | (1) Use a custom electronic document organization control system called TEDOCS as their electronic filing system. (2) SurePath is used to verify electronic bid bonds. |
| Maryland | AASHTO BAMS/DSS | AASHTO Preconstruction and Estimator | AASHTO Bids | Custom Program (1) | AASHTO CAS | NPA | ProjectWise | NPA | Bid Express; SurePath (2) | NPA | Custom Program (3) | NPA | ACM | NPA | Custom Program (1) | NPA | NPA | NPA | NPA | EPI (4) | (1) Project websites for sharing information. (2) SurePath is used to verify electronic bid bonds. (3) Materials Management System. (4) Evaluating RFID/bar code technology for automatically tracking materials. |
| Massachusets | NPA | NPA | AASHTO Expedite | NPA | Custom Program (1) | NPA | Custom Program; ProjectWise | NPA | Bid Express; SurePath (2) | NPA | NPA | NPA | CPP | Oracle P6 | NPA | NPA | NPA | NPA | NPA | NPA | (1) Massachusetts uses a custom construction management system that integrates with other existing systems. The state has an environmental management system (EMS). (2) SurePath is used to verify electronic bid bonds. |
| Michigan | AASHTO BAMS/DSS | AASHTO Preconstruction | AASHTO Bids | Bluebeam Revu | FieldManager and FieldNet | DocuSign | ProjectWise | NPA | Bid Express | NPA | NPA | iPads, Windows-based tablets, iPhones, and laptops; ProjectWise Edge (1); Mobile Inspector (2); PDF Expert; Bluebeam Vu (3) | ACM | NPA | ProjectWise | GPS Rovers | NPA | NPA | FaceTime | EPI (4) | (1) ProjectWise Edge is a modern interface used to access ProjectWise content for desktop and mobile devices. It allows users to download files before going to the field to work offline until they upload the files back to ProjectWise. (2) Mobile inspector currently being used and may replace the FieldBook module of the FieldManager CMS. (3) Bluebeam Vu is the free version of PDF viewer. (4) Using some RFID/bar code technology for automatically tracking materials. |
| Minnesota | AASHTO BAMS/DSS | AASHTO Preconstruction, Cost Estimation and Estimator | AASHTO Bids | SharePoint | AASHTO CRLMS, SiteManager (1) | Topaz Tablets (2) | Custom Program (3); ProjectWise and SharePoint | Collector for ArcGIS | Bid Express | NPA | AASHTO Construction and Materials (1) | Citrix; iPads; Headlight (4); Mobile Inspector | ACM; CPP | Oracle P6 | Custom Program | GPS Rovers (5); Unmanned Aircraft Systems (6) | NPA | NPA | NPA | NPA | (1) In the process of upgrading to Construction & Materials module. (2) MnDOT uses Topaz Tablets and Software to capture; bind and authenticate eSignatures. This technology is typically used in other markets such as delivery services; but state is working toward implementing a solution with digitally encrypted signatures and electronic approval of supplemental agreements. (3) TRACS is an EDMS used extensively for design-build projects; and it is integrated to the LIMS for materials certification/management. MnDOT intends to replace this system with a commerical application. (4) Piloting Headlight on a project by project basis. (5) Using GPS rovers for real-time verification and measurement of quantities. (6) MnDOT is currently using UAS for bridge maintenance inspections in the metro district, and has not used the technology for construction applications. |
| Mississippi | AASHTO BAMS/DSS | AASHTO Preconstruction and Estimator | AASHTO Expedite | NPA | AASHTO CRLMS and SiteManager | NPA | ProjectWise (1) | NPA | Bid Express | NPA | NPA | NPA | ACM | NPA | NPA | NPA | NPA | NPA | NPA | NPA | (1) Sorting as-built plans in ProjectWise. |
| Missouri | AASHTO BAMS/DSS | AASHTO Preconstruction and Estimator | AASHTO Bids | SharePoint | AASHTO CRLMS and SiteManager (1) | Adobe Digital Signatures, DocuSign (2) | ProjectWise and SharePoint (3) | Bluebeam Revu | Bid Express | NPA | NPA | Mobile Inspector; Citrix; Windows-based tablets or laptops | ACM | NPA | SharePoint | GPS Rovers with Topcon MAGNET Field. (4) | NPA | Cognos (5) | Video Conferencing | NPA | (1) Transitioning from SiteManager to the AASHTOWare Project Construction and Materials web version of the product. Uses a custom macro enabled spreadsheet system called CRE2O to allow contractors to submit documentation that automatically syncs with SiteManager. Cognos is used to run customized reports from various AASHTOWare products. (2) DocuSign is used for all contract execution and Adobe is used for any post-award signatures and approvals (e.g. change orders). (3) SharePoint is the official document management system for documentation related to all construction projects from cradle to grave with the exception of engineering drawings, which are stored in ProjectWise. The e-Project site hosts all internal documents while an external site was created to allow contractors to submit documentation. Also, MoDOT uses a third party application called Harmon.ie that allows integration between Outlook email client and the e-Project sites. Users can directly save attachments from email to e-Project site or open documents directly without ever leaving Outlook. (4) Evaluating Topcon MAGNET Site for office software. (5) Cognos is used to run various reports from SiteManager and any other ORACLE database system. |

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| Montana | AASHTO BAMS/DSS | AASHTO Preconstruction, Project Estimation | AASHTO Bids | Bluebeam Revu (1) | AASHTO CRLMS and SiteManager (2) | Doc Express | Doc Express | NPA | Bid Express | NPA | NPA | NPA | ACM | NPA | NPA | NPA | NPA | NPA | NPA | NPA | (1) Bluebeam Revu is used for pre-construction collaboration. (2) Piloting Construction & Materials. |
| Nebraska | AASHTO BAMS/DSS | AASHTO Preconstruction | AASHTO Bids | NPA | AASHTO SiteManager; AASHTO SiteXchange (1) | DocuSign | OnBase; ProjectWise | NPA | Bid Express | NPA | NPA | Windows-based tablets | NPA | NPA | NPA | NPA | Equipment Watch | NPA | NPA | NPA | (1) Module that allows contractor to enter subcontractor information post-award. (2) Doc Express is used for post-letting document management and digital signatures during the construction administration of a project, while ProjectWise is used for document management of engineering drawings during Preconstruction. (3) Nebraska is using the ArcGIS Collector GIS application on a project by the environmental group to collect data for endangered and threatened species. (4) The State also uses SharePoint, but typically not for project collaboration. The state owns Windows tablets, but not sure if they are being used for construction. (5) The State is also in the process of developing a remote application solution to allow external users to access internal systems. The State is also in the process of implementing OnBase for managing change order documentation and approvals. |
| Nevada | NPA | NPA | NPA | NPA | AASHTO FieldManager | NPA | ProjectWise | NPA | NPA | NPA | NPA | Mobile Inspector | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | None |
| New Hampshire | NPA | NPA | NPA | NPA | NPA | Doc Express | Doc Express | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | None |
| New Jersey | AASHTO BAMS/DSS | AASHTO Preconstruction and Project Estimation | AASHTO Bids | e-Builder | AASHTO CRLMS and SiteManager (1) | Paper-based Methods | Falcon DMS (2); ProjectWise (3); e-Builder | Paper-based Methods | Bid Express | Paper-based Methods | AASHTO SiteManager | Dell Tablets (4) | ACM | Custom Program (5) | e-Builder (6) | Paper-based Methods | Paper-based Methods | Custom Program (5) | NPA | Paper-based Methods | (1) Implemented most of AASHTOWare Project, but working on rolling out Construction & Materials. (2) New Jersey uses Falcon DMS to host the plans for internal use. All images of road, bridge, traffic, and related documents, including as-builts and right-of-way documents, are stored in this electronic plans library. (3) For design engineering drawings. (4) Inspectors are provided with a hot spot to log in to the NJDOT network and access SiteManager directly. (5) Project Management and Reporting System (PMRS) is a combination of e-Builder, GIS, and other electronic document management solutions. (6) For project documents. |
| New Mexico | AASHTO BAMS/DSS | AASHTO Estimator and PES/LAS | AASHTO Expedite | Autodesk BIM 360 (1) | AASHTO SiteManager | NPA | Autodesk BIM 360 (Docs) (1) | NPA | NPA | NPA | NPA | iPads | NPA | NPA | NPA | GPS Rovers with Trimble Business Center | NPA | NPA | NPA | NPA | (1) Autodesk BIM 360 modules used for engineering models and plan sheets. |
| New York | AASHTO BAMS/DSS | AASHTO Estimator and PES/LAS | AASHTO Bids | NPA | AASHTO SiteManager (1) | Paper-based Methods; User-based Authentication for Document Approval | ProjectWise (2); Doc Express (3) | Varies (4) | Bid Express | Paper-based Methods | NPA | HP Laptopos, Dell Tablets; iPhone with Mobile Inspector | ACM | NPA | NPA | GPS Rovers with Leica Geosystems Captivate | NPA | NPA | NPA | NPA | (1) Long user of SiteManager for construction management. (2) ProjectWise is used for engineering drawings in design. (3) Piloting Doc Express. (4) As-built records are documented using a variety of methods: redlined PDFs or CAD drawings, or redlined on paper. The agency's goal is to have a GPS/GIS application to record as-built conditions. |
| North Carolina | AASHTO BAMS/DSS | AASHTO Preconstruction | AASHTO Expedite | SharePoint | AASHTO CRLMS | NPA | SharePoint (1) | NPA | Bid Express | NPA | NPA | NPA | ACM | NPA | NPA | NPA | NPA | NPA | NPA | RFID for sample testing, material inspections, and other on-site data collection and tracking | (1) Long-time user of SharePoint technology for collaboration and document management. |
| North Dakota | NPA | NPA | AASHTO Bids | NPA | NPA | NPA | NPA | NPA | Bid Express | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | None |
| Ohio | AASHTO BAMS/DSS | AASHTO Preconstruction, Cost Estimation and Estimator | AASHTO Bids | Bluebeam Revu; Sharepoint | AASHTO CRLMS; AASHTO SiteManager (1); AASHTO SiteXchange (2) | DocuSign | Falcon DMS (3); SharePoint (4) | ArcGIS Collector | Bid Express | NPA | NPA | Custom Program (5); HP 2 in 1 Elite laptops and iPhones | ACM; CPP | Oracle P6 | NPA | NPA | Equipment Watch | NPA | NPA | NPA | (1) In the process of upgrading to C&M. Planning to go live in February 2020 and will use a staggered implementation approach to facilitate just in time training. (2) Module that allows contractors to enter subcontractor information post-award. (3) Falcon DMS is used for internal access of geotechnical information, such as: boring logs; profile sheets; lab reports; field sketches; geo-hazards; structures; and digital photos. This portal is also available to external stakeholders such as FHWA; Ohio DNR; and municipalities. (4) SharePoint is used for document and storage retention, but looking into implementing ProjectWise to be able to review 3D models in the future. (5) Use digital smart forms called "GoFormz" for quality construction inspection (diaries), which are cloud-based PDF forms accessible via SharePoint. Also, ODOT is currently working with Bentley Systems to develop a 3D model-based construction inspection application, which was funded by a federal grant. This project is a share-cost effort between Indiana and Ohio. Indiana is paying for the 2D model-based plan application while Ohio is paying for the 3D model-based application. |
| Oklahoma | AASHTO BAMS/DSS | AASHTO Estimator and PES/LAS (1) | AASHTO Bids | NPA | AASHTO SiteManager; AASHTO SiteXchange (1) | NPA | NPA | NPA | Bid Express | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | (1) Beginning upgrades to Pre-construction and Civil Rights modules. (2) Module that allows contractors to enter subcontractor information post-award. |
| Oregon | AASHTO BAMS/DSS | AASHTO Estimator, TRACER and PES/LAS | AASHTO Bids | NPA | Planning implementation of new system (1) | Doc Express | Doc Express (2) and ProjectWise (3) | NPA | Bid Express | NPA | NPA | iPads, dynamic electronic forms, Adobe Acrobat DC | ACM | NPA | NPA | GPS Rovers; MicroSurvey Genius Field Software; Unmanned Aircraft Systems | NPA | NPA | NPA | EPI (4) | (1) ODOT plans to implement AASHTOWare Project using a staggered/modular implementation approach in the next couple of years. (2) Doc Express is being used for active project document management. (3) ProjectWise is used as a final archival document management for construction, and official design document management for active projects and archives. (4) Evaluating RFID/bar code technology for automatically tracking materials. |

**Legend**
- **ACM** Alternative Contracting Methods
- **CPP** Construction Partnering Program
- **NPA** Information Not Publicly Available
- **EPI** Innovation being Evaluated, Piloted, or Implemented, but no product was specified in the literature.

| State or U.S. Territory | Bid History Analysis | Bid Letting Management and Estimates | Bid Preparation and Analysis | Collaboration Portal | Construction Management System | Digital Signatures | Document Management System | Electronic As-Builts (GPS/GIS/PDF red-lining) | Electronic Bidding and Bid Bonds | e-Ticketing | Lab Inventory and Materials Management System | Mobile Devices for Inspection | Partnering | Project Management System | Project References (e.g. plans; standards; manuals) | Quantity Measurements (real-time verification) | Fleet Management | Queries and Reports | Virtual Meetings | Auto-Material Tracking (RFID/Bar-Coding) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pennsylvania | NPA | NPA | AASHTO Expedite | Custom Program (1) | Custom Program (2) | None (3) | Custom Program (1) | Collector for ArcGIS (4) | Bid Express | Earthwave Technology Fleetwatcher; Zonar GPS System and Libra Systems | Custom Program (5) | Custom Program (6); iPads | ACM; CPP | NPA | Custom Program (1) (5) | Custom Program (7) | NPA | NPA | NPA | EPI (8) | (1) SharePoint based system called PennDOT Project Collaboration Center (PPCC) for active construction document management (external and internal access), and Engineering Document Management System for document archive. (2) Engineering Construction Management System (ECMS) and Construction Documentation System version 3 (CDSv3). (3) PennDOT uses user-based authentication in lieu of digital signatures. (4) ArcGIS being used to collect specific assets and update maintenance database. (5) Electronic Construction and Materials Management System (ECAMMS). (6) Multiple Mobile Computing (MC) applications for iOS. (7) Mobile application for computing regular and irregular shape volumes. (8) Evaluating e-ticketing technology and has implemented RFID/bar code technology to automatically track materials. |
| Puerto Rico | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | Tablets (1) | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | (1) Used 2017 STIC funds to procure mobile devices. Status of innovation is unknown. |
| Rhode Island | NPA | NPA | NPA | NPA | NPA | NPA | Falcon DMS (1) and ProjectWise | NPA | NPA | NPA | NPA | PlanGrid (2) | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | (1) Falcon DMS is used for internal access to digitized (scanned) paper construction plans and plats in a plans library. (2) Piloted the application. |
| South Carolina | AASHTO BAMS/DSS | AASHTO Preconstruction and Estimator | AASHTO Expedite | NPA | AASHTO CRLMS and SiteManager (1) | Paper-based (2) | Falcon DMS (3); ProjectWise (4); SharePoint (5); Bluebeam Revu (6) | NPA | Bid Express | NPA | NPA | Citrix; Windows Tablets | ACM; CPP | NPA | NPA | GPS Rovers (7) | NPA | NPA | NPA | NPA | (1) Currently looking at upgrading to AASHTOWare Project Construction and Materials web-based module, expected to be fully implemented in two years. (2) Paper-based contract execution, but evaluating digital signature processes for executing contracts. (3) Falcon DMS is used as the platform for the state's "Online Plans Room" for internal access of scanned images, as-built drawings, and project photos; and external access of "as-let" construction plans. (4) ProjectWise is used for document storage and routing. (5) SharePoint is used for external collaboration. (6) Design/build team uses Bluebeam for collaboration. (7) In early stages of implementing GPS rovers for real-time verification and measurement of quantities. |
| South Dakota | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | Custom Program; SurePath; Surety 2000 | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | None |
| Tennessee | AASHTO BAMS/DSS | AASHTO Preconstruction | AASHTO Expedite | NPA | AASHTO CRLMS; AASHTO SiteManager; AASHTO SiteXchange (1) | NPA | NPA | NPA | Bid Express | NPA | NPA | PlanGrid (2) | ACM | NPA | NPA | NPA | NPA | NPA | NPA | NPA | (1) Module that allows contractors to enter subcontractor information post-award. (2) TDOT officially adopted the PlanGrid platform as their e-Construction solution effective March 2019. |
| Texas | AASHTO BAMS/DSS | AASHTO Estimator | NPA | NPA | AASHTO SiteManager | DocuSign | ProjectWise | NPA | Bid Express | NPA | NPA | iPads; Headlight; Mobile Inspector; Citrix | ACM; CPP | Oracle P6 | NPA | NPA | Equipment Watch | NPA | NPA | NPA | (1) Consultants using Headlight and iPads. Texas is a long-time user of SiteManager. |
| U.S. Virgin Islands | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | None |
| Utah | NPA | NPA | NPA | Bentley OpenRoads Navigator; Interchange | Aurigo Masterworks | EPI | ProjectWise and Interchange | Unmanned Aircraft Systems | Bid Express | Discussing technology (1) | NPA | iPads; Aurigo Masterworks Mobile Inspection App | ACM | NPA | NPA | GPS Rovers; lidar; Unmanned Aircraft Systems (2) | NPA | NPA | NPA | NPA | (1) UDOT is currently speaking with HMA industry to discuss potential pilots for e-ticketing. (2) UDOT uses a combination of geospatial tools to capture data in construction to measure quantities and perform real-time verifications. Tools are selected based on the tolerances needed for each activity. |
| Vermont | None | AASHTO Estimator | AASHTO Expedite (1) | Doc Express | AASHTO FieldManager and SiteManager (2) | Paper-based Methods for Contract Execution; Doc Express | Doc Express | Investigating Technology (3) | Bid Express | Paper-based Methods | AASHTO SiteManager (2) | Mobile Inspector (2) | ACM; CPP | NPA | NPA | NPA | NPA | NPA | NPA | NPA | (1) Transitioning to AASHTOWare Project Bids, but does not have bid analysis software. (2) Transitioning to a new construction management system: ExeVision. (3) Looking at Survey 123. |
| Virginia | AASHTO BAMS/DSS | AASHTO Preconstruction and Estimator | AASHTO Expedite | Bluebeam Revu (1) | AASHTO CRLMS and SiteManager | IdenTrust (2), Bluebeam or Adobe Digital Signatures | Falcon DMS (3), CADAC (4); ProjectWise (5); SharePoint | NPA | Bid Express | NPA | NPA | Citrix, PlanGrid (6), Headlight (7), iPads | ACM; CPP | NPA | NPA | NPA | NPA | NPA | NPA | NPA | (1) Bluebeam Revu and Studio software are used for Preconstruction collaboration, constructability reviews, and/or markup of as-built plans. (2) State Construction Engineer has authorized the use of IdenTrust for contractors to sign documents electronically, but it is not used very often because the State does not pay for the licensing. Internally, the agency uses Bluebeam or Adobe ID signatures. (3) Virginia uses Falcon DMS for accessing active project documents, such as: CADD drawings; email; reports; spreadsheets; and raster images. The state is also using Falcon DMS for storing and retrieving as-built plans. (4) Agency uses a program called CADAC (SharePoint-based) for design-build projects. Also, agency is building a new document management system similar to CADAC, but not as sophisticated. (5) Design is currently upgrading to ProjectWise from Falcon DMS. ProjectWise will be used for document management of design/cad files. (6) Piloting PlanGrid. (7) Piloting Headlight. |
| Washington | NPA | NPA | AASHTO Expedite | SharePoint | NPA | NPA | ProjectWise and SharePoint | NPA | Bid Express | NPA | NPA | Headlight (1) | ACM | NPA | NPA | NPA | NPA | NPA | NPA | NPA | (1) Piloting Headlight for construction inspector reports. |
| Washington D.C. | NPA | NPA | AASHTO Expedite | NPA | NPA | NPA | NPA | NPA | Bid Express | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | None |
| West Virginia | AASHTO BAMS/DSS | AASHTO Preconstruction | AASHTO Bids | NPA | AASHTO SiteManager | NPA | ProjectWise | NPA | Bid Express | NPA | NPA | NPA | ACM | Oracle P6 | NPA | NPA | NPA | NPA | NPA | NPA | None |
| Wisconsin | AASHTO BAMS/DSS | AASHTO Preconstruction and Estimator | AASHTO Expedite | Autodesk BIM 360 (Glue and Docs); Bluebeam Revu; SharePoint | AASHTO FieldManager and FieldNet; Aurigo Masterworks (1) | DocuSign | OnBase and SharePoint | NPA | Bid Express | NPA | NPA | Autodesk BIM 360 Field; iPads; Mobile Inspector; Windows-based tablets (1) | ACM | Oracle P6 | NPA | NPA | NPA | NPA | NPA | NPA | (1) Evaluating several technologies on a per project by project basis; and is leading the AASHTO e-Construction Community of Practice, a forum for states to share and discuss the detailed experiences of implementing digital project delivery practices. |
| Wyoming | NPA | AASHTO TRACER | NPA | NPA | NPA | NPA | Falcon DMS (1); ProjectWise (2) | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | NPA | (1) Uses Falcon DMS for accessing active project documents, such as: reports; spreadsheets; and raster images. The state is also using Falcon DMS for storing and retrieving as-built plans. The state uses this system in numerous departments. (2) ProjectWise is used for design CAD files. |