

Connecticut DOT e-Construction Efforts

NESMEA 2017

What is e-Construction

FHWA Definition:

e-Construction is the collection, review, approval, and distribution of construction contract documents in a paperless environment

Examples

- Paperless Environment
 - electronic contracts
 - electronic transfer of plans and specifications
 - electronic documentation by all stakeholders
 - electronic document submission/routing/approvals (e-signature)
 - digital management of all construction documentation
 - distribution to all project stakeholders through mobile devices
 - Many others

What has the CTDOT done in the past?

- Before we heard of e-Construction we:
 - Started using ProjectWise for Plans and Specs
 - Transitioned to electronic Dailey Work Reports (DWRs)
 - Tested/Piloted/Used other available Technologies
 - GPS
 - Document Control
 - Tablets

CTDOT e-Construction Initiatives

- Electronic Signatures
- Revised Construction Contract form
- Electronic Contractor Submissions
- Mobile Computing Solutions
- Centralized Electronic Document Storage
- Document Control System
- Web Based Construction Management System
- GPS/RTS Construction Inspection

Electronic Signatures

- Internal Electronic Signatures (Directive issued in 2016)
 - All internal forms within the construction division may now be processed electronically. NO PAPER
- External Digital Signatures (DocuSign)
 - Using DocuSign to finalize Construction Order approval process
- Currently working on expansion of the use of electronic and Digital signatures for other documents

Revised Contract Form

- Construction Contract Template Revised
 - Allowed electronic organization
 - Allows fully electronic contract eliminating hundreds of thousands of pages of paper copies
 - Reduces file size and download times
 - Reduces the number of paper copies
 - PDF searchable document

Electronic Contractor Submissions

- In 2015-2016 – Development and pilots
- In 2017 – Procedures issued
- The current state of practice is that almost all correspondence and submissions are electronic

Mobile Computing Solutions

Mobile Computing Solutions

Objectives

- Provide field inspectors with mobile computing equipment
- Allow remote access to Department resources
- Provide a familiar and user-friendly platform
- Provide solutions that allow inspection staff more time and flexibility to focus on inspection duties

Starters



VS



VS



Quickly Became



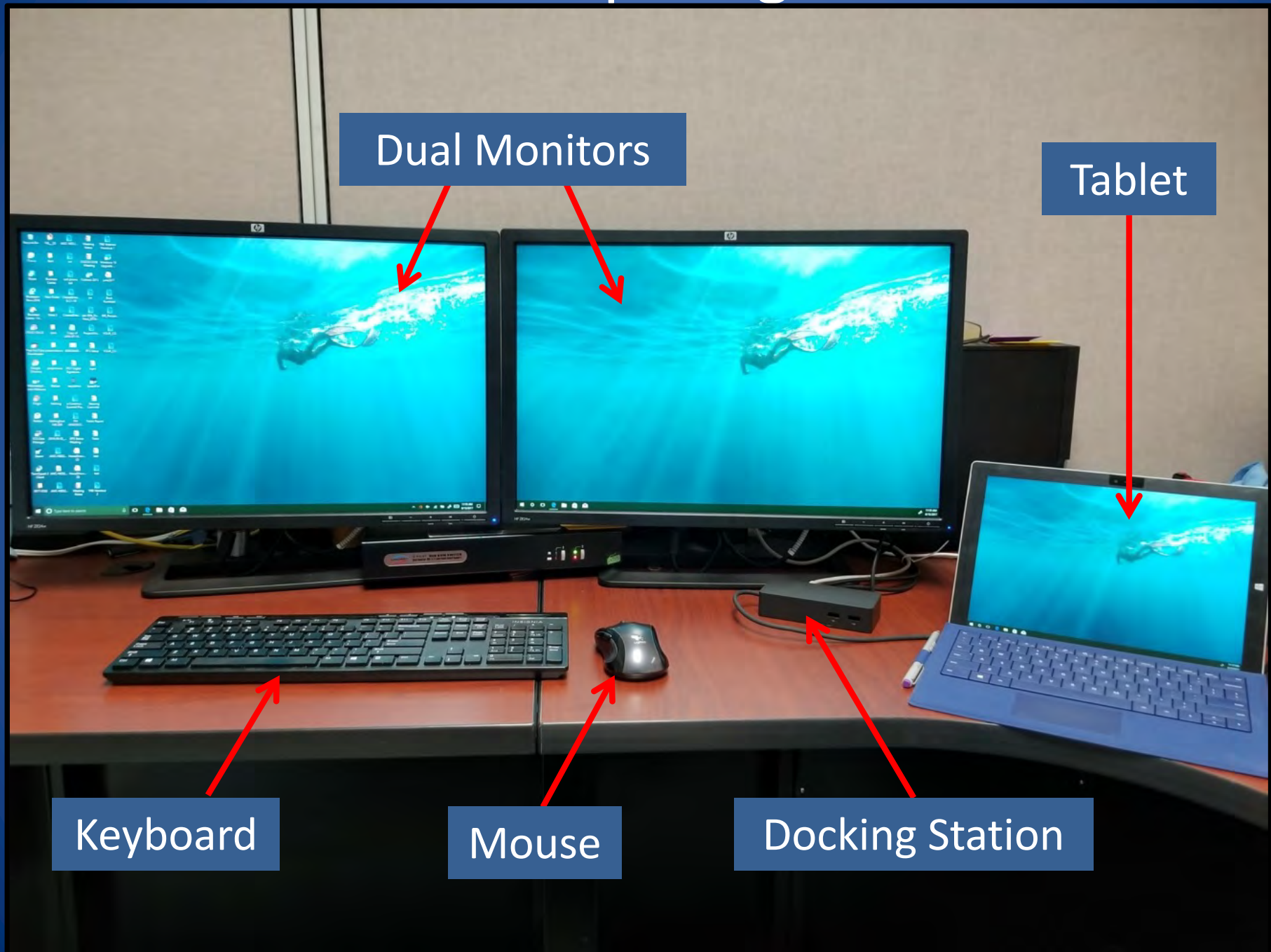
VS



Ended Up



Mobile Computing Solutions



Centralized Electronic Document Storage

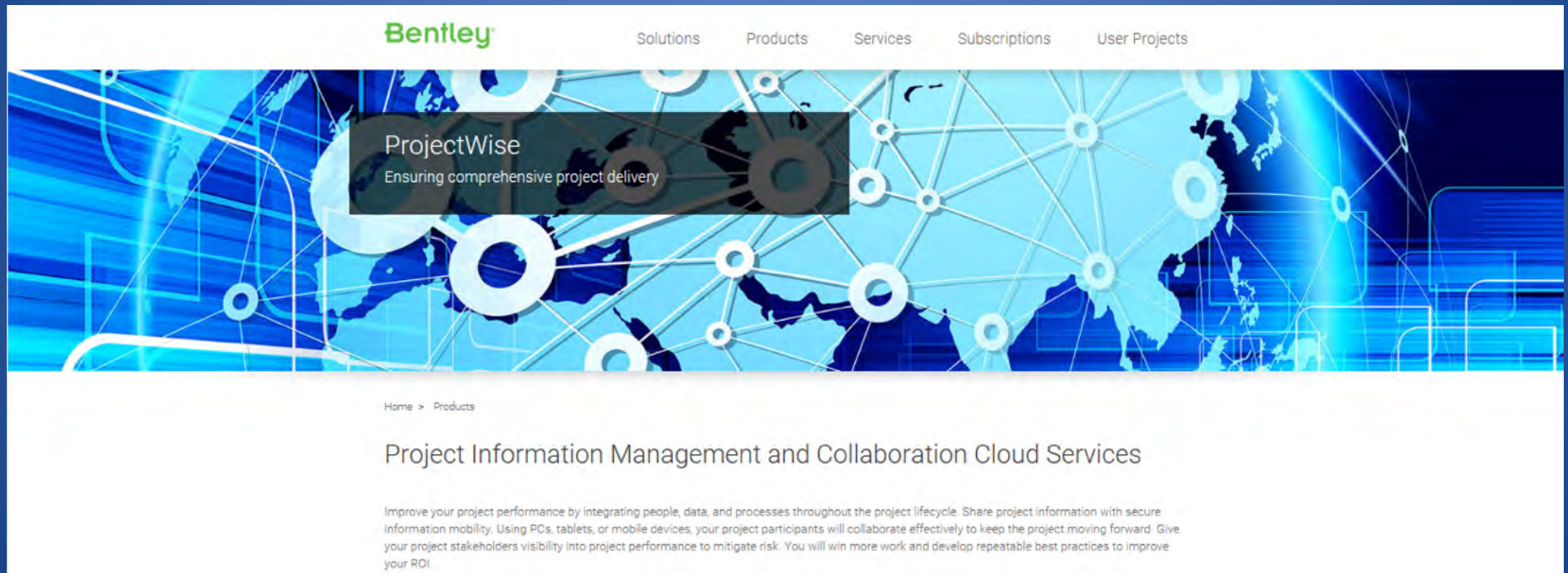
Before



After



Solution

The image is a screenshot of the Bentley ProjectWise website. The top navigation bar is white with the Bentley logo in green on the left and links for Solutions, Products, Services, Subscriptions, and User Projects on the right. Below the navigation bar is a large blue banner featuring a world map and a network of white circles connected by lines. A dark grey semi-transparent box is overlaid on the left side of the banner, containing the text 'ProjectWise' and 'Ensuring comprehensive project delivery'. Below the banner, there is a breadcrumb trail 'Home > Products'. The main heading is 'Project Information Management and Collaboration Cloud Services'. The body text describes the benefits of the solution, such as improving project performance, secure information mobility, and stakeholder visibility.

Bentley

[Solutions](#) [Products](#) [Services](#) [Subscriptions](#) [User Projects](#)

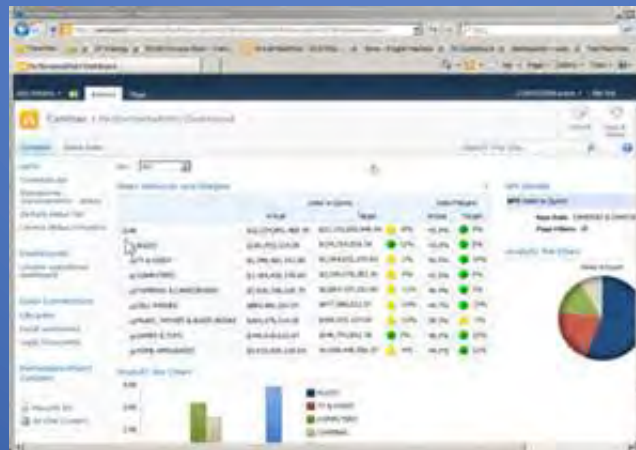
ProjectWise
Ensuring comprehensive project delivery

[Home](#) > [Products](#)

Project Information Management and Collaboration Cloud Services

Improve your project performance by integrating people, data, and processes throughout the project lifecycle. Share project information with secure information mobility. Using PCs, tablets, or mobile devices, your project participants will collaborate effectively to keep the project moving forward. Give your project stakeholders visibility into project performance to mitigate risk. You will win more work and develop repeatable best practices to improve your ROI.

Document Control



Construction Management System

Started here with



SiteManager 3.15



Ending here with



Web-based Construction
management system

Web Based Construction Management System

- The Department is piloting web-based AASHTOware software products
 - Project Construction and Materials module
 - Project Civil Rights module
- Hosting on cloud servers will:
 - One vendor to support the software and hosting
 - Mobile device users, plus department business partners, access to the system where it has been unavailable or cumbersome in the past
 - Expansion and contraction of needed resources quickly

GPS/RTS Construction Inspection

GPS/RTS Construction Inspection



GPS/RTS Construction Inspection

- In the process of being implemented on a Department-wide scale
- Piloted on numerous projects throughout the state successfully
- Electronic engineering data is being provided by designers in order to have the most accurate and up to date project designs

Other Efforts

Other Efforts

- Electronic Computations and Recordkeeping
- Electronic Engineering Data (EED) & 3D Modeling

Questions?