ODOT ProjectWise

eConstruction Why, How, & When

Utah e-Construction / 3D Engineered Models Conference

March, 1, 2016

Joe Squire, P.E., Oregon DOT State Construction and Materials Engineer

Five Phases of Paperless Technology

Denial "Paperless! Are you kidding me!! Hugh! I'll have none of it. Get me a Rite in the Rain Book, and Pencil – I'm good to Go!."

Anger "You're not giving me a wet signature! I'll make you!! AND I want it in triplicate and scanned and in color and sent through the US Mail!"

Bargaining "Alright already. If you tutor me on that techno – gizmo, I may take a few things paperless."

Depression "Everyone is against me, the world was great when I had everything in filing cabinets. Gosh, I miss my 'banker boxes'."

Acceptance "I save time, I have Wi-Fi access, and no dispute I sent something, and more! WOW!!

eConstruction

DEFINITION:

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

OBJECTIVE:

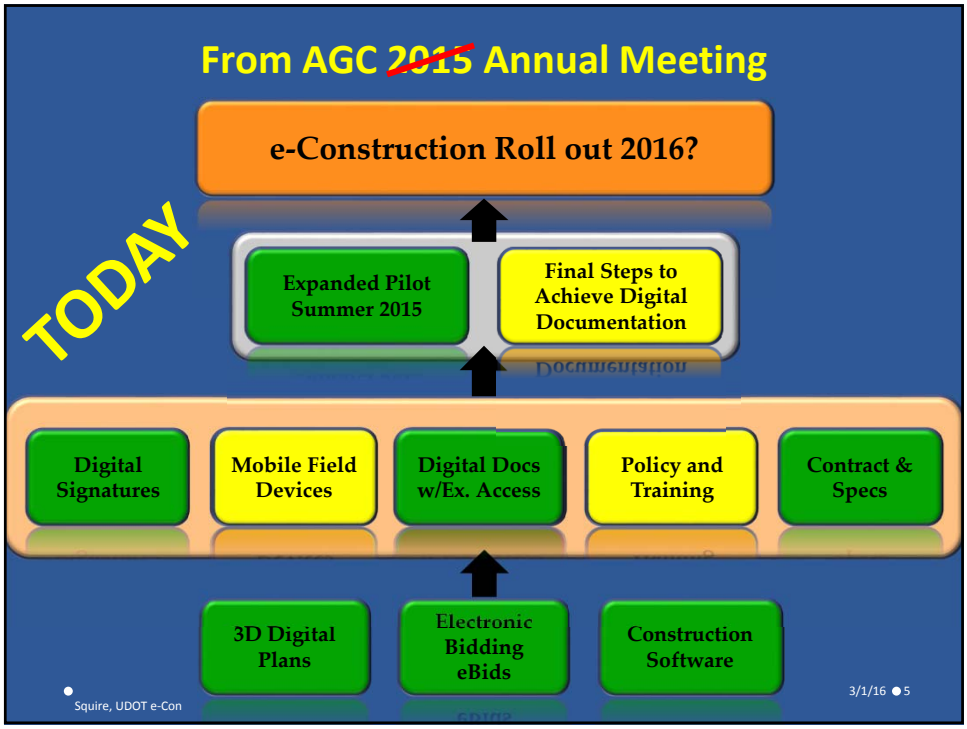
- The goal is to increase efficiency of construction staff by streamlining communications and improving transparency with internal and external partners by the automation of document processing using digital technologies.

If it is created on a computer, keep it on a computer.

From AGC 2015 Annual Meeting

"Create it; print it, sign it, scan it, email it, print it, sign it, scan it, email it, repeat again, and again, and again!"

- **Form and Paper Value? If none then delete**
- **Re-thinking long-held paper systems**
- **Tweaking Forms**
  - **Fractional efficiency gain vs. digital**


From AGC ~~2015~~ Annual Meeting
e-Construction Roll out 2016?
TODAY
Expanded Pilot Summer 2015
Final Steps to Achieve Digital Documentation
Digital Signatures
Mobile Field Devices
Digital Docs w/Ex. Access
Policy and Training
Contract & Specs
3D Digital Plans
Electronic Bidding eBids
Construction Software
Squire, UDOT e-Con
3/1/16 5

Michigan DOT Peer Exchange & eConstruction Pilots
I-84 Nelson Point to Lime, Ontario PM Office, 2015
Squire, UDOT e-Con
3/1/16 6

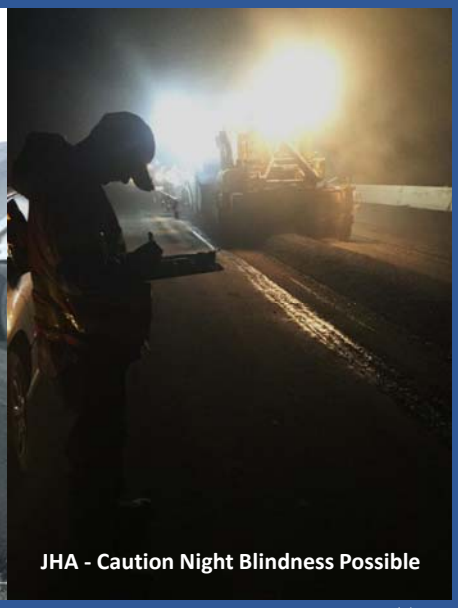
What have we learned?

Anita Muhly
Oregon State University
CECOP Intern

- Safety
- Connectivity
- Apps Available
- Training Issues
- Security Issues
- Digital Signature Issues
- ODOT / Contractor Transfers
- Original / Markups
- Roles and Responsibilities
- Apple iPad Air 2 vs. MS Surface 4

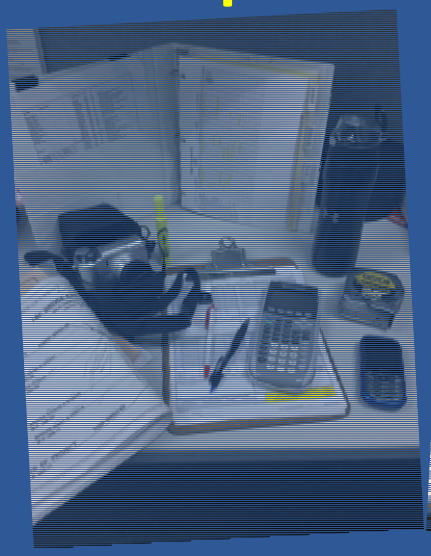
Safety Awareness

JHA – Safe Zone, Look Up, Spotter

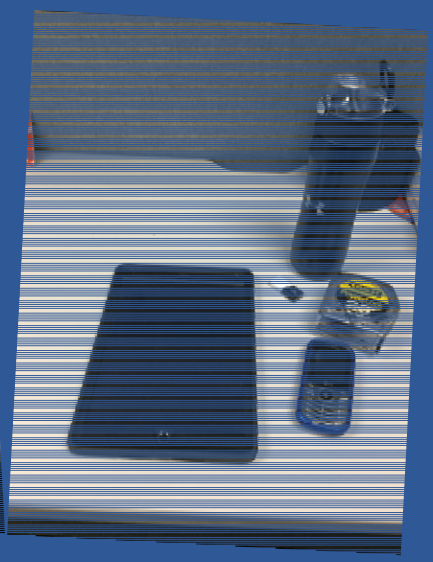


JHA - Caution Night Blindness Possible

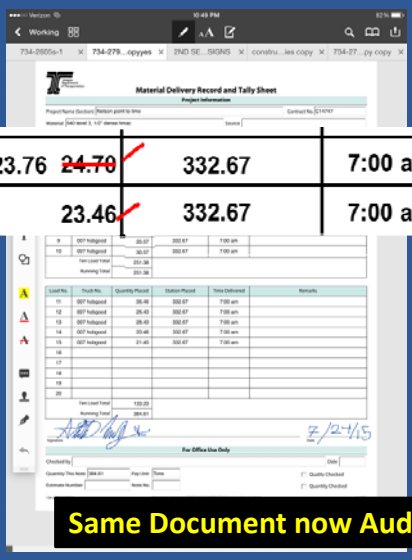
Paper



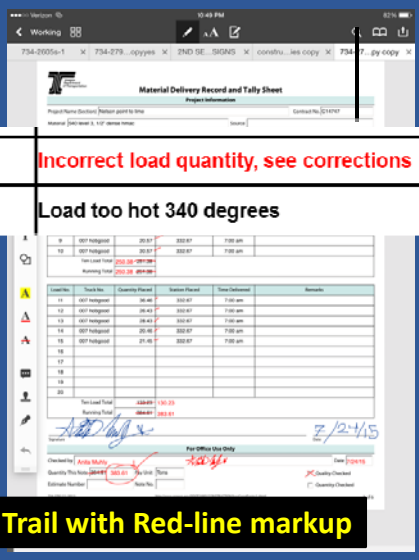
Tablet



Original



Markups

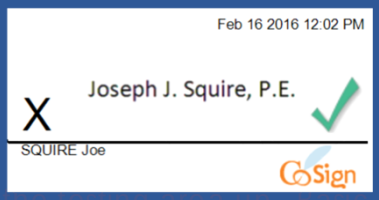


23.76 ~~24.70~~	332.67	7:00 am	Incorrect load quantity, see corrections
23.46	332.67	7:00 am	Load too hot 340 degrees

Same Document now Audit Trail with Red-line markup

Digital Signatures

✓ Digital Signatures instead of wet signatures for select outgoing and incoming files

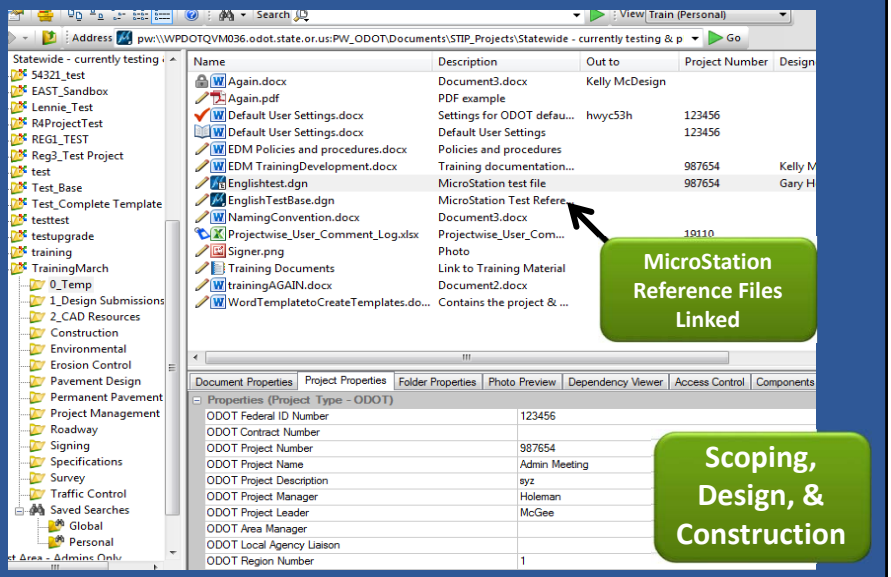


✓ Special Provision 00170.08

eConstruction Vision

- Remain secure
- Establish one source of truth
- Return on investment demonstrated
- Accessible to all – Internal and External
- Leverage geospatial data
- Capture As-Built Assets, plus QBR or RFI Tags
- THINK BEYOND THE NEXT CUSTOMER

Why ProjectWise & Benefits



Applications Utilized

Bentley ProjectWise

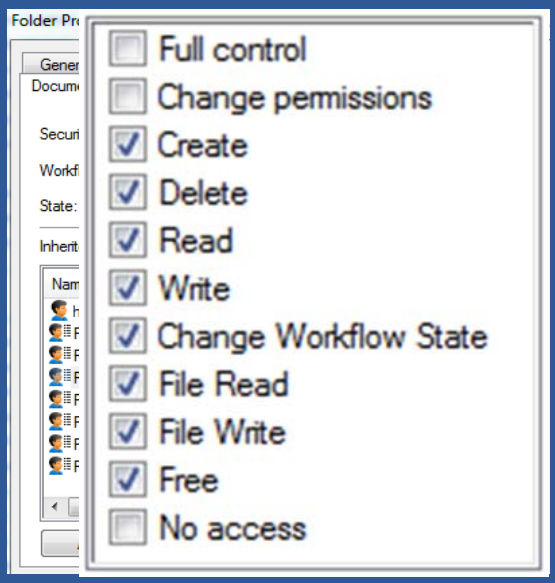
- Highly configurable
- Collaboration software
- Integrates with engineering programs
- Single file location with check out capabilities
- Widely used by other DOTs and corporations

cosign by Ax

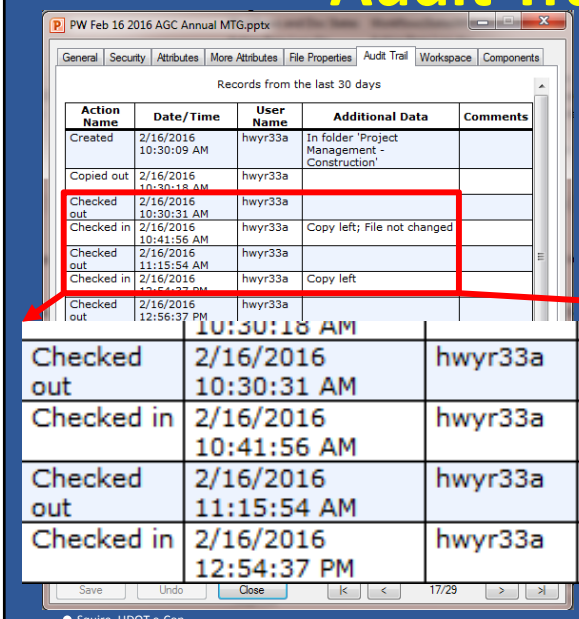
- Secure validated digital signature
- Integrates with engineering programs
- More efficient paperless environment

Folder Properties

- ✓ Separate permissions for folder versus documents
- ✓ Folders & File Names are fixed for <u>Statewide Consistency</u>



Audit Trail

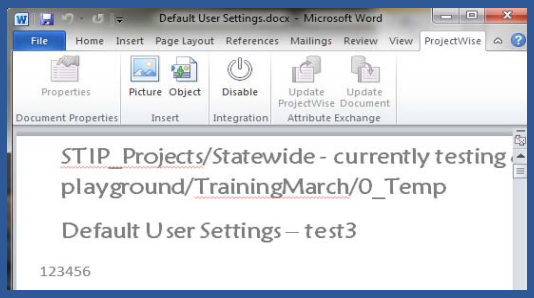


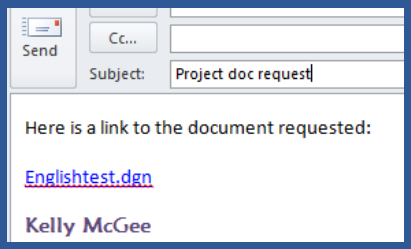
Action Name	Date/Time	User Name	Additional Data	Comments
Created	2/16/2016 10:30:09 AM	hwyr33a	In folder 'Project Management - Construction'	
Copied out	2/16/2016 10:30:18 AM	hwyr33a		
Checked out	2/16/2016 10:30:31 AM	hwyr33a		
Checked in	2/16/2016 10:41:56 AM	hwyr33a	Copy left; File not changed	
Checked out	2/16/2016 11:15:54 AM	hwyr33a		
Checked in	2/16/2016 12:54:37 PM	hwyr33a	Copy left	
Checked out	2/16/2016 12:56:37 PM	hwyr33a		

- ✓ Available to see what happened, when it happened, and by who did it to a file.

MS Office and Outlook

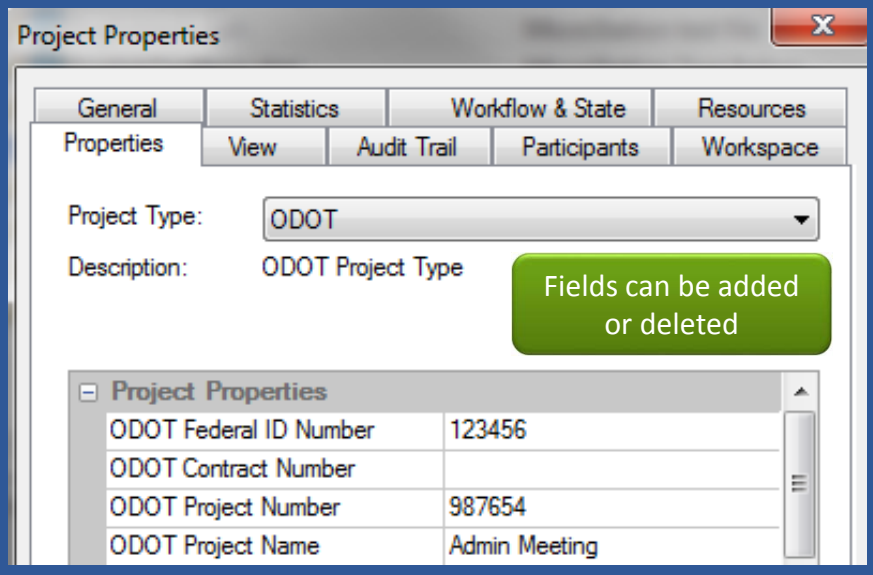
✓ Integrated system with other systems & applications



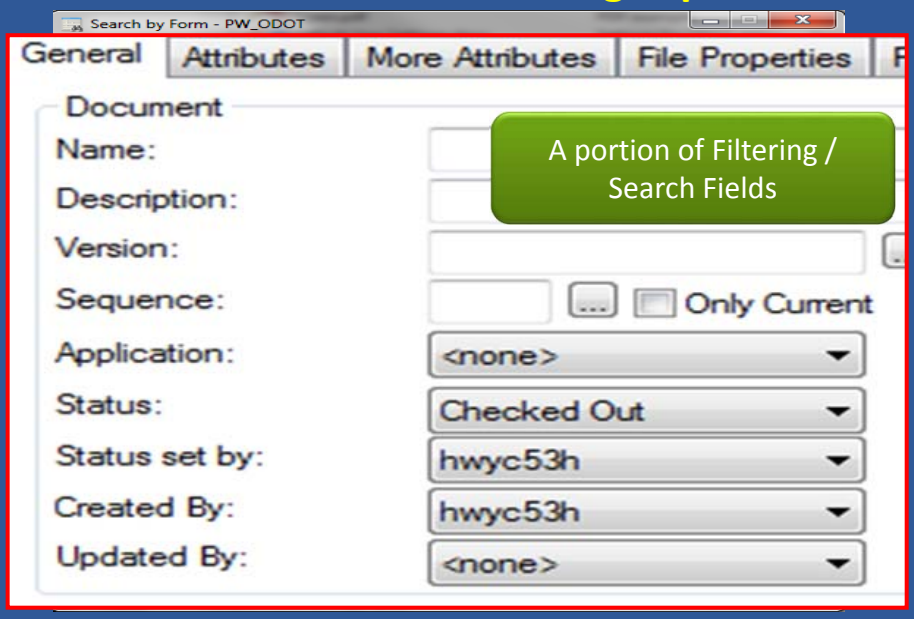


✓ Links to files are sent via email instead of actual files

Configurable folder & document properties



Advanced search and filtering capabilities



ProjectWise e-Con Folder Structure

Contractor Submits e-Documents here

Attributes and search capabilities enable reducing the number of named folders, thus reduces computer latency

ProjectWise e-Con File Naming Conventions

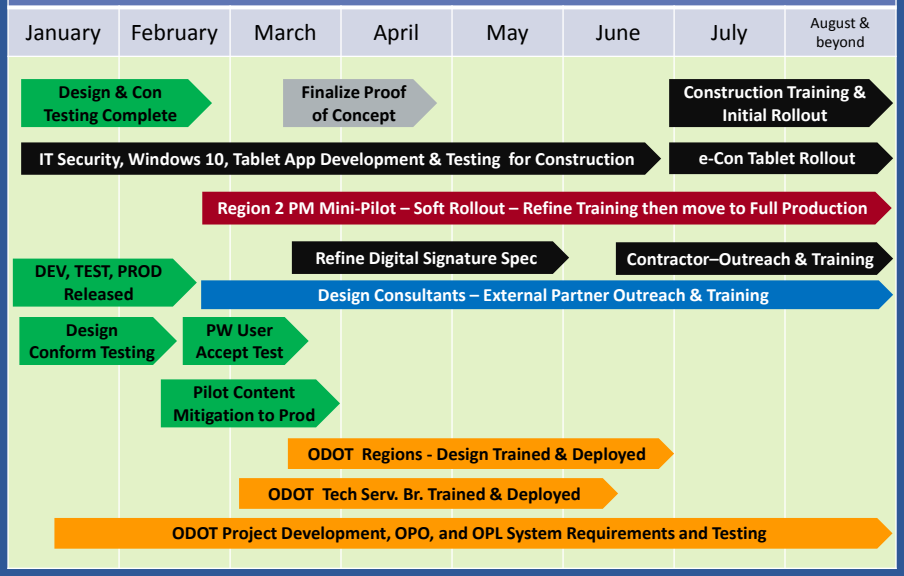
Document	Naming Convention
A/T Approval Request	731-0294_[first_last name].pdf
As Constructed Plans	AsConstructed.pdf
BOLI - Complaint	Complaint.pdf
Certificate of Materials Origin (CMO)	BI###_CMO#.pdf
Certified Payrolls	YYYYMMDD_Cert_PR_NAME of Contractor/Sub.pdf
Check Weights	BI033_CW_01.pdf

Snipped from Actual

User Access

- Current State:
  - ODOT and external users can use existing access methods i.e. tokens
  - User Access Gateway does not allow access for IE 10 systems
  - Not ideal for ODOT and contractors
- Near Future State (a few months):
  - **Final stages of testing now**!
  - No tokens to login to ProjectWise
  - Remote ODOT Users login through PW Gateway
  - Users accounts needed with ODOT and ProjectWise
  - The PW Gateway provides secure access through ODOT's Firewall
  - **Construction contractors** and consultants login through PW Gateway

2016 ProjectWise Schedule



R2 Salem PM office mini-pilot

Hi fellow future eCon folk,

I am Shane Ottosen R2 PM.

My office will be undertaking a mini-pilot starting this month to help with training de-bugging and refining ProjectWise Attributes.

I can tell you I am really, really excited about this opportunity!

Right-on!

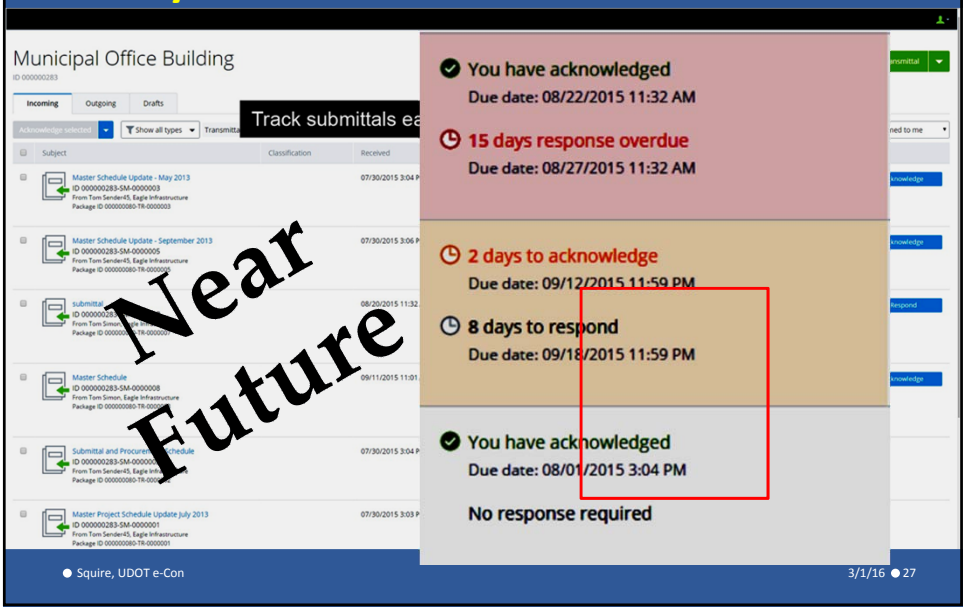
Implementation Strategy

- ProjectWise rollout be a "soft" approach
  - A readiness assessment prior to deployment
  - Deployment staged by Geography over a few months
  - 15 construction projects, 1 per PM crew
    - About 3 months after launch migrate some existing projects into PW - Contract Admin to determine with PM
    - CPMs and Local Programs to follow in 2017
  - Support by CAU PW Team, Support Desk and Field Services Unit

External Training

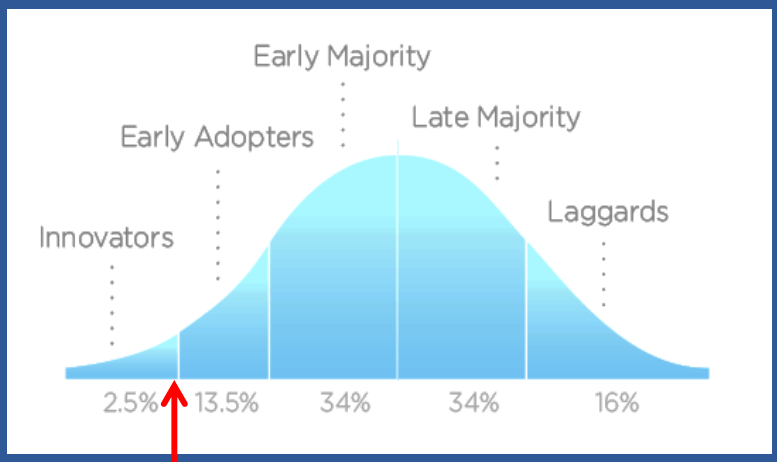
- Takes about 2 hours
- Contractor specific training
- Coming late Summer to early Fall
- Scheduled similar to Inspector Training
- Some differences for Construction vs. Design
- Design consultants will get the same training as ODOT design staff – if requested

Added Modules increase functionality as system evolves – PW Deliverables



Surface 4 in ODOT - IT Configuration Testing

Innovation Adoption Lifecycle



Construction is here within ODOT

Use if power fails

Thank you

UDOT and all for engaging

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