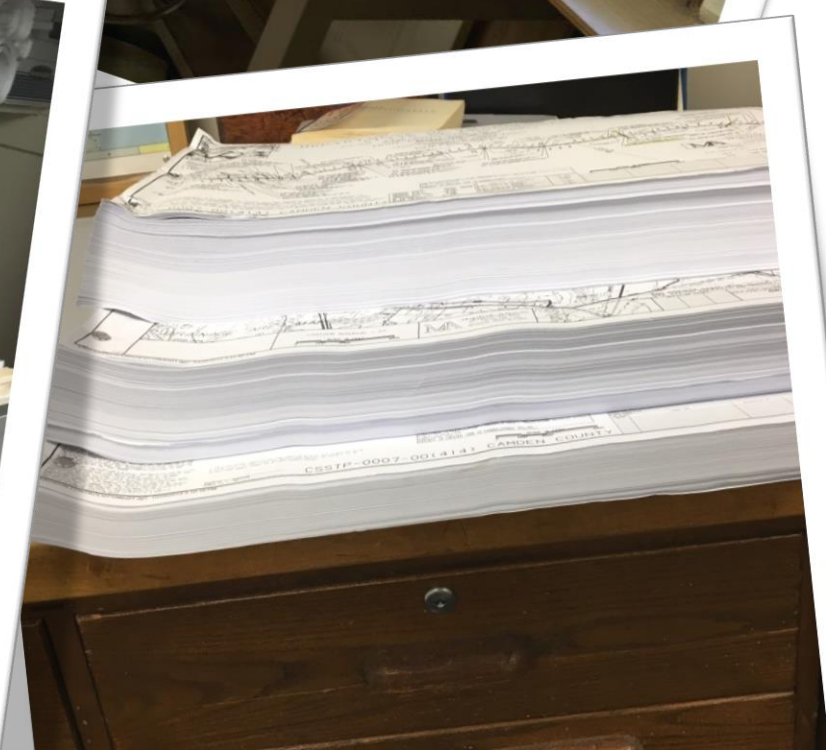


# e-Construction

Marc Mastronardi, P.E. , Director of Construction

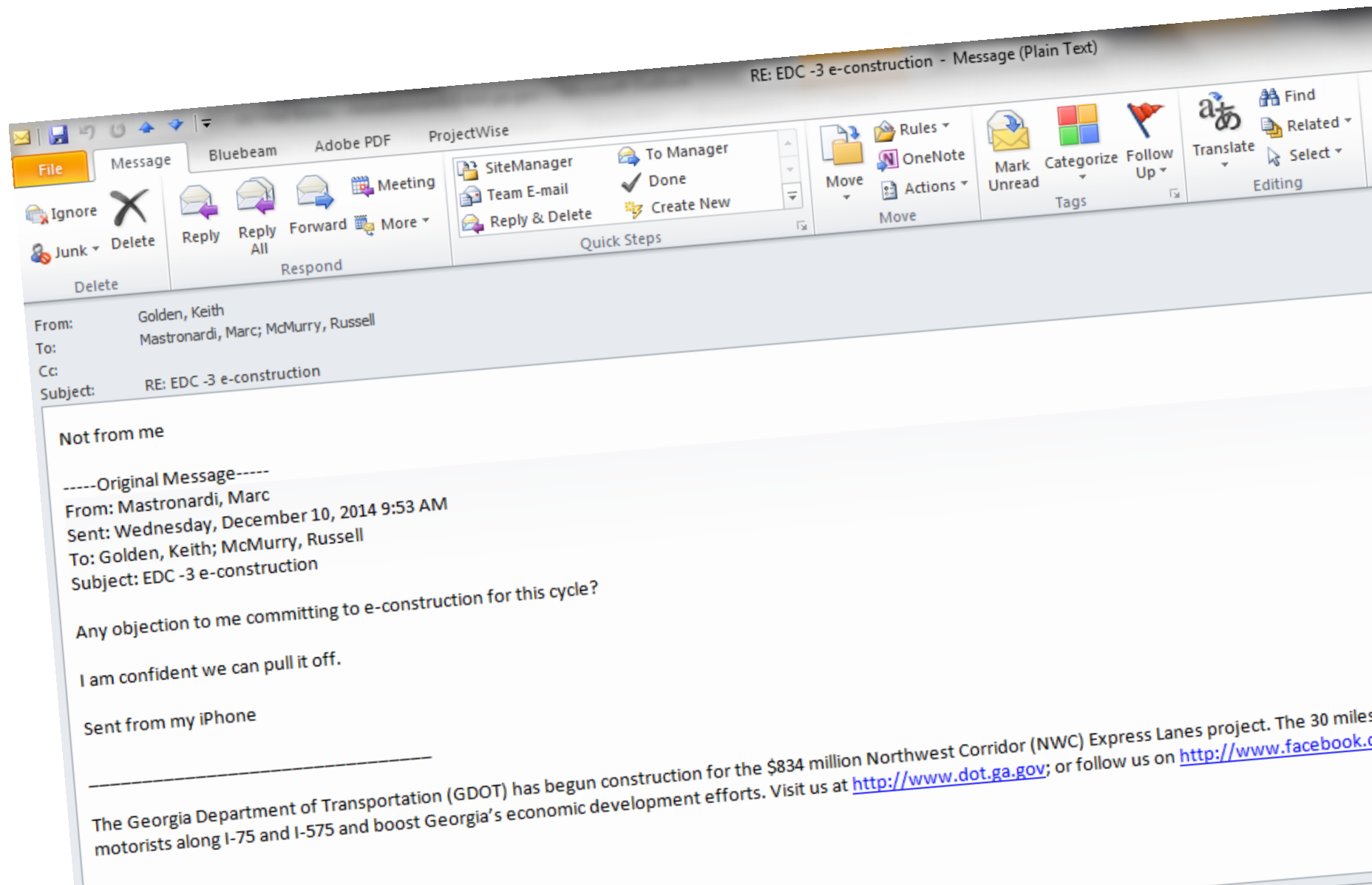


# e-Construction

- e-Construction is a paperless construction administration delivery process that includes electronic submission of all construction documentation by all stakeholders, electronic document routing/approvals (e-signature), and digital management of all construction documentation in a secure environment allowing distribution to all project stakeholders through mobile devices. (FHWA)



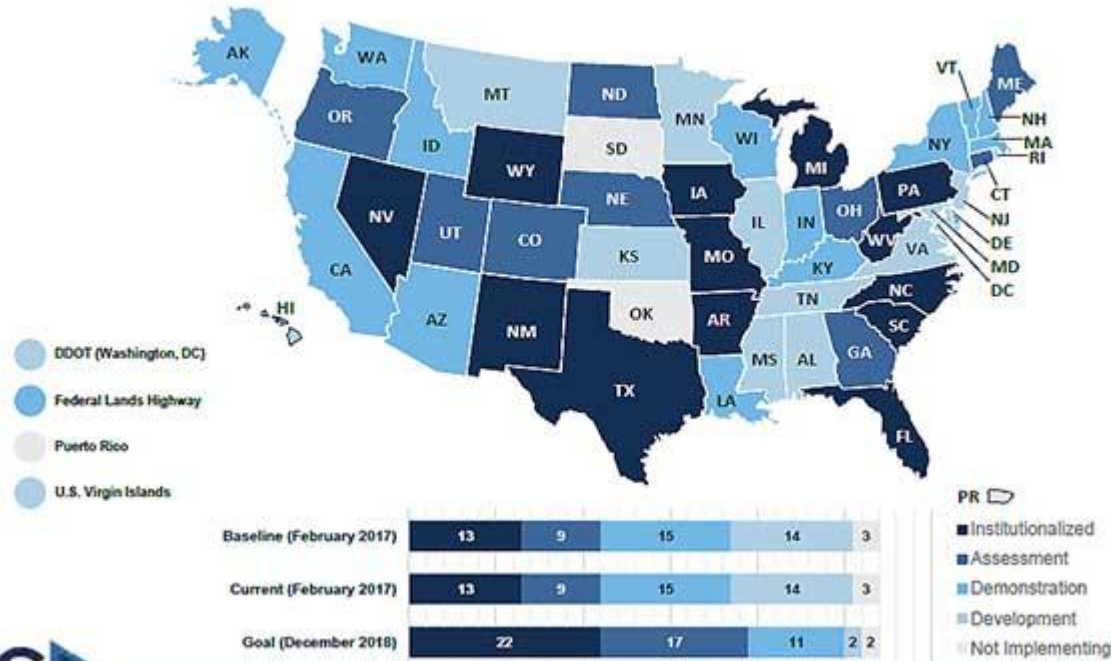
# GDOT's Efforts





# How We Measure Up

## e-Construction Implementation as of February 2017



# Broad Impacts

- Information Technology
- Engineering Division
- Construction Division
- Legal
- Accounting
- Districts
- Areas
- OMAT
- Executive Leadership
- Bidding Administration
- Record Management
- Industry Partners – Contractors, Suppliers, Producers
- Bonding Companies

# Good Timing

- In early 2015 separate but significant initiatives were underway in IT to create contract authorization software. Concurrently the Division of Engineering was advancing software for project records and digital plan archiving. These efforts conveniently aligned with the Construction Office's desire to move to e-Construction.

# Before

- Project daily inspection reports, construction pay estimates and our lettings have long been occurring electronically. Until now those efforts would result in a printed document to be handled further in a paper existence.
- Additionally we utilized:
  - Paper files
  - Paper plans
  - Paper contracts with ink signatures
  - Paper documents physically routed for approval
    - Paper copies of the above archived for record retention



# After

- Singular electronic file cabinet storing **ALL** records from concept to completion.
- Plans saved, viewed, marked up electronically.
- Contracts routed and authorized electronically by all parties, including electronic signature.
- Contract modifications processed electronically by all parties.

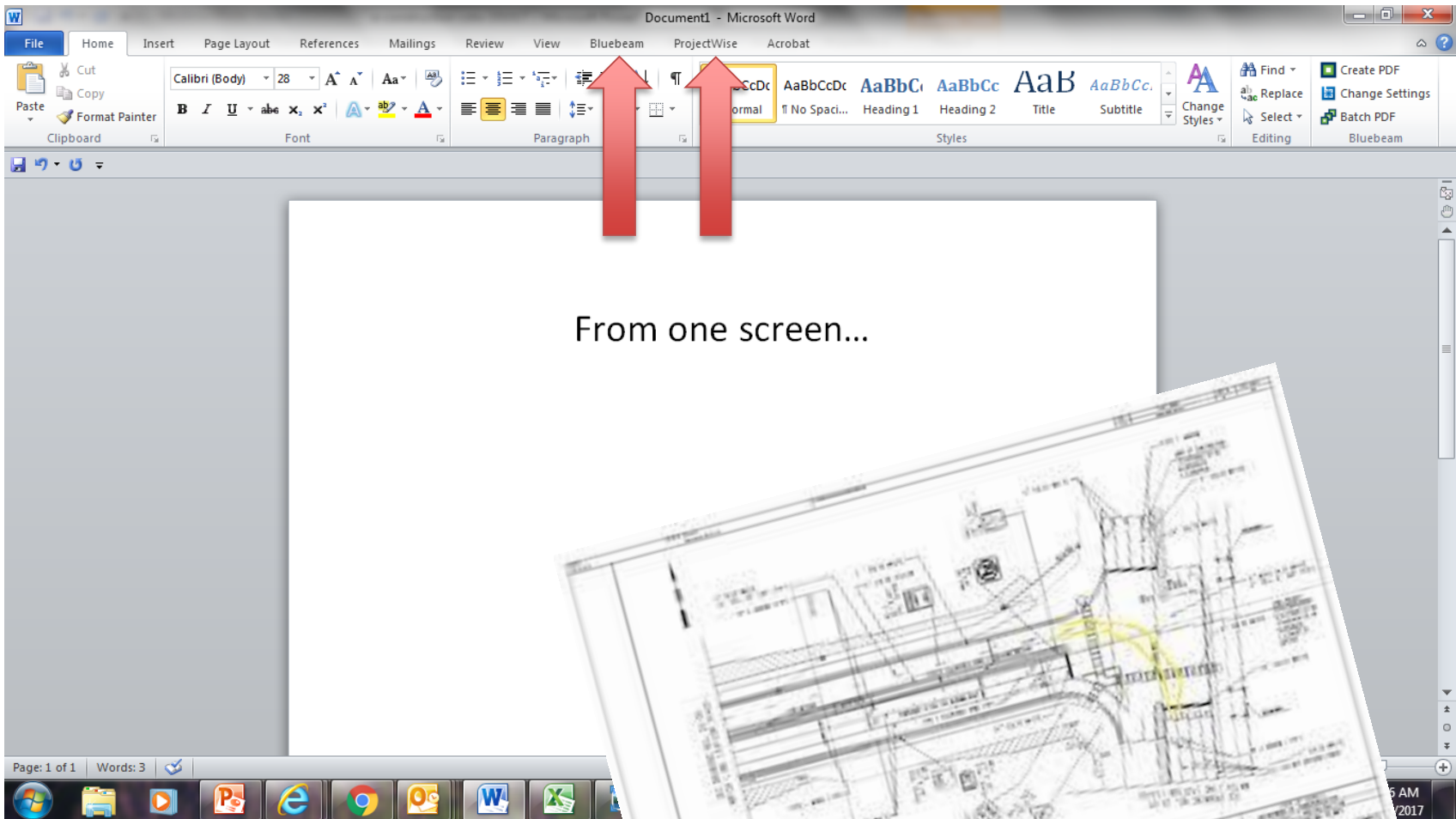
# Construction Project Field Equipment



OR



# Plans and Files

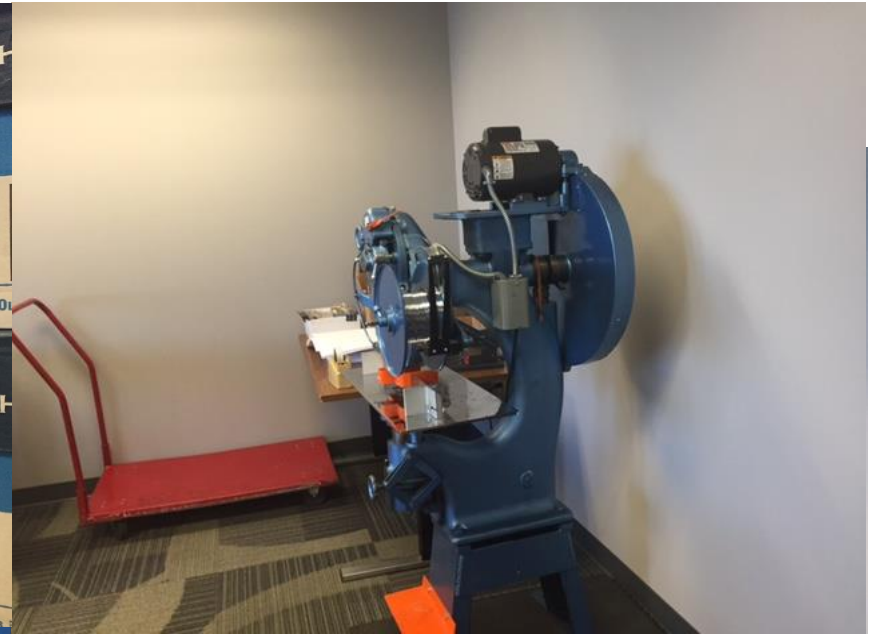


# Benefits

- Better communication and better record of communication.
- Easier record management.
- Contract modifications can be processed in under 30 days versus 60 days or more.
- Contract awards can be processed in 7 days versus 40 days.
- Ability to track progress of items needing approval.



# Saving Time and \$





# 647.13 miles

- Since our effort to move to e-Construction in December 2014 we estimate we have printed:
  - 14910 copies of contracts that average 250 sheets of paper each for a total of 3,727,500 sheets of paper!
    - When laid end to end lengthwise, we could cover the top of barrier wall separating inner and outer I-285 ten times!!
    - At \$3/ream of paper we will save ~\$7500 annually in contract printing alone.

# Federal Aid

- Utilizing our opportunity under FHWA's State Transportation Innovative Council, we applied for and received a \$100,000.00 grant from FHWA to advance e-Construction. We used these funds toward the purchase of tablets.
- Next spring we will be applying to FHWA for up to an additional \$1 million dollar grant to accelerate full implementation of e-Construction.

# What's Next?

- e-Ticketing
  - The Iowa DOT has piloted e-ticketing technologies, which eliminate the need for inspectors to collect paper tickets from truck drivers who are delivering materials to construction sites. This process improvement increases safety and efficiency at the jobsite.
  - Exploring the ability to apply this innovation to other items brought to our projects.
  - Integrate within OMAT for materials certification.

# Any Questions?