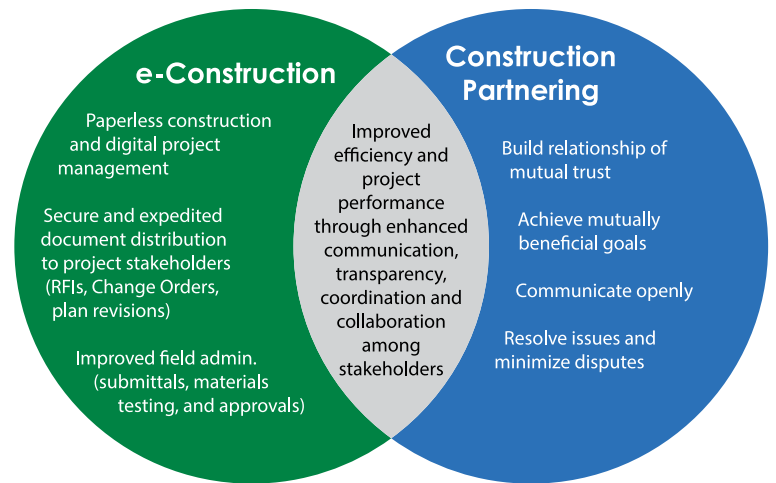




Paperless technologies enhance partnering among stakeholders on construction projects, improving communication and workflows while streamlining project delivery.

Transportation agencies are transforming the traditional, cumbersome, paper-based approach to construction document management into the electronic age using e-Construction technologies. With the increasing use of information technology made possible by advances in e-Construction, project stakeholders can also realize the opportunities and benefits construction partnering can provide in digital project delivery.

Through round four of Every Day Counts (EDC-4), the Federal Highway Administration (FHWA) is promoting e-Construction and construction partnering as practices that can be used in concert to help deliver transportation improvements smarter and faster. The commonalities and synergies between the two offer opportunities for enhanced success when used together.



e-Construction is the creation, review, approval, distribution, and storage of highway construction documents in a paperless environment. These paperless processes include electronic submission of all documentation by all stakeholders, electronic document routing and approval (e-signature and workflows), and real-time management of all documents in a secure digital environment accessible to all stakeholders through mobile devices and web-based platforms.

Construction partnering is a project management practice where transportation agencies, contractors, and other stakeholders create a team relationship of mutual trust and improved communications. Partnering builds relationships and connections among stakeholders to improve outcomes and successful completion of quality projects that are built on time and within budget, focused on safety, and profitable for contractors.



Construction partnering and electronic documentation are two means of connecting stakeholders to improve collaboration and project delivery.



e-Construction and Partnering: A Vision for the Future

STATE OF THE PRACTICE

EDC-3 promoted e-Construction as an effective way to transfer and use electronic documents in construction, and it has been successfully demonstrated using various tools and technologies in states nationwide. EDC-4 will continue to provide the core knowledge, support, and impetus for stakeholders to venture into and mainstream e-Construction while highlighting the tools needed for successful implementation.

Partnering has a very successful history in the construction industry, going back to the 1980s when it was first used by the U.S. Army Corps of Engineers and the Arizona Department of Transportation. Twenty-seven transportation agencies have since established partnering programs and are currently using partnering in highway construction projects.

BENEFITS

- ▶ **Increases Transparency.** e-Construction supports secure, expedited, and transparent document transmission, distribution, and storage. Partnering builds a relationship of mutual trust and an enhanced understanding of stakeholder roles and responsibilities, while resolving issues and minimizing disputes.
- ▶ **Saves Time.** Partnering strengthens collaborations that can reduce project schedules by eliminating misunderstandings. e-Construction decreases the delays inherent in paper-based project administration through secure and expedited collaborative communication.

- ▶ **Saves Money.** e-Construction saves paper, printing, and document storage and transmission costs. Partnering reduces project costs by minimizing change orders and claims through improved relationships, trust, and communication.

Return on Investment for Paperless Project Delivery

The documented 7-year e-Construction return on investment for construction management, project collaboration, mobile devices, and electronic bidding tools ranges from 200 to more than 700 percent. e-Construction time savings have averaged 1.78 hours per day, per inspector, and inspectors have collected up to 2.75 times more data. In addition, cost savings have been reported at about \$40,000 per construction project, per year. All of this adds up to improved efficiencies in the highway construction program.

RESOURCES

EDC-4 e-Construction and Construction Partnering: https://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/epartnering.cfm

FHWA e-Construction: <http://www.fhwa.dot.gov/construction/econstruction/>

AASHTO Innovation Initiative on e-Construction: <http://aii.transportation.org/Pages/e-Construction.aspx>

EDC-4 Summit Breakout Session: Fall 2016
https://www.youtube.com/watch?v=_XxvEQ8FT0E

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U.S. Department of Transportation
Federal Highway Administration

Every Day Counts (EDC), a State-based initiative of FHWA's *Center for Accelerating Innovation*, works with State, local and private sector partners to encourage the adoption of proven technologies and innovations aimed at shortening and enhancing project delivery.

