

CASE STUDY

# CTL Engineering Delivers Transparency and Efficiency with e-Construction Solutions



## BACKGROUND

CTL Engineering is an engineering consulting firm with locations throughout Ohio. Prior to pursuing an e-Construction solution for LPA projects, the firm used spreadsheets for project management. Issues with duplicate data entry, travel time, project set-up, and stakeholder reporting led CTL Engineering to seek out a real-time, cloud-based solution for construction project management and inspection.

## PARTICIPANTS



- + **Joe Warino, P.E.**, Chief Growth Officer
- + **Greg Kronstain, P.E.**, Regional Manager of Transportation Services
- + **Jeremy McIntire, P.E.**, Senior Project Manager
- + **David Ley, P.E.**, Construction Management Project Manager

## SOLUTION

The team at CTL Engineering leverages a mix of Infotech software solutions to achieve their goals:

- + **Bid Express®** for secure online bidding when the firm manages the bid process for clients
- + **Appia®** for construction management and inspection on LPA projects

## RESULTS

By using Bid Express and Appia to bid and manage local-let projects, the team at CTL Engineering has been able to expedite project set-up, eliminate unnecessary travel and data entry, and provide improved transparency and reporting to their clients.

Access to a comprehensive, searchable audit trail has also made handling disputes easier, resulting in roughly \$100,000 in savings on one project.

**\$100K**  
in savings on  
one project

# The Challenges of Paper + Spreadsheets

As Warino noted during our discussion, the infrastructure construction industry is not that far removed from doing everything on paper, so the associated challenges are still fresh in everyone's mind. The CTL Engineering team shared their perspective on the most common issues that arose from the days of paper and spreadsheet-based construction management and bidding.

## ON THE ACCURACY OF DATA:



**“That’s a recipe for disaster, when you have multiple people working off the spreadsheet... you get one gap between data entries or they’re not up to the most current version... it’s a cluster to find out where the issue was.” – Joe Warino**

As Warino outlined, managing a spreadsheet for daily reporting can be a nightmare due to a lack of access to shared, real-time information. Ley pointed out that a project administrator might accidentally get into a file and delete something. “It’s very nice when you don’t have to worry about losing something that you can’t recreate,” he said.

## ON TRAVEL AND TIME DELAYS:



**“You’re killing a day just to go find a piece of paper you need to validate a report.” – Joe Warino**

When we had this conversation, every person on the call was located in a different town throughout Ohio. The team highlighted how time-consuming this would be in a disconnected world, where project managers used to drive out to job sites for information, or inspectors had to return to an office to input report data. Ley provided an example of living in Dayton but requiring information from an Athens job site, which was a 5-6 hour round trip in the world of paper and spreadsheets.

## ON PROJECT SET-UP:



**“Local agencies may use write-ins on their bids, so we’re taking a PDF document, transcribing that into Excel, and then uploading the Excel file into Appia.” – Joe Warino**

When a job isn’t bid electronically, it’s a time-intensive process to upload the project information into the team’s project management platform. It requires manual transcription, data entry, and occasionally deciphering handwritten bids from contractors. Warino noted that the more project owners who require electronic bid submission on their projects, the more efficient the CTL Engineering team can be in project set-up – as well as the many other benefits associated with e-bidding.

## ON DISPUTE RESOLUTION:



**“It’s an accounting nightmare, going through [spreadsheets] line by line or entry by entry to try and reconcile.” – Joe Warino**

In the days of paper and spreadsheets, if CTL Engineering had a dispute with a contractor over performed work, it would mean an extensive process of looking through reports to verify information – and if the files couldn’t be found or corroborated visually, it may lead to costly change orders.

# How CTL Engineering Leverages e-Construction and e-Bidding Solutions

As Warino noted during our discussion, the infrastructure construction industry is not that far removed from doing everything on paper, so the associated challenges are still fresh in everyone's mind. The CTL Engineering team shared their perspective on the most common issues that arose from the days of paper and spreadsheet-based construction management and bidding.

## Project Set-Up

### Importing items directly from the awarded bid

**"Bid Express is the way to do it. It's an added level of efficiency for the owner and the construction manager on the back-end." - Joe Warino**

Instead of the painful, drawn-out process of transcribing handwritten bids into Excel and uploading them into Appia, the team at CTL Engineering gains efficiency by using two Infotech solutions, Bid Express and Appia, in conjunction. While not every project that CTL takes on is bid on Bid Express, the ones that are can have bid tabulations exported from the bidding platform and imported into the project management system for simple and seamless project set-up.

### Using custom daily reports to save time down the line

**"At the beginning of a project, you can actually go in and add custom fields to a daily report... so if my inspector is doing Maintenance of Traffic, I can go right to MoT and see what specific notes they put in there." - Jeremy McIntire**

McIntire shared how setting up a custom daily report at the onset of a project can save project

managers time in the long run. For example, McIntire can add a "Time Impact" field to the report template at the beginning of the project. If there actually is a Time Impact, the inspector can put their notes in that field. If there isn't, that field won't show up in the exported report for that day, leading to a more streamlined deliverable that's easier to review.

## Data Capture & Accuracy

### Centralized point of data collection

**"Inspectors are on site, in real-time, entering [data] in the field." - Joe Warino**

Gone are the days of inspectors having to return from the job site to type in daily report information that they just recorded out in the field. With Appia, information is captured once at the job site and then seamlessly synced with the cloud database. Not only does this result in significant time savings, it prevents the errors that can occur from duplicate data entry.

### Saving time with talk-to-text

**"The benefit of having talk to text is they're not having to write down**

**notes and type it in, there's an efficiency of time right there in data entry." - Jeremy McIntire**

The inspectors at CTL Engineering have the flexibility to use Appia on their phones, tablets, or laptops while capturing daily report information. To add even more efficiency to the daily reporting process, McIntire outlines how many inspectors will use the talk-to-text feature in Appia to expedite inspection. This process adds so much efficiency, the firm mentions this feature in their responses to Local Agency Requests for Qualifications and Letters of Interest.

## Project Management & Coordination

### Eliminating the need to travel all around Ohio

**"I was running my first estimate on a job we have that's further off... some items looked a little off so I was able to correct them and take care of them pretty fast. The job is an hour and a half away" - David Ley**

Ley and Warino both emphasized the fact that, prior to Appia, project managers would occasionally have to spend up to a day's travel time to go out and get a piece of paper from a job site to validate a report. In some

cases, an inspector may be able to fax a document or take a picture of a document on their phone, but the real-time syncing of Appia has streamlined the entire operation. "If you live in Dayton, and the job he's talking about is in Athens, and our office is in Columbus - think about that... now, it's like 'hey let's look in [Appia] and in minutes you have what you need,'" said Warino.

## Staying productive when working off shift

**"You could go weeks without even seeing a guy, it's really beneficial when you're working off shift."** - Joe Warino

CTL Engineering runs like a well-oiled machine when performing night work thanks to a little help from Appia. Inspectors, who often work at night, are able to capture data at the job site that's ready for the project managers to review when they come in the next morning.

## Diving into the data with ease

**"Having all the data at your fingertips and being able to produce reports to see where you are, or if there's a question on an item, or you're running into significant overruns and trying to project where you're going to be, that's where I see huge value."** - Greg Kronstain

Time savings and added efficiency often come up when discussing the benefits of using a cloud-based construction management platform like Appia, but equally important is the access to an accurate, comprehensive database. From a project management perspective, there's a peace of mind that comes with the transparency of project progress or the ease of pulling specific information. "To have the security and process that Appia provides, to me it provides an added level of comfort for ourselves, and more importantly, our clients," added Warino.

## Dispute Resolution

### Accessing a comprehensive, visual database

**"You can scan back through the photos pretty quickly and get back to a time frame... so I can sit there and count trucks for what he's billing me for and what equipment he's billing me for."** - David Ley

If things get to the point of a contractor dispute on a project, the CTL team has no problem relying on Appia to provide a (paperless) paper trail of work performed on the project. Daily reports are dated, searchable, and tied to photos the inspector took, which gives CTL the ability to provide incontrovertible evidence in the event of a claim.

## Stakeholder Reporting & Transparency

### Providing read-only access for increased transparency

**"Allowing read-only access and giving them the opportunity to check their reports and see what's going on and keep up with the progress, that saves us in the long run as well."** - Greg Kronstain

Appia comes with free read-only access, so firms can give project owners direct insight into project progress, in addition to ODOT on projects with federal/state money. "It's definitely streamlined the quality assurance process," added Warino. CTL Engineering's clients appreciate the added level of transparency, as well as the ease of navigating the software and its multimedia components. "They really love the Photos button, the module where you can just click on pictures and see the photos of the job. It streamlines their review process," said Warino.

## How easy is Appia to learn and use? CTL Engineering weighs in.

**Ley:** Everything's labeled nicely on the left side, so it's pretty easy to find. We've used a few different ones and some of them are very clunky. Appia is extremely intuitive.

**Warino:** The clients appreciate it also, they have a level of comfort with it. They can see everything, it's very easy to navigate, it's transparent.

**McIntire:** The system itself is very user-friendly. With very minimal training, people can understand it.

## How the savings stack up

Ley shared an example of how Appia helped save ~\$100,000 on a recent job. With an Appia license costing \$2,000 a year, the return-on-investment is significant.



**"We were disputing cost analyses. He wanted \$500,000 over about a dozen items, I was at around \$300,000 over the same items. I was able to go back through the diaries and the photo log in order to resolve it, so it really helped quite a bit. In this case, it amounted to probably \$100,000 in savings. We ended up at \$400,000."**

# The Competitive Advantage of Appia and Bid Express

## Simplifying joint efforts in the state

Once upon a time, the use of Appia and the efficiencies it brought offered a clear competitive advantage to CTL Engineering. But as the industry evolves, use of a cloud-based construction management platform has almost become the expectation among clients. So, while Appia is still included in CTL's letters of interest, the current advantage is in simplifying collaboration:

"It's good for the industry. Makes it a lot easier to partner and do joint ventures and work with other firms on projects and have that level of continuity between different inspection groups and management types," said Warino.

## Handling bid evaluation for project owners

While one competitive advantage may be waning, CTL Engineering has found a new differentiator by using Bid Express in conjunction with Appia. CTL Engineering is able to handle the bid advertisement and award in Bid Express, then import the awarded bid into Appia for evaluation and to streamline project set-up. "It's easier for the owner, it's easier for us, and it's way more efficient. That's the cultural shift we keep pushing for," said Warino.

**"The client can see what's happening in real-time so we've used it as a selling point in the past. I think it's great software."**

**JOE WARINO**

**"Bid Express helps us win projects because it's another thing we're taking off the clients plate."**

**JOE WARINO**

## What's next for CTL Engineering?

### Incorporating Doc Express® for approval processes

Appia? Check. Bid Express. Check. So what's next on CTL Engineering's e-Construction journey? Making use of Doc Express, the free construction document management platform that comes with every Appia license. With Doc Express, CTL Engineering can execute on a full digital project delivery process.

**"I've dabbled in Doc Express, especially the approval processes. With a little bit of additional training to understand it further, I think it would really help to bring it cradle-to-grave where I don't have to download a PDF and send it to someone to sign, they could just go to [Doc Express] and sign it with a digital signature. I think we need to expand upon that,"** said McIntire.

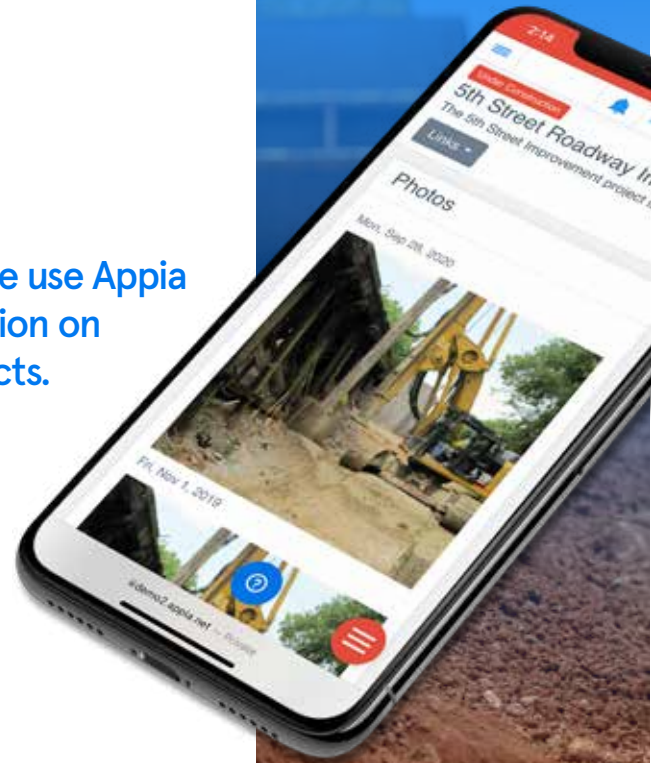
# Appia®

## Standardize and automate the construction administration process

Local public agencies and engineering firms nationwide use Appia to streamline construction administration and inspection on federal, state, and locally-funded infrastructure projects.

- + Mobile field inspection
- + Comprehensive daily reporting features
- + Automated item & material tracking
- + Efficient payment management
- + Real-time data collaboration

Visit [infotechinc.com/appia](https://infotechinc.com/appia) to learn more.



# Bid Express®

## Streamline construction bidding and general procurement

Amplify the quality and quantity of your bid submissions with the e-bidding platform that streamlines the solicitation process for agencies and vendors everywhere.

- + Error checks and omission alerts to prevent non-responsive bids
- + Instant bid tabs with exportable results
- + Templates to expedite bid set-up
- + Bid opening from any internet-connected device
- + No installation and simple training

Visit [infotechinc.com/bidexpress](https://infotechinc.com/bidexpress) to learn more.

