

Charleston County Improves Community Safety, Project Visibility, and Financial Tracking with Digital Construction Management

BACKGROUND

Charleston County Department of Public Works manages a large and complex construction program spanning roadway, sidewalk, and safety improvement projects across the county.

Following multiple pedestrian incidents, including a fatality, along the Woodland Shores and Maybank Highway corridor, the County initiated a safety-focused sidewalk and pedestrian improvement project.

At the same time, increasing project volume, the need for consultant collaboration, and multi-source funding requirements exposed limitations in spreadsheet-based construction oversight and delayed visibility into project performance.

SOLUTION

Charleston County standardized its Construction Engineering and Inspection (CEI) processes using Appia, providing access to its own team and its consultants.

Daily field reporting, quantities, photos, testing data, and financial tracking were centralized in a single system, providing real-time transparency, funding accountability, and thorough documentation across projects of all sizes, including the safety improvement projects on Woodland Shores and Maybank Highway.

RESULTS

By using Appia, Charleston County:

Improved real-time visibility into active construction

Accelerated pay estimates and reporting

Strengthened financial and funding compliance

Ensured long-term documentation for audits, claims, and legal defense

On the Woodland Shores/Maybank Highway projects, these capabilities supported a complex, multi-funding-source safety initiative driven by community needs.

“The whole project is here. From groundbreaking to ribbon-cutting, it’s all here.”

BUCK DUKES, JR.
CONSTRUCTION MANAGER, CHARLESTON COUNTY

Getting to Know Charleston County

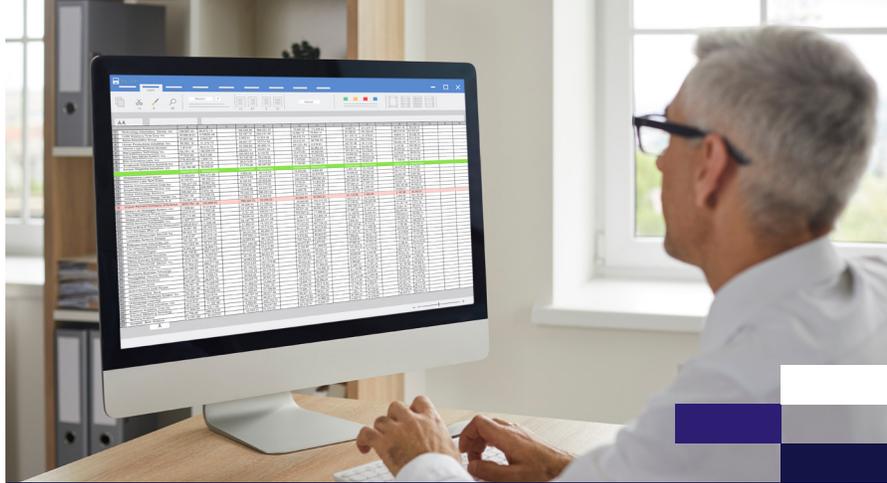
For this case study, we spoke to Buck Dukes, Jr., a colorful construction manager who keeps a stuffed alligator at hand to dress up and prank his staff. Dukes provided background information on Charleston County, which manages a complex and active local road program overseeing dozens of concurrent projects. Typically, the County:

- + Manages 20–40 active construction projects at any given time
- + Delivers approximately 25+ projects annually
- + Works extensively with consultant CEI firms
- + Coordinates funding from federal, state, county, gas tax, sales tax, and utility reimbursement

Workload has increased for the County in recent years, particularly following the pandemic and the surge in infrastructure funding from the Infrastructure Investment and Jobs Act.

“Since 2020, we’re probably doing twice the work we were doing... just a little over 25 projects a year,” said Dukes.

This increase in project volume meant that spreadsheets simply weren’t cutting it.



Key Issues with Spreadsheet-Based Project Management

Dukes and his team experienced a number of issues with spreadsheet-based management of CEI data that pushed Charleston County to look for a digital solution.

“I manage our CEI program, and back then, I kept an Excel spreadsheet. I had pretty good information, but it was information that I had to put in, usually at the end of the month.”

Dukes is good at what he does – all of the necessary information was there, but the nature of spreadsheet data entry limited real-time visibility into project activity. The downsides of this process galled Dukes, his team, and County leadership alike.

“Our project managers and upper management, I don’t think they were completely comfortable at all, not always knowing what was going on. So Appia has given them the warm and fuzzy.”

Other issues with the spreadsheet-based process included:

Delayed Issue Discovery

Weekly or monthly reporting cycles meant problems often surfaced too late to correct.

“Sometimes you wouldn’t find out a problem until Friday afternoon, when it’s too late to do anything about it.”

Documentation Challenges

Many County projects are delivered in partnership with SCDOT, requiring long-term record retention.

“Problems don’t always show up six months or a month after you finish the job. Problems start showing up a year, two years, or something later. You have to maybe FOIA it.”

Time Inefficiency

Without real-time, collaborative access, Dukes was responsible for sharing information with project managers, a time-consuming process.

“If a project manager wanted to know something, I had to go open up a spreadsheet, make sure it was up to date, and send it or share it somehow with him.”

Standardizing Construction Engineering & Inspection Work with Appia

Charleston County explored various digital solutions and landed on Appia to standardize its CEI workflows. One of the advantages that Appia offered was the ability to directly involve the County’s consultants in the platform for improved reporting and collaboration.

“One thing we’ve been able to do with Appia is to easily integrate our CEI consulting staff, giving them a license and a seat in there so we’re getting their information quickly,” said Dukes. **“They’re entering their information daily into Appia so that our project managers here can see it.”**



The County is leveraging Appia on projects of all sizes, from a \$50 million interchange to the Main Road Segment A project, a \$400 million project that happens to be the County’s largest ever. Resurfacing, traffic control, you name it - though one urgent project in particular brought Appia’s benefits into greater focus.

PROJECT FOCUS

Safety Improvements on Woodland Shores and Maybank Highway

Sometimes, a tragic incident motivates a community to call for infrastructure improvements, a call that the County is happy to answer.

Two unfortunate pedestrian incidents – a hit and run on county-owned Woodland Shores and a fatality on state-owned Maybank Highway – led the public to call for safety improvements like sidewalks and a designated pedestrian crossing, complete with flashing lights.

“The one on Woodland Shores, where the young lady got hit, was about a mile-long road. It was inches, maybe two feet off the road, so there was no place to walk... and so the citizens said, ‘we want some improvements,’” said Dukes.

Funding Management

The urgency for safety improvements to Woodland Shores and Maybank Highway motivated one of South Carolina’s senators to push for federal funding from Washington. They got it, with the South Carolina Department of Transportation also contributing funds.

While these funds are crucial, they also increase the complexity of managing and reporting on the project. That’s where Appia came in. All in all, the project involved:

- + Federal funding
- + State funding
- + County taxpayer funding
- + Gas tax and sales tax programs

“There’s a lot of pots of money in there, where we’re working on reimbursements right now, and Appia helped with that... This is going to be a \$3.8 million job, and if we do not do the funding correctly and keep all the data, we’d have a chance of losing some of that funding,” Dukes said.

With tools for bucket-specific fund tracking and funding caps, Appia has helped to support project delivery, allowing the Charleston County team to focus more on execution than paperwork in bypassing spreadsheets.



“It would have been multiple spreadsheets, trying to split the money of what share comes from which one,” Dukes said.

Instead, the County could demonstrate organized, auditable records.

“We can show our elected officials who can go back to their constituents and say, look, we are on schedule.”

Community Impact

The public is already pleased with the progress and is looking forward to safer roads in their community.

“We’re only about halfway through with our sidewalk on Woodland Shores, and people are already stopping and saying, ‘it looks great, thank you.’ That’s when you get to feeling good, when the public turns around and sees what you’ve done and says, ‘hey, great job, we appreciate it.’”

The Program-Wide Benefits of Appia

Dukes shared several ways that Appia is helping Charleston County with everything from transparency to time savings.

On real-time transparency

“It’s very transparent. It’s real-time data versus, you know, a week... [Project Managers] can open it at any time, look in Appia and find out what went on with their projects.”

On time savings & efficiency

“It’s saved me hours because the project managers can just go look at it.”

“Our payouts are seamless, very quick, because we can send reports to the contractor very quickly as a draft estimate for him to verify his quantities and get his information right.”

On mitigating risk

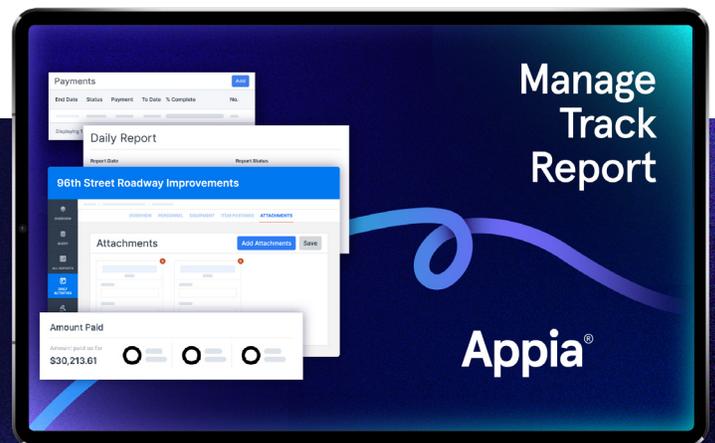
“A year from now, if somebody’s getting sued, we can go back to our report [in Appia] and hand it to our lawyers... it makes it a lot easier, and our liability is a lot less.”

On compliance & auditability

“A lot of the projects we do are with either the South Carolina DOT or with different municipalities. When we finish, it’s easy for us to download that information into a format that they can use... we can load it straight into the DOT portal.”

Long-Term Confidence in Appia

The Charleston County team has used Infotech solutions for 10 years, and has seen functionality grow and evolve along with their own department.



At this point, staff across generations have adopted the system, “from 70ish years down to 25 years old,” said Dukes.

In this time, Appia has become more than a construction management tool – it’s a foundation for public trust, financial accountability, and safer communities.

“Having tools that make my job easier to do for citizens, for the public, is what makes it enjoyable.”

Learn more about Appia at infotechinc.com/appia