



Telecommunications eBook

Remote Sensing Use Cases for Telco Projects



A I R W O R K S



EMBRACING INNOVATION FOR FASTER TELECOM PROJECT DELIVERY

Top-Tier Telco Firm Sends 20-30x More Engineered Miles to Permit Each Month Using LiDAR and AirWorks

CHALLENGE

Manual walkouts have historically served as a reliable industry standard. However, experienced field techs are retiring, leaving a green workforce under pressure to turn around an increasingly higher volume of projects. In order to maintain quality while boosting efficiency, a leading telecommunications firm realized something had to change.

Recognizing that LiDAR could be a valuable alternative to manual walkouts, they sought out a third party for 3D site scans and data processing. While outsourcing reduced reliance on field techs and returned accurate base files, this particular process was expensive with limited potential for scaling up. Additionally, slow turnaround times were bringing work to a standstill.

“We went from walking projects out, which was a problem, but we would get field production every day of the week and keep the CAD/design teams working weekly...to using a LiDAR application, where we would not get production for up to 30 days, which created a big backlog” said leadership.

The firm decided it was time to take back control by investing in their own LiDAR unit. However, data collection was only half the battle. Instead of being able to focus on solving permit challenges, team members were now tied up processing data and manually tracing features to create line work.

Additionally, outsourcing yielded disappointing results in quality and efficiency. That’s when the leadership team came across AirWorks. After learning more about its AI feature extraction capabilities, he was ready to see if autonomous line work could be the key to alleviating their early-stage bottlenecks.



SOLUTION

They now combine LiDAR data with AirWorks' AI-enabled services to create fast, actionable GIS-enabled permit and construction documents. Their typical workflow includes gathering point cloud data via drone, extracting features through AirWorks, and field-verifying output. Then, their designers seamlessly integrate the data into accurate, interactive GIS designs, providing clients with insights and versatility far beyond typical 2D plans.

Exploring and capitalizing on new technology has yielded massive gains for the firm's team. Previously, manual walkouts allowed them to complete approximately 3 miles of fieldwork per day per person or team, leading to around 10 engineered miles each month. **With internal mobile or drone LiDAR data collection and AirWorks' processing, they are now sending 200-300 miles of completed projects to permit per month.**

BENEFITS

For this telco firm, the benefits of AirWorks extend far beyond output. In such a relationship-driven industry, leadership is always conscious of personalization in the services they give and receive. AirWorks brings new levels of customization and flexibility to their business while also contributing to their ability to produce higher turnkey GIS deliverables. It's no surprise that previous clients keep coming back, while new ones keep seeking them out.



FREED UP FOCUS FOR
PERMIT CUSTOMIZATION



PROVIDING LONG-
LASTING VALUE



BUILDING A PARTNERSHIP
BEYOND THE CONTRACT



EXPEDITING
INSTALLATIONS



Freeing up focus for permit customization

For the telco firm, the benefits of AirWorks extend far beyond output. In such a relationship-driven industry, leadership is always conscious of personalization in the services they give and receive. AirWorks brings new levels of customization, flexibility, and value to their business. As a result, previous customers keep coming back, and new clients keep seeking them out.



Providing long-lasting value

Their team pride themselves on providing their clients the highest quality deliverables and services. For leadership, that means turning over actionable GIS data - not just 2D plans.

“WE WANT TO HAVE A GIS PRODUCT THAT PEOPLE CAN TAKE WHEN WE’RE DONE AND USE IT STILL. IT’S NOT JUST A PIECE OF PAPER THAT GETS THROWN AWAY,” explained leadership.

“NOW, THEY CAN ACTUALLY TAKE OUR [GIS] DATA AND USE IT IN THE SALES AND MANAGEMENT OF THEIR PRODUCT FOREVER, IT’S ALWAYS THERE.”

As an ESRI silver partner, AirWorks’ platform easily integrates with arcGIS and other design software, making it an easy choice to speed up processes while also delivering more value to the client.



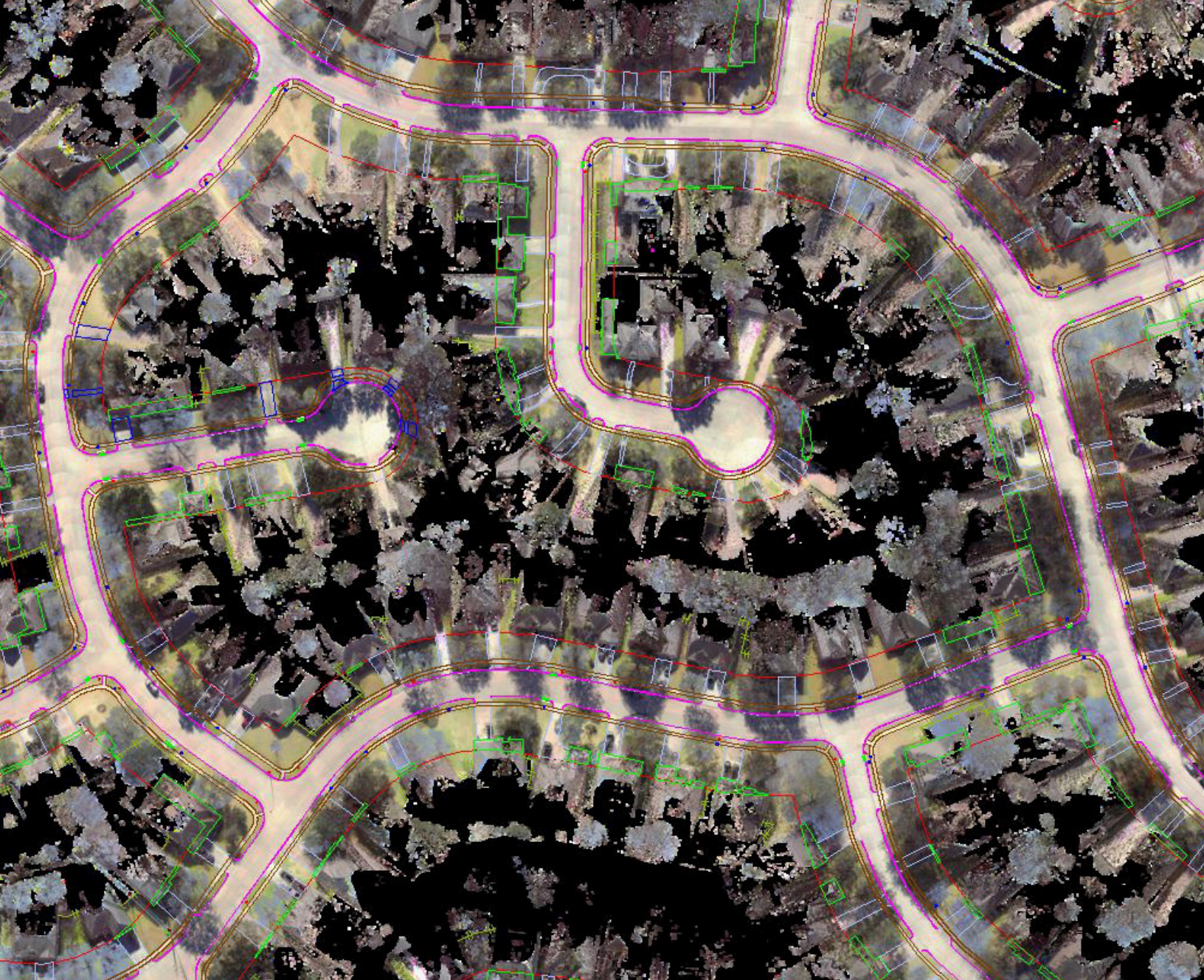
Building a partnership beyond the contract

What makes this collaboration so successful is that it’s more than just a contract. The firm’s leadership values the partnership and personal relationships they’ve built with the AirWorks team and appreciates the courtesies AirWorks has extended, such as flexibility on a custom pricing plan. They’re confident they can trust AirWorks to meet and exceed contractual expectations, just like AirWorks can trust their team to do the same. At the end of the day, both parties recognize the value of a handshake over a signature.



Expediting installations

Delivering 200-300 miles per month creates wins all around. the firm’s streamlined workflow is catching the eye of more and more providers intrigued by the prospect of compressed timelines and expedited fiber installations. As a result, they are steadily growing business, providers are seeing a quicker return on investment, and end users are enjoying accelerated access to a valuable service.



FUTURE

Speed. Efficiency. Value. Comradery. For this telco firm, the proven benefits of working with AirWorks are opening doors to endless potential in the telecom industry. Already doing national work, leadership has their sights set on increasing project sizes from a few hundred miles to several thousand miles. They believe international work could also be within reach.

**“NOW THAT WE’RE HONED IN, THERE’S NO STOPPING
WHAT WE CAN DO AS A TEAM.”**



EASY-TO-IMPLEMENT SOFTWARE SOLUTIONS IN THE BUILT WORLD

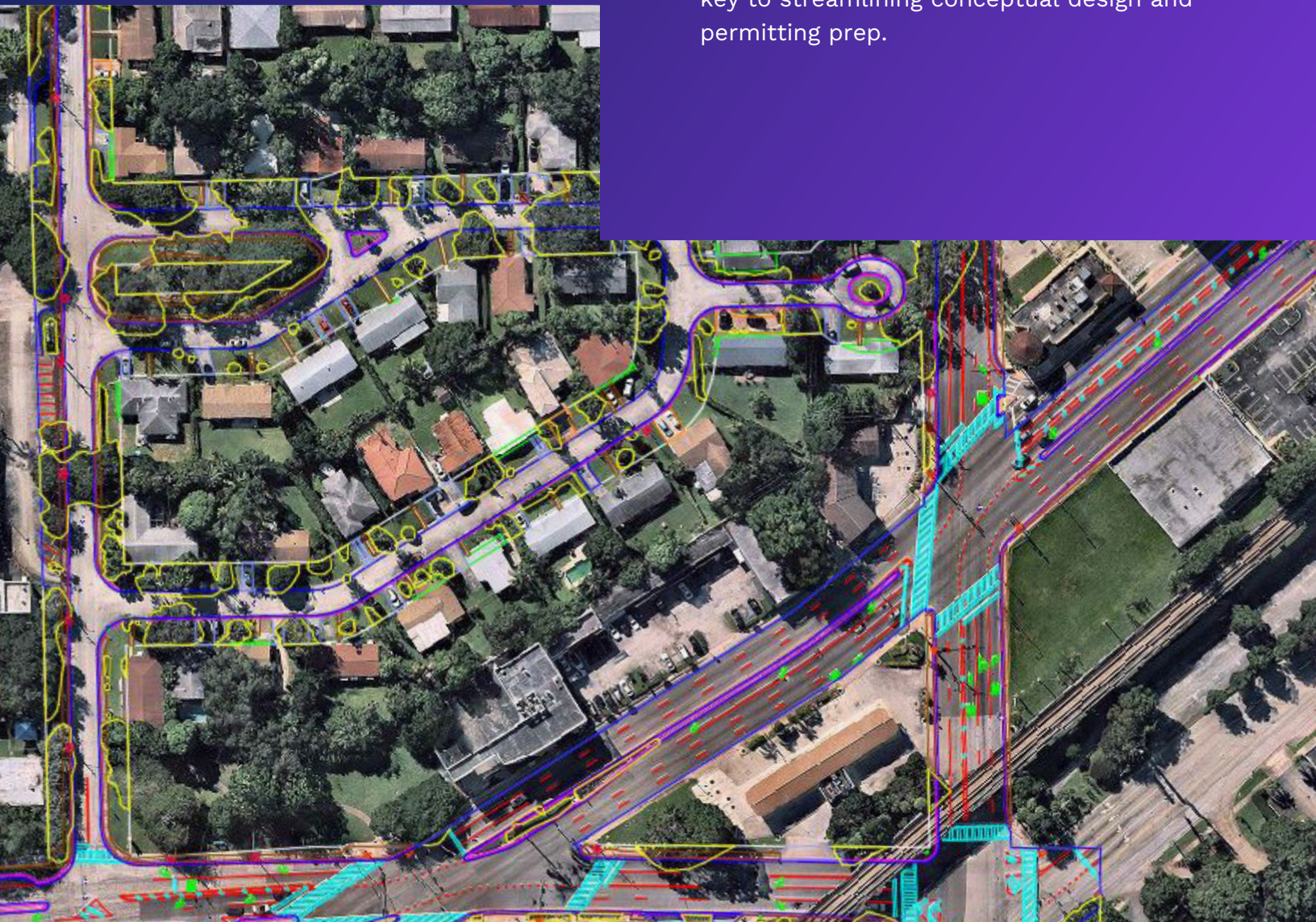
How One Infrastructure Construction Firm is Pushing Power Projects to Permit up to 50% Faster with AirWorks

CHALLENGE

As the infrastructure construction team dug into planning and permitting, their initial, labor-intensive process went something like this: designers created conceptual plans based on open GIS sources with minimal features. Then, drafters were faced with manually extracting the remaining dense urban site features from satellite imagery to meet right-of-way (ROW) permit requirements.

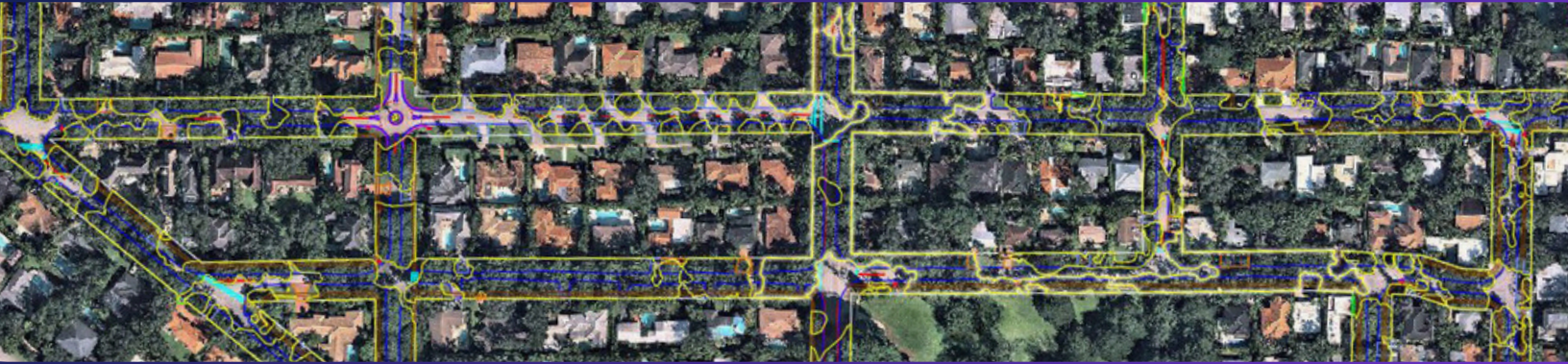
The result? A time-consuming design and permit prep process.

With payments hinging on permit approval and the possibility of designs causing setbacks during construction, leadership knew these early-stage delays could be costly. Addressing these issues would be crucial in handling the high project volume and aggressive timelines. When they came across a Facebook ad for AirWorks, they realized AI drafting software might be the key to streamlining conceptual design and permitting prep.



AirWorks has revolutionized the firm's conceptual design and permitting phases, allowing their teams to turn out more projects faster. Previously, it took 3-5 weeks to turn around an individual permit package. Now, with AirWorks data, the process takes a maximum of 2-2.5 weeks. For leadership, the benefit is clear:

“From where that team started to where it is now is a **night and day difference**. The amount of work they're able to perform [with AirWorks] is **significantly more than what they were doing [before].**”



BENEFITS

The benefits don't stop at time savings. Starting projects with comprehensive, AI-developed site plans produced with high-quality Nearmap aerial imagery has allowed their power team to do more with less while improving the quality of conceptual designs and increasing confidence in plan accuracy. Additionally, the company and AirWorks collaborated on a customized feature that has improved user experience for uploading ROW files for processing.

Real Benefits with Collaboration



+ DOING MORE
WITH LESS
AND SAVING



+ IMPROVED
CONCEPTUAL
DESIGNS



+ INCREASED
PLAN
ACCURACY



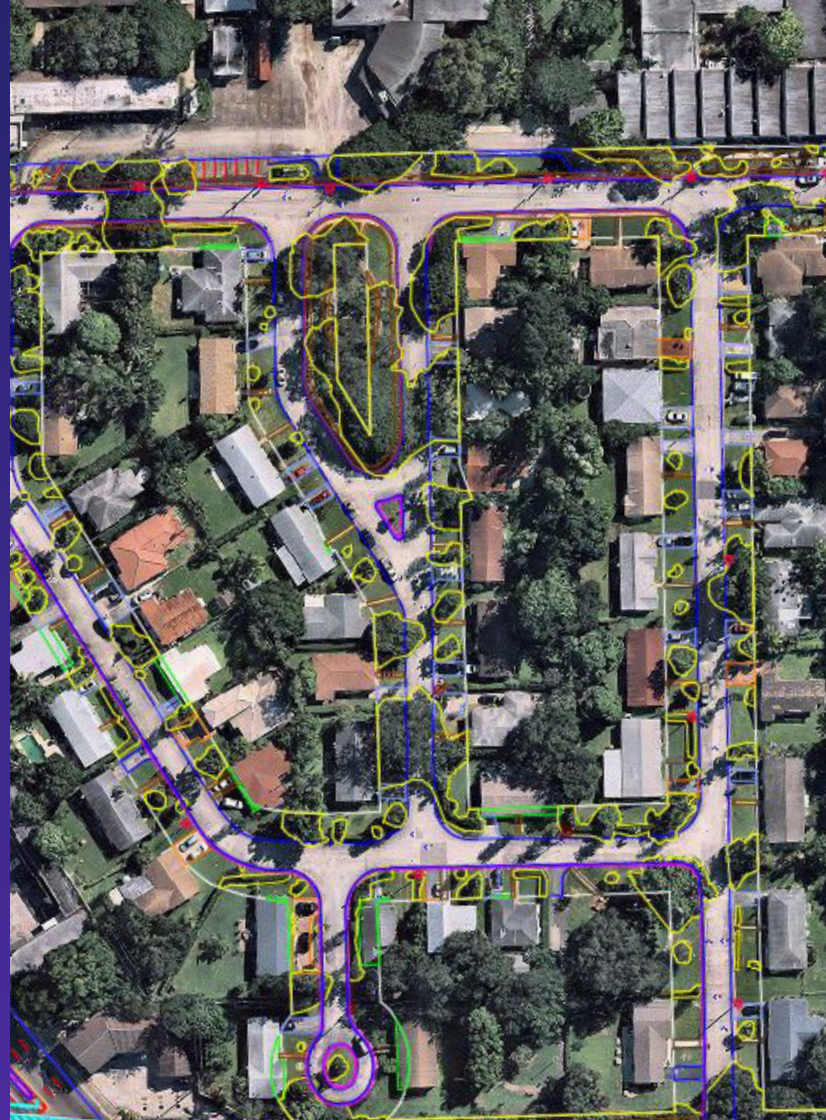
+ CUSTOMIZED
USER
EXPERIENCE



+ Doing More with Less and Saving

Without AirWorks, they would have needed to expand their teams to keep up with project volume. Teaming up with AirWorks is cost-effectively boosting production while reducing the need for recruiting, hiring, and training.

“We’re able to do more with a fewer number of designers – it’s not only a time savings but an overall cost savings. **What we pay per project is significantly less than the additional manpower that would be needed to handle these ourselves.**”



+ Improved Conceptual Designs

Developing conceptual designs with a more comprehensive site plan that includes features from AirWorks’ 14+ layers means their team can identify potential field interferences from the start. A more informed initial design means earlier permit submittals and smoother permitting and construction phases. Fewer changes down the line reduce timelines and allow the team to tackle more projects – ultimately resulting in faster payouts and bigger profits.



+ Increased Plan Accuracy

Collaborating with technology eliminates the pressure of manually identifying and drafting intricate site features, like manholes, fire hydrants, driveway aprons, and sidewalks, with positional accuracy. With AirWorks’ patented AI feature extraction and human-in-the-loop QC, designers can be confident that they are working with deliverables that accurately capture the expected site features. At the same time, drafters can focus their time and energy on other aspects of the permit process and more valuable, thought-driven tasks.



+ Customized User Experience

The firm's underground utility projects run along extensive ROW corridors. To create the files for upload, they were spending a significant amount of time creating large polygons encompassing a permit-required buffer around the ROW. They envisioned a way that could make the process easier, and based on AirWorks' partnership approach and the easy rapport they developed with the team, they felt comfortable bringing it up.

The firm pitched the idea of being able to select a processing area based on a centerline, which would then automatically encompass the buffer on either side. Understanding how this would significantly streamline the preparation of ROW files for processing, AirWorks' software team got to work and made it happen. Now, this client and future utility clients can enjoy an easier, faster, and more credit-friendly process for selecting a ROW based on a centerline with an automatic buffer.

"The fact that [AirWorks is] open to potential improvements and [has] the team in place to get those done spoke a lot for the company."

FUTURE

They believe AirWorks will be pivotal in helping their team meet the targeted yearly increases throughout their massive Florida underground power conversion. Meanwhile, they're also working on spreading the word internally. The cost and time savings numbers and positive experiences have caught the attention of their fiber division, and AirWorks is on their radar as they gear up for permitting phases on upcoming projects.

Impending urgent changes in power infrastructure can't wait for the workforce to catch up with demand. Leveraging technology in planning and permitting phases can help industry leaders meet tight deadlines and keep up with high project volume. Contact AirWorks today to see how we can help you deliver more power projects faster.





IMPROVING SAFETY AND COMPLIANCE IN A FAST-MOVING WORLD

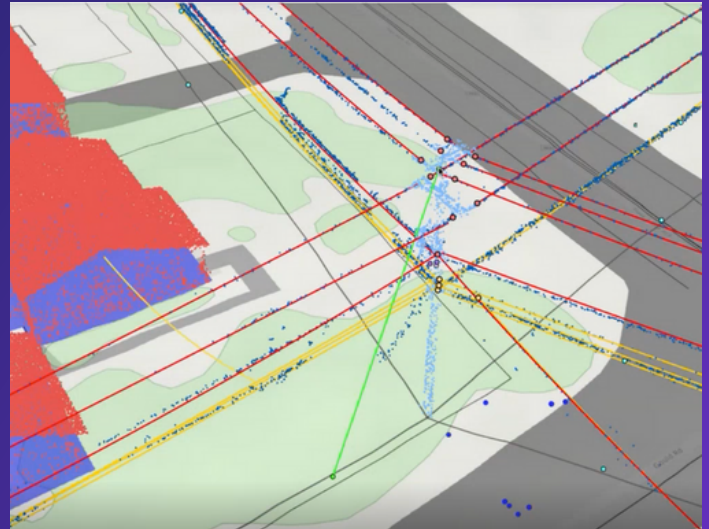
Implementing LiDAR and Intelligent Data Processing to Recognize Telco Safety Compliance

CHALLENGE

By law, utility and power lines must maintain a safe clearance from the road, buildings, natural elements, and most other constructed or naturally-occurring obstacles. The National Electrical Safety Code (NESC) outlines safe operating clearance distances for nearly all possible situations, including:

- Road clearance (suburban/city)
- Road clearance (rural)
- Clearance between power and communication cables
- Clearance between wires and light fixtures

Determining these clearances, and identifying potential violations, is a time-consuming element of the walkout process.



Utilizing the AirWorks software, a client can map and identify potential clearance violations via digital twin, working through an easily earmarked list of conflicts. This eliminates days of costly field work while improving the accuracy of these safety concerns.

