by: Rob Sinclair

Unlocking the Power of Reality Capture: 5 Ways AI Drafting Is Transforming Surveying Workflows
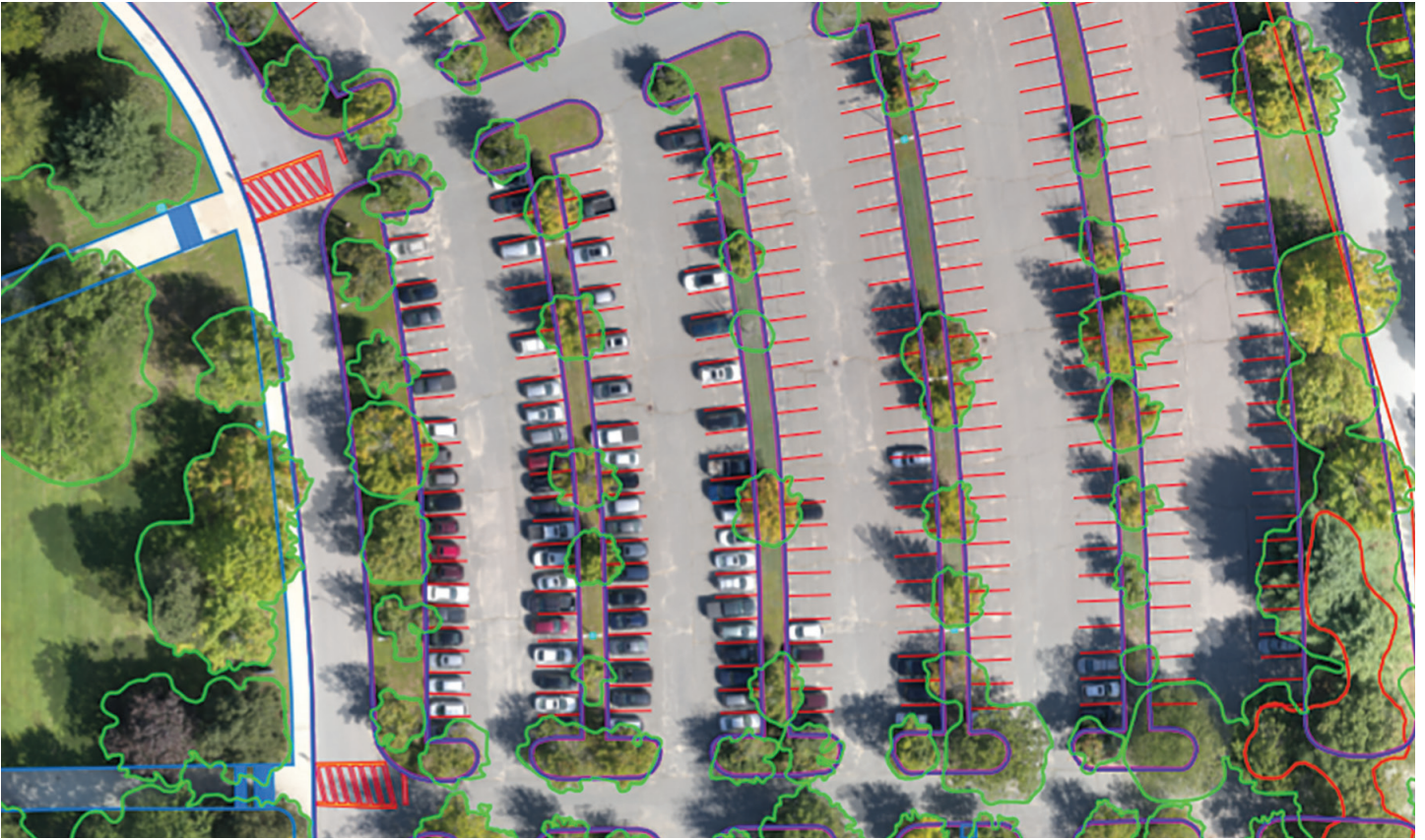

Figure 1

Figure 2

By now, most of you are probably tapping into the productivity that comes from collecting survey data via aerial imagery or LiDAR. However, have you noticed that these new methods – while efficient in the field – are creating new challenges in the office?

Already stretched thin, office teams are left scrambling to process photogrammetry and point cloud mega files, desperately hoping their program won't crash (again). Then, they're forced to divert valuable time and effort to tediously tracing site plan features while still handling their typical permitting and entitlement duties. Meanwhile, field data backlogs continue to grow as permitting and design bottlenecks continue to sabotage schedules...

Sound familiar?

Efficiently collecting site data via UAVs or mobile or terrestrial scans is only half the battle. Finding an office workflow that complements cutting-edge field processes is what will truly unlock the full potential of reality capture in surveying – which is where AI can help. The AI geospatial feature extraction is alleviating office stressors by turning photogrammetry and point cloud data into fast, accurate site plans.

Here are five ways that AI drafting is helping surveyors make the most of their reality capture workflows:

1. **Maximizing Productivity through Parallel Workflows**
   Delegating drafting to AI enables consultants to optimize their time by tackling multiple aspects of a project concurrently. Typically, this divide-and-conquer approach to productivity would mean recruiting, hiring, and training additional team members. However, with AI's easy access and minimal learning curve, teams can start meeting tight deadlines and streamlining schedules right away.

2. **Optimizing Cost Efficiency**
   AI drafting presents a game-changing approach to achieving an economical cost per acre when transforming photogrammetry or point cloud data into site plans. As project demands continue to outpace the available workforce, AI allows consultants to allocate staff and resources more effectively. When comparing the cost per acre of AI feature extraction versus
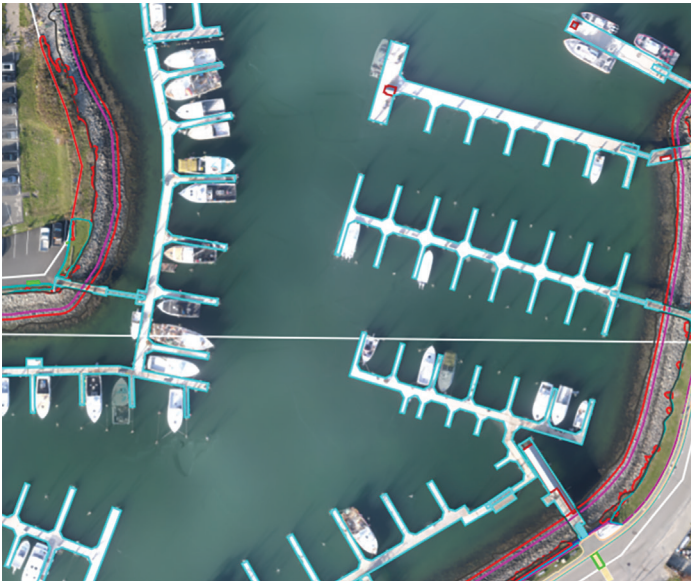
Figure 3

billable hours spent manually tracing site elements, autonomous drafting will likely win out every time – especially when considering the speed of AI and the more valuable tasks an employee could be completing instead.

3. **Capitalizing on Employee Expertise**
In the current labor market, skilled surveyors and drafters are in high demand and hard to find. Why waste their valuable expertise tracing parking lines and curbs? Feature extraction is a critical part of site plan development, but shifting this uninspiring task to AI can optimize employee effectiveness. AI drafting saves time and yields high-quality results while allowing staff to concentrate on work that benefits from their critical thinking and real-world knowledge.

4. **Elevating Accuracy and Detail**
Reality capture and AI drafting bring unparalleled accuracy to site plans. While traditional point-to-point surveying requires approximations and graphical representations of non-critical elements, quality aerial imagery or LiDAR allows for comprehensive, pixel-accurate feature extraction by well-trained machine learning models. Such advancements empower consultants to make informed decisions based on highly accurate data, ultimately enhancing project outcomes and instilling more confidence in early-stage designs.

5. **Enhancing Safety with Efficiency**
UAV or mobile site data collection helps keep surveyors out of traffic and hazardous conditions. With AI drafting, consultants no longer have to trade safety in the field for long hours and frustrations in the office. Processing digital site
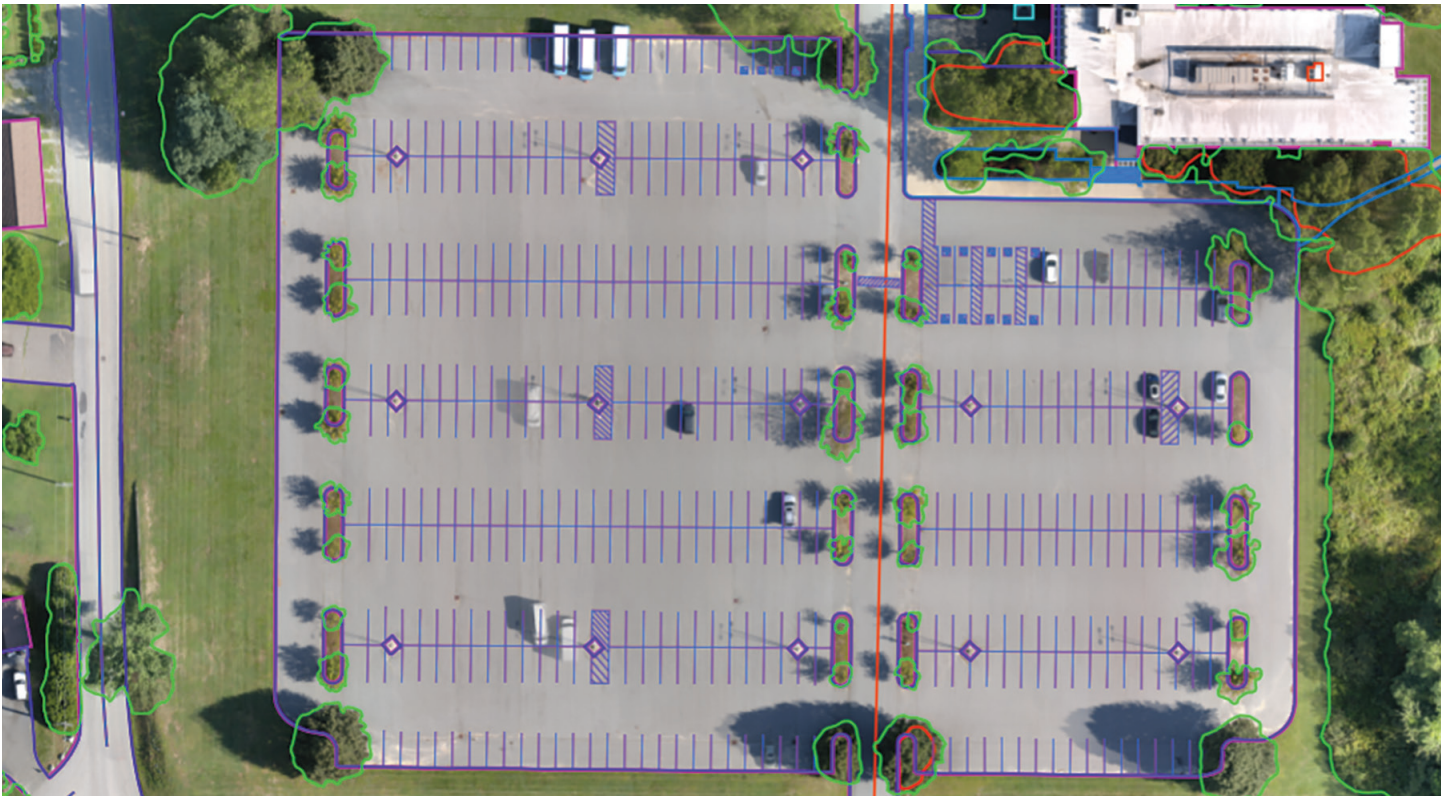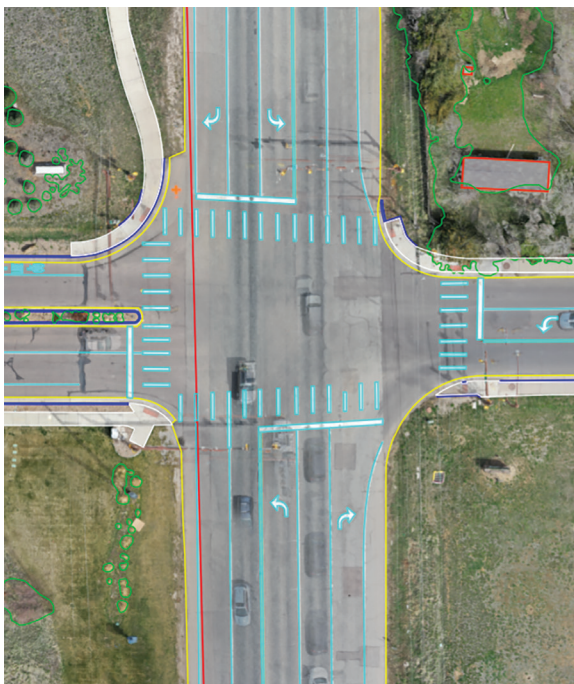

Figure 4

Figure 5

Figure 6

integrate directly with ArcGIS, Autodesk, Bentley, et cetera. With an average turnaround of 4 days, surveyors in every industry are leveraging AirWorks to deliver more projects faster and pave the way for expedited permitting and construction.

By augmenting reality capture with AI, you really have nothing to lose – except maybe your current frustrations. AirWorks' AI drafting might just be the key to the streamlined, cost-effective workflow you've been dreaming of.

Rob Sinclair is the Corporate Technology Lead for Wade Trim in Pittsburgh, PA. Rob brings more than 24 years of design- and technology-related experience to the civil engineering and survey field. Rob is enthusiastic about technology and enjoys staying on the forefront of emerging industry trends. Rob is an Autodesk Expert Elite, Civil 3D, and AutoCAD Certified Professional and is a FAA Part 107 remote pilot. He regularly teaches his peers how to use products such as Civil 3D, InfraWorks, Pix4D, and ReCap most effectively.

data with AI makes reality capture not only the safest option but also the most efficient.

To truly capitalize on your streamlined fieldwork, you need an efficient office counterpart. When it comes to revolutionizing site plan development, AirWorks Automate is leading the way. More teams are skipping tedious feature extraction and jumping straight to design and more complex tasks using AirWorks' AI-generated, pixel-accurate layers that