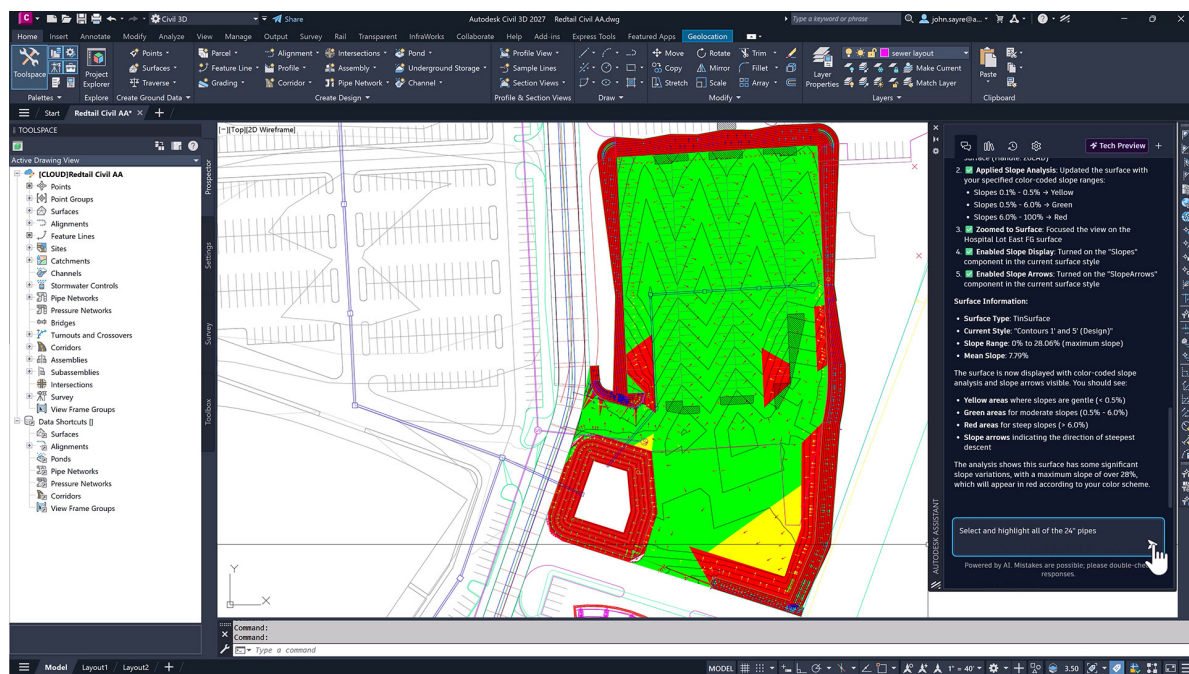


Transportation Engineers Cut Through Complexity With AI Tools

BY TIM YARRIS



Autodesk Assistant now available in Civil 3D as a Tech Preview

Infrastructure projects, especially in transportation, do not become complex all at once. Complexity builds over time as data accumulates across teams and phases until it begins to impact schedules, budgets, and the overall project delivery.

A corridor model comes in from one team, a drainage file from another; field crews transmit as-built LiDAR data; a traffic study appears from planning; evolving plan sets all attempting to converge into a single project environment. In 2026, the current problem for engineering teams isn't a lack of data, but an overabundance of fragmented, interdependent information that is difficult to manage. Despite widespread recognition of the importance of data interoperability, Autodesk's 2026 Transportation Spotlight Report found that 40% of transportation leaders say their organizations still struggle with siloed data.

Under tight deadlines, engineers working in unfamiliar models must spend valuable time reconstructing design intent—reviewing layers, tracing relationships, validating against standards, and confirming accuracy. Too often, time is lost not on engineering, but on simply getting oriented to the project.

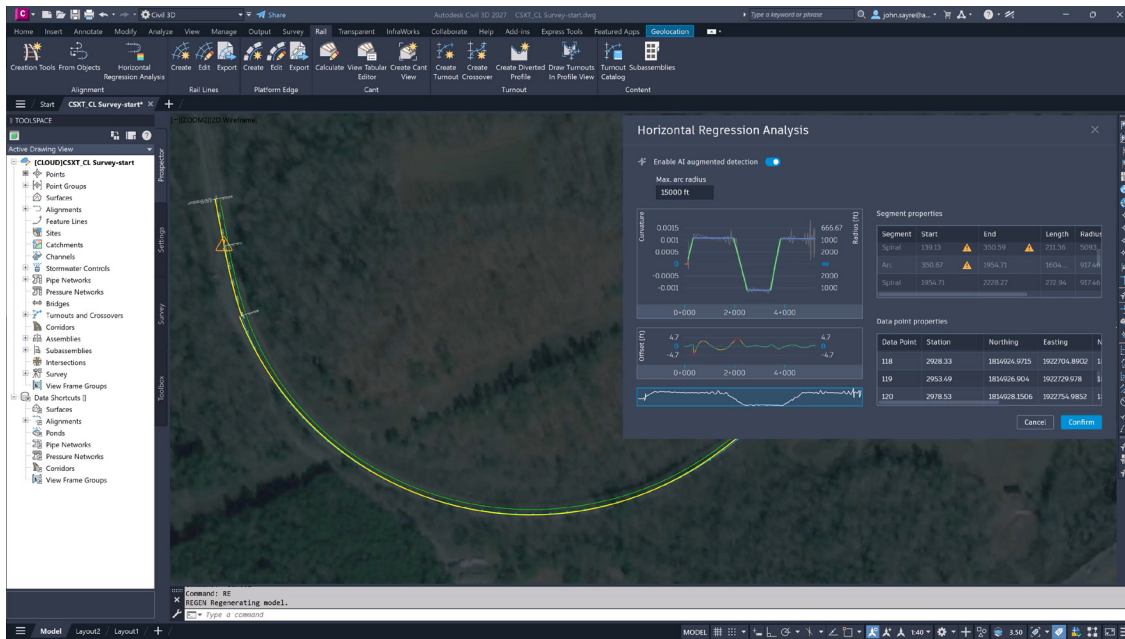
When teams try to accelerate without the full picture, risks increase. Issues like conflicting geometry, clashes, or

inconsistent standards can go undetected across files and project phases. Junior engineers may spend too much time navigating tools instead of contributing analysis, while senior engineers are pulled into downstream problem solving that should have been resolved in earlier project phases. The results across infrastructure projects are consistent: rework, schedule delays, cost overruns, and reduced productivity. The industry needs a more effective way to manage this complexity.

Integrating AI to Civil Engineering Workflows

As infrastructure teams try to navigate these challenges, AI is driving transformation AI that may help solve, or at least mitigate, many of them. Autodesk's "2026 Transportation Spotlight Report" found that 99% of transportation leaders surveyed now view AI as essential to remaining competitive and helping teams reduce time spent managing data and focus on higher-value engineering work.

That shift towards the implementation of AI-driven workflows reflects a broader reality: AI is no longer an experimental add-on. It has become a practical addition to the engineers'



Horizontal Regression Analysis in Civil 3D 2027

toolset, helping teams manage growing complexity of engineering challenges to deliver projects efficiently.

This is the context in which Autodesk is integrating AI into Civil 3D 2027. Autodesk Assistant, which is now available in Civil 3D 2027 as a Tech Preview*, goes beyond surfacing help documentation. It can interpret a model open within Civil 3D. In practical terms, that means an engineer can, for example, use natural language to ask Autodesk Assistant for a summary of a newly opened drawing and receive a coherent description of a model's objects and relationships in seconds. Autodesk Assistant can identify drainage pipes outside a required slope range; evaluate surface slopes against defined tolerances; and check a drawing against your CAD standards to flag naming, color, or layer-assignment issues.

The value is not that AI is replacing the engineer or their expertise. It is that AI reduces low-value effort that stands between the engineer and their work. Engineers remain in control of decisions, including geometry, parameters, evaluating results, and making final decisions.

By reducing time spent on manual checking, rechecking, and reorienting within complex project models, AI enables teams to focus their time on high-value engineering work that improves project delivery.

Autodesk Assistant isn't the only AI capability in Civil 3D 2027. Other Civil 3D 2027 workflow powered by Autodesk AI include:

- Horizontal Regression Analysis converts dense field survey data into optimized horizontal alignments for roads, highways, railways and pipelines. Civil 3D calculates best-fit tangents, curves and transition spirals from measured points, reducing the trial-and-error that has long been part of design process. In the 2027 release, a redesigned interface ties the alignment preview directly to curvature plots and the segment table in real time, allowing engineers to see the effects of each adjustment as they make it.

- Geometry Cleanup in Civil 3D 2027 identifies common errors in DWG geometry**, such as gaps, overshoots, undershoots, and misaligned angles, and provides targeted fix options. It streamlines error detection and review by highlighting issues directly in the drawing, allowing users to review and apply fixes with real-time previews. This helps designers spend less time on manual cleanup while improving drawing quality and drafting productivity, making files more reliable for downstream workflows.

Looking Ahead with AI

As AI continues to evolve, Autodesk's approach to engineering tools remains *deliberate*. It starts with helping engineers ask better questions, navigate complexity more easily, and understand what is in front of them with greater clarity. By focusing on tasks where AI can provide immediate, practical value, like model insight, navigation, and standards checking, it can support engineers without taking away authorship or accountability.

Right now, that means helping engineers find what they need faster, make sense of complex data, and move forward with more confidence. Over time, these tools will make it easier to work with growing volumes of data and help teams interpret information and make decisions more quickly as projects evolve.

Transportation infrastructure will always be complex. It will always require experience, judgment, and the ability to balance real-world tradeoffs. AI doesn't change what needs to be done, but it will change how it is done.

Applied with intent, AI shifts time away from managing data and toward solving problems. It gives engineers more space to focus on the work that matters most.

It's still early. But even now, it's a meaningful step toward a future where teams can deliver more resilient infrastructure.



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Explore how Autodesk AI is helping teams work smarter across the project lifecycle.

*Autodesk Assistant Tech Preview provides early access to new pre-release capabilities. It is designed for a defined set of supported workflows and will continue to improve over time. Autodesk provides no commitments or warranties during this phase.

**Geometry Cleanup applies to 2D geometry in DWG files and does not modify Civil 3D object geometry.