

COMPANY

City of Riviera Beach

LOCATION

Riviera Beach, Florida

SOFTWARE

AutoCAD® Civil 3D®

Rebuild with confidence

Riviera Beach completes roadway design project 60 days ahead of schedule using AutoCAD Civil 3D

Civil 3D helped us complete the design 60 days ahead of schedule and save \$30,000 in design fees through increased productivity and efficiency. We expect to save even more each year and plan on using Civil 3D on many more projects.

— **Ricardo Wiswell**
Engineering Technician
The City of Riviera Beach

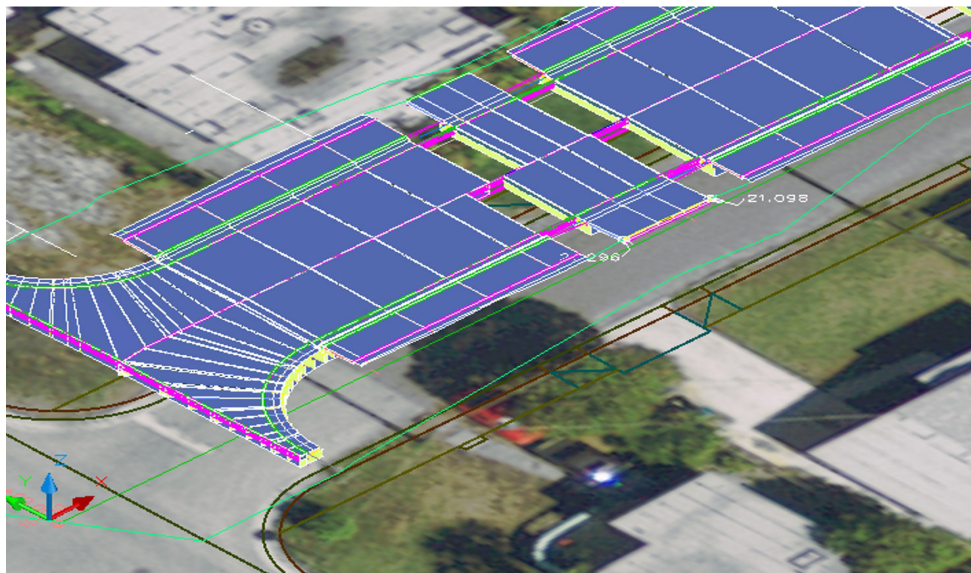


Image courtesy of The City of Riviera Beach.

Project summary

With a current population of 35,000 inhabitants, The City of Riviera Beach is a growing harbor city located along the shores of the Atlantic Ocean in Palm Beach County, Florida. For several years, Riviera Beach has used funds from federal Community Development Block Grants (CDBGs) to perform annual roadway restoration or reconstruction projects in an economically depressed part of town. "Our ultimate goals are to create a new sense of community for the residents and improve property values," says Ricardo Wiswell, an engineering technician within the Department of Community Development, the City Department responsible for planning and zoning, building, and engineering. Until recently, a shortage of manpower forced Riviera Beach to outsource much of the design work on these roadway projects to consultants. To help save money and allocate its internal resources more effectively, the city adopted AutoCAD® Civil 3D® software in 2007.

The challenge

Within the city's engineering division, two employees often have to manage as many as nine capital improvement projects at a time. "Under

those circumstances, finding the time to perform design work can be very challenging," says Wiswell. Hiring consultants partially relieves the burden on the city engineers, but can cost as much as \$35,000 per project and introduce unneeded project complexity. "Coordination between the consultants and the many city departments was a headache." In this design environment, change orders during construction were not uncommon, each requiring time-consuming review and approval by the County. "A single change order could delay a project for two weeks—or more." Since adopting Civil 3D, Riviera Beach has improved productivity and efficiency on numerous projects, helping enable the engineering division to perform previously outsourced work in house. One of the division's most recent projects is a \$640,000 reconstruction of 1,340 linear feet on 34th Street in Riviera Beach.

The solution

In March, 2010, the City began work on the project, which called for the replacement of all water lines, fire hydrants, sub grade, base rock, pavement, curbsides, and sidewalks in the area. To help fully implement Civil 3D, the city engaged an authorized Autodesk reseller. For a fraction of

The City will use Civil 3D templates created on this project to help save time and money on future projects

the consultant's fee, the reseller customized Civil 3D and helped simplify the design process, enabling the City to perform more design work in house. The reseller also created templates for reuse on future projects—which will help save time and money. Using Civil 3D, the department engineers created a higher-quality design under challenging conditions. "The City is very flat, with existing sidewalks and driveways at different elevations," says Wiswell. "We had to match every house or driveway up to the right of way line." The reseller set up Civil 3D to better match those points and created a corresponding design profile, helping to save considerable time.

Resolving conflicts

The engineers also used Civil 3D to help accommodate vertical curves on the street. "We needed a balanced design profile shape that didn't require too much fill or borrow, and met the driveways at a slope permitted by the City Code" says Wiswell. Civil 3D helped the team balance those objectives and quickly achieve the requirements.

"Typically, Civil 3D shows us conflicts between the water, sanitary, and storm sewer lines as we design, but sometimes we discover something that is not in the plans," says Wiswell. On this project, the City detected several unforeseen utility line

conflicts. "Using Civil 3D, we resolved those conflicts on the fly before releasing construction documents. The Civil 3D model helps us work around unexpected obstacles in a better, faster, and more comprehensive way."

Expedite the permit process

Civil 3D was instrumental in producing compliant documentation for local permitting agencies, including the Department of Environmental Protection. "They reviewed our permit and quickly approved it without a single comment," says Wiswell.

The result

The City completed construction and bid plans for the project 60 days ahead of schedule and saved \$30,000 in design fees through increased productivity and efficiency. "We expect to save more each year and plan on using Civil 3D on many more projects," says Wiswell.

In addition to helping to free up money for other projects, Civil 3D improved communication with the utilities district and the public works department. "We received very positive comments about the construction documents."

To learn more about BIM for Civil Infrastructure, visit, www.autodesk.com/industry/civil-infrastructure/ or www.autodesk.com/civil3d.

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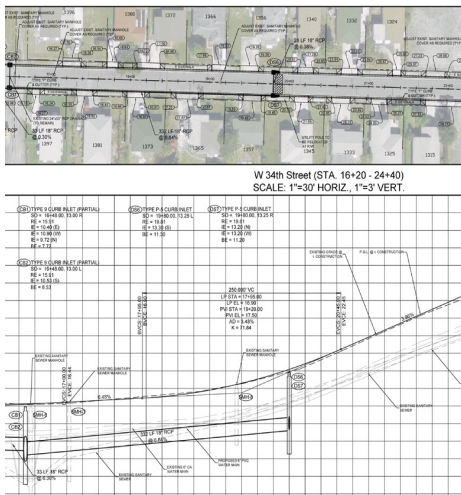


Image courtesy of Riviera Beach

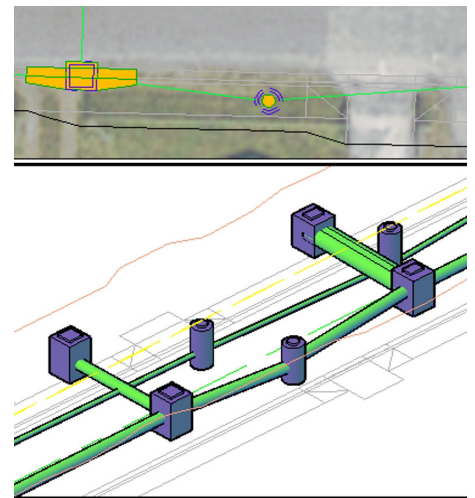


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