

CI226747

Road Work Ahead: New Techniques for Road Reconstruction Using Civil 3D 2019

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Road Work Ahead: New Techniques for Road Reconstruction Using Civil 3D 2019

With 80% of road construction budgets going toward road rehabilitation, is "mill 2, overlay 2" the best that can be done? This class will explore the new road rehab tools in Civil 3D software and show how you can use them to reduce milling, reduce material costs, and produce a smoother final road surface. We'll explore the new tools as well as how to incorporate mobile LIDAR (light detecting and ranging) into your design process to identify potential problems in design instead of in the field. We'll also look at how the techniques in these new tools are being used at a United States Department of Transportation.

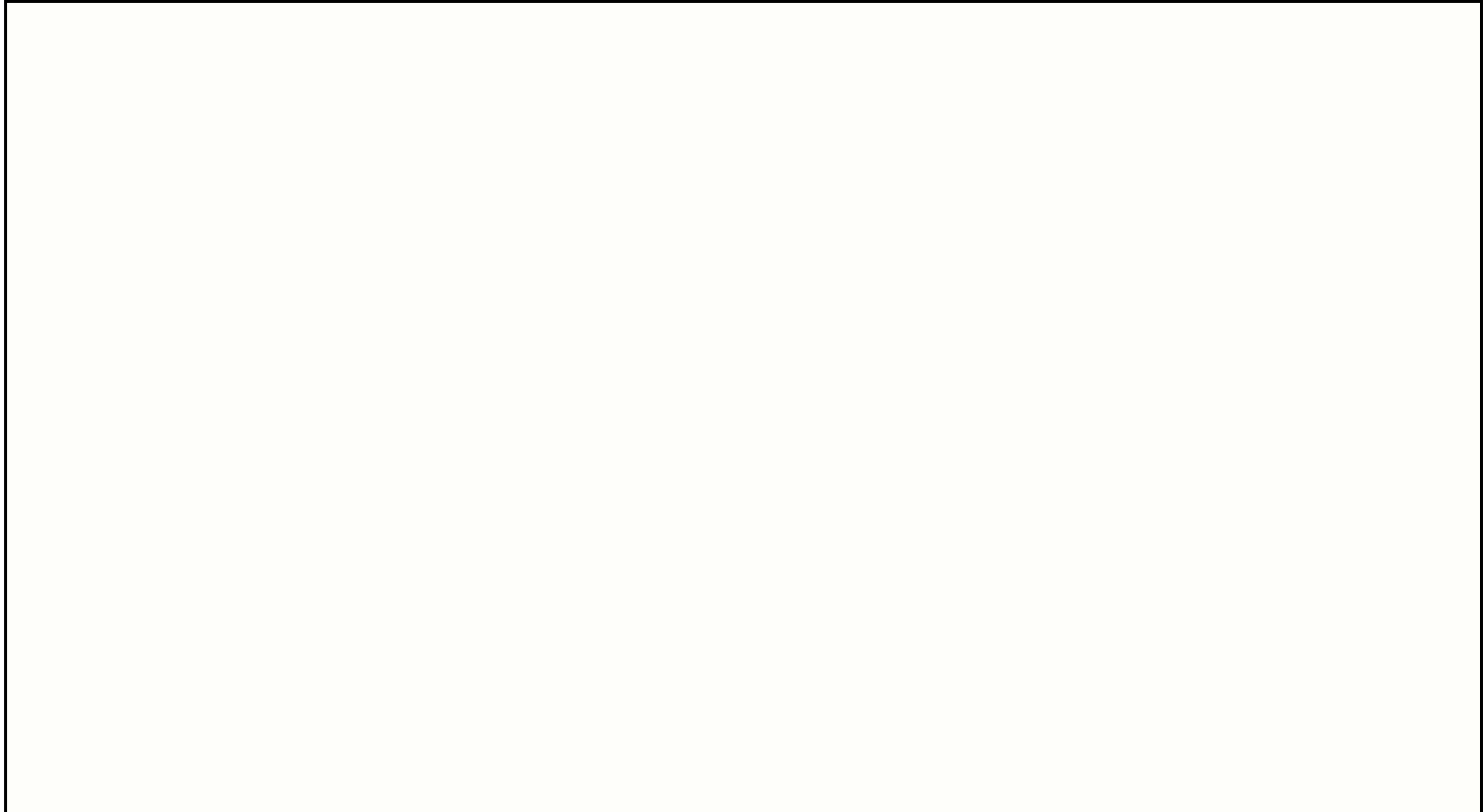
Learning Objectives

- Learn how to incorporate mobile LIDAR data to create a base model for rehab design
- Learn how to apply the Road Rehab tools in Civil 3D 2019 to a mill and overlay job
- Learn how to apply the rehab tools to design a mill and overlay job that will save materials and produce a better final road
- Learn how the rehab reports can be customized to meet local requirements

Introduction



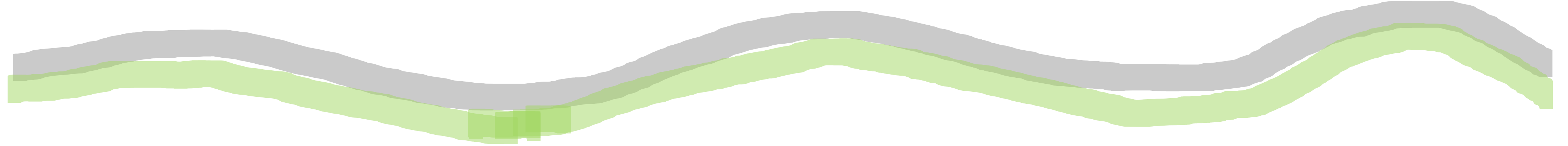
LiDAR Data Capture



LiDAR Data Processing

Basic Problem

2" Top Surface



Binder Course

Milling - Baseline

TO START – CREATE A SIMPLE CORRIDOR THAT MILLS 2”

This will be created using generic links to mimic the behavior of the road plane. The assembly will use the existing ground profile line, and offset 12' left and right to points on the existing ground surface.

DATUM SURFACE

A datum surface will be created from the bottom link of this assembly (using the corridor feature lines at the bottom edge of the mill

VOLUME SURFACE

A volume surface will be created using the existing ground and the datum surface. This surface will give us volumes and will be used to generate milling depth charts

Demo



Milling Results

Design	Volume	Volume Difference	2" Depth Coverage
2" Mill Ideal	444 cu. Yd.	0%	100%
2" Mill (Actual)	485 cu. Yd.	9%	61%
3" Mill (Actual)	596 cu. Yd.	34%	4%

Mill and Overlay - Basic

TO START – CREATE A SIMPLE CORRIDOR THAT MILLS 2”

This corridor will be created using the Mill and Overlay tool, and take most of the defaults for the tool

DATUM SURFACE

A datum surface will be created from the bottom link of this assembly (using the corridor feature lines at the bottom edge of the mill)

VOLUME SURFACE

A volume surface will be created using the existing ground and the datum surface. This surface will give us volumes and will be used to generate milling depth charts

Demo



Milling Results

Design	Volume	Volume Difference	2" Depth Coverage
2" Mill Ideal	444 cu. Yd.	0%	100%
2" Mill and Overlay	570 cu. Yd	28%	100%
1.6" Mill and Overlay	480 cu. Yd.	8%	66%

Demo





Questions?

To see the videos, go to this link and register:

<https://5d.retrieve.com/signup?ug=c8f64fe6-cfc6-480f-97b0-ff2283484536>



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