

Accessorize Your Design - Dynamo for Civil 3D

Stacey Morykin

Design Technology Manager – Pennoni

Dylan Kahle

Design Technology Specialist – Pennoni



About the speakers



Stacey Morykin

- 20 years experience in AEC Industry
- Associate Degree in Computer Science
- Teaches Engineering Graphics at local college
- Autodesk Certified Professional in Civil 3D
- President of User Group in Philadelphia, PA



Dylan Kahle

- 8 years experience in AEC Industry
- Bachelor's Degree in Civil Engineering
- Autodesk Certified Professional in Civil 3D



Who's in the room?

- What version of Civil 3D are you using?
- Are you currently using Dynamo for Civil 3D?
- Experienced programmer or software developer?

Key Learning Objectives

- Identify repetitive tasks in your daily workflow
- Learn how to import and manipulate AutoCAD Objects and/or Civil 3D data
- Produce Dynamo for Civil 3D scripts to automate repetitive tasks
- Discover ways that Dynamo for Civil 3D can elevate efficiency

Class Agenda:

- What is Dynamo and Why would I use this?
- Working within Dynamo for Civil 3D
- Organizing Data within Dynamo for Civil 3D
- Dynamo Community!

Not Covering today:

- Custom nodes using Python, C#, etc.
- Organizing / Working with lists

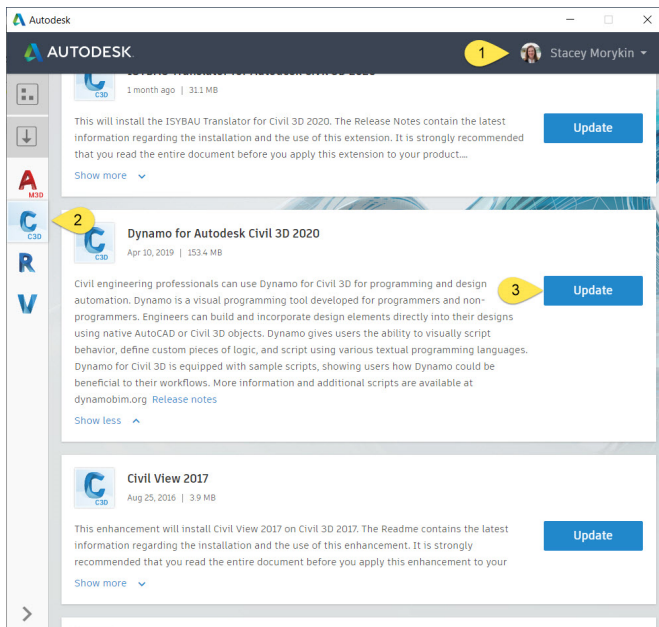
Housekeeping:

- Question / Answer session at the end

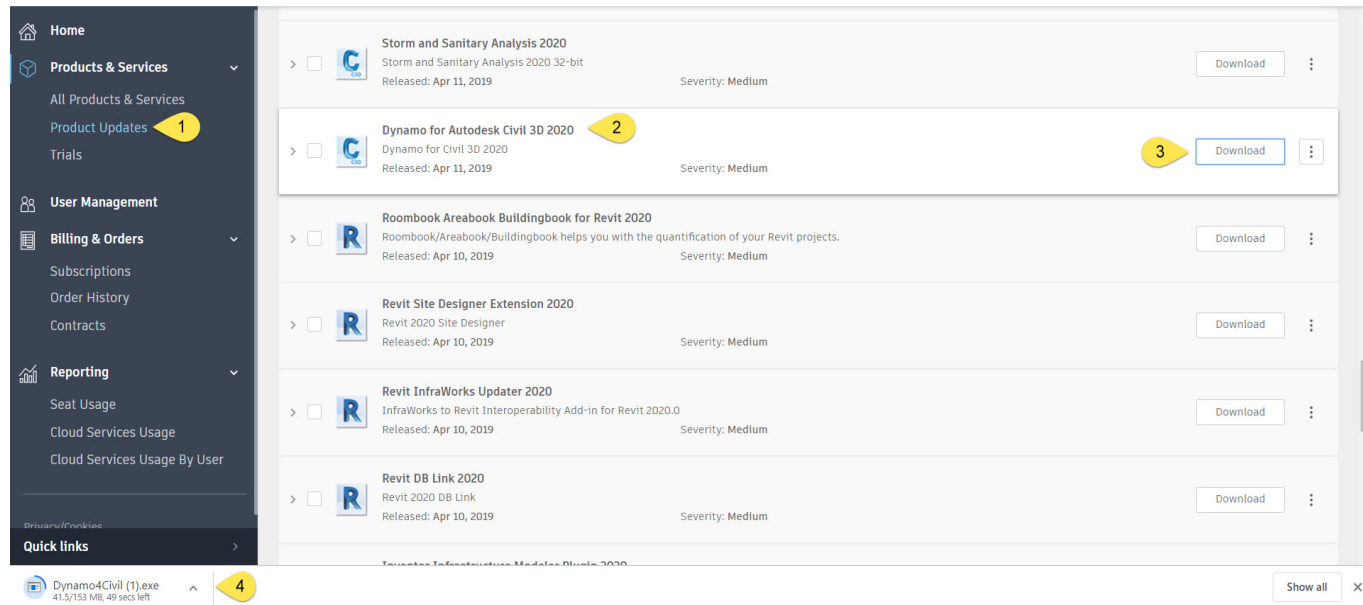
Dynamo for Civil 3D

Autodesk Account

- Product Updates
- Use the 2020 filter
- Download, then install (2 clicks)
- Best for multiple workstations



AUTODESK ACCOUNT



Desktop App

- Windows System Tray
- Automatic filter based on products installed
- Download and install (1 click)
- Great for individual installation

Note: An active subscription to Civil 3D is required, only available in 2020

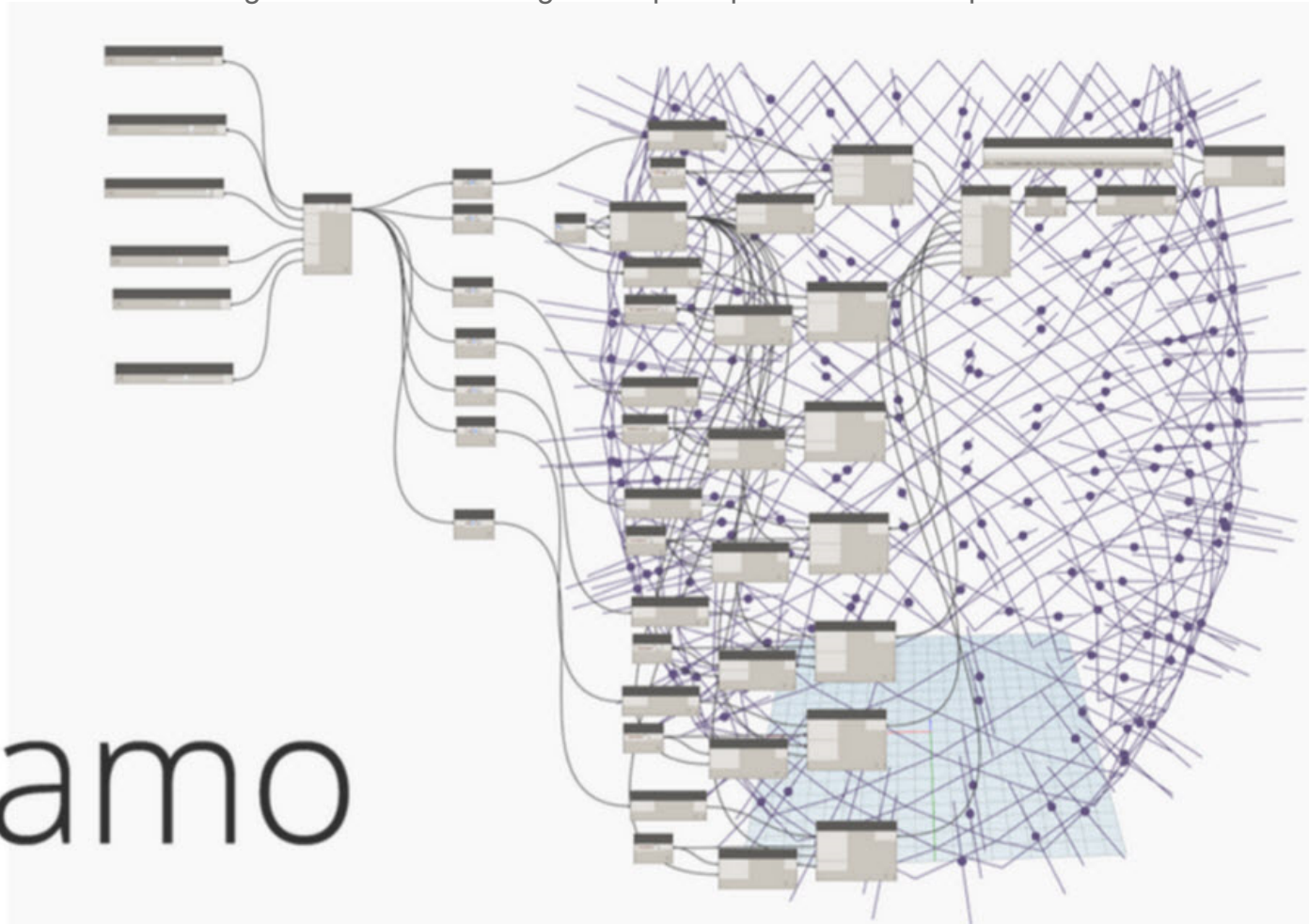
Intro to Dynamo



What is Dynamo?

Dynamo is a visual programming environment that lets designers create visual logic to explore parametric conceptual designs and automate tasks.

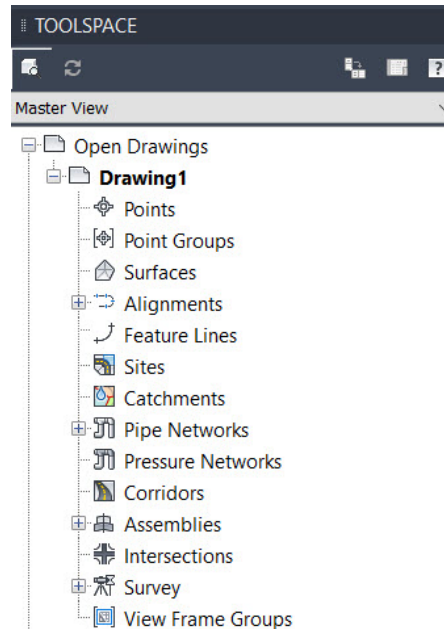
- Visually write code!
- Easy for non-programmers!



Dynamo

Why would I use this?

- Create many design options faster
- Access your Civil 3D data



- Automate repetitive tasks, reduce the number of clicks!

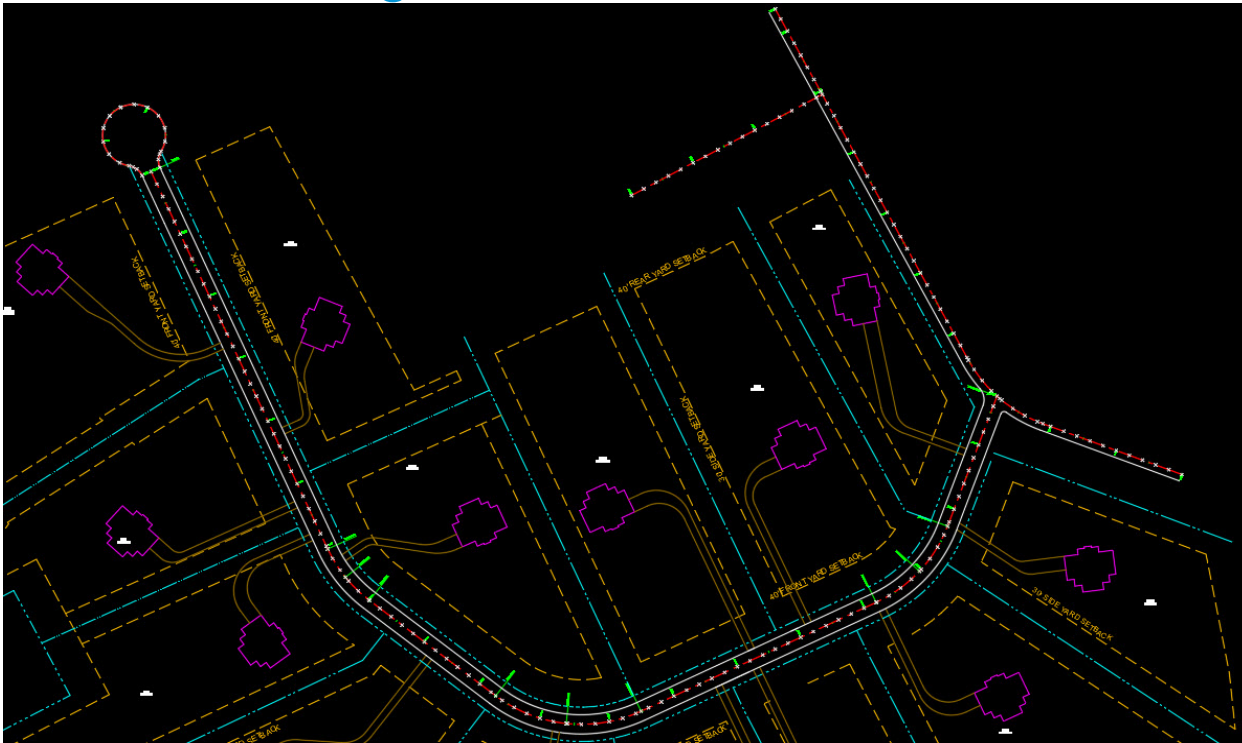
“The only way to be more productive in AutoCAD is reducing clicks and picks”

– Matt Murphy

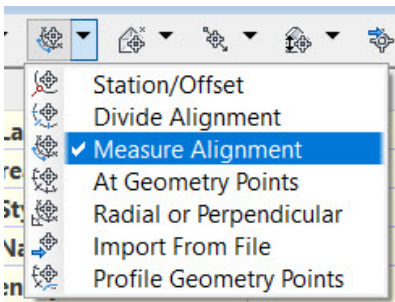
Working within Dynamo



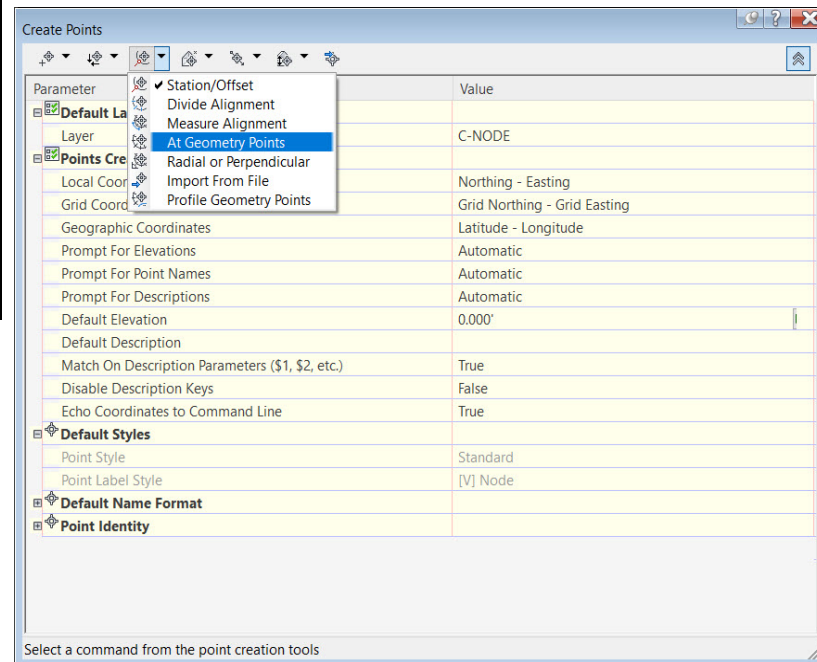
The challenge...



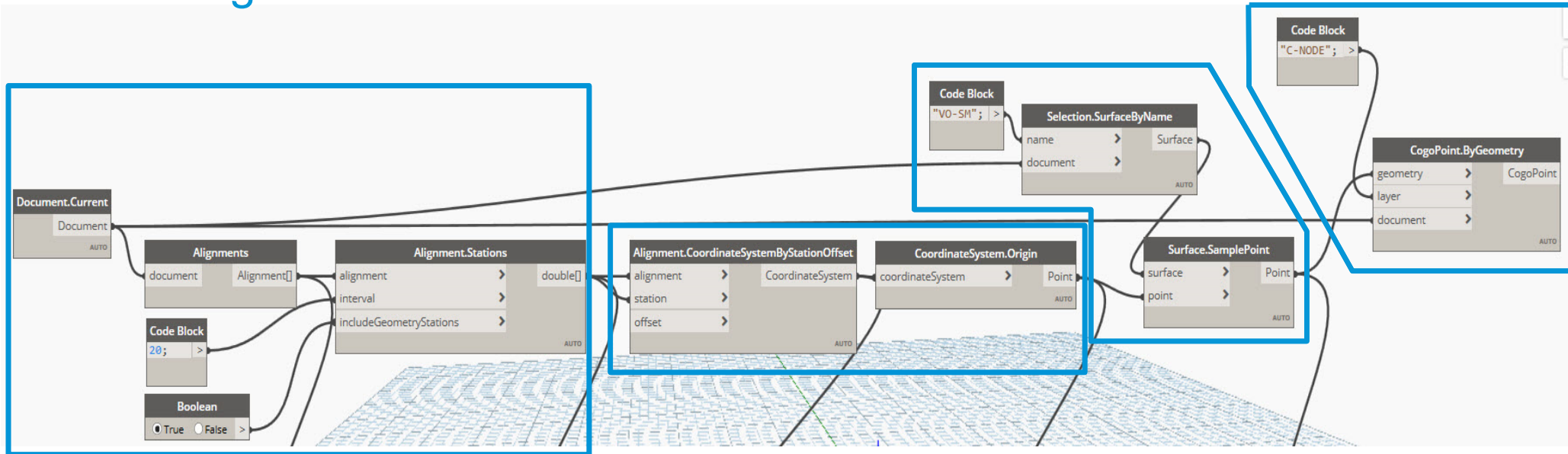
- Multiple Alignments
- Create CogoPoints at a specific interval & Geometry Locations
- CogoPoints Elevation associated with surface



- 3 Separate commands per alignment
 - One for interval
 - One for geometry locations
 - Set elevations based on surface
- Modifications? – Delete and redo!



The end goal...



STAGE 1

- Get all alignments in current drawing
- Get Stations at a specific interval & Geometry points at same time

STAGE 2

- Get X, Y Values at those station intervals
- Convert coordinates to points

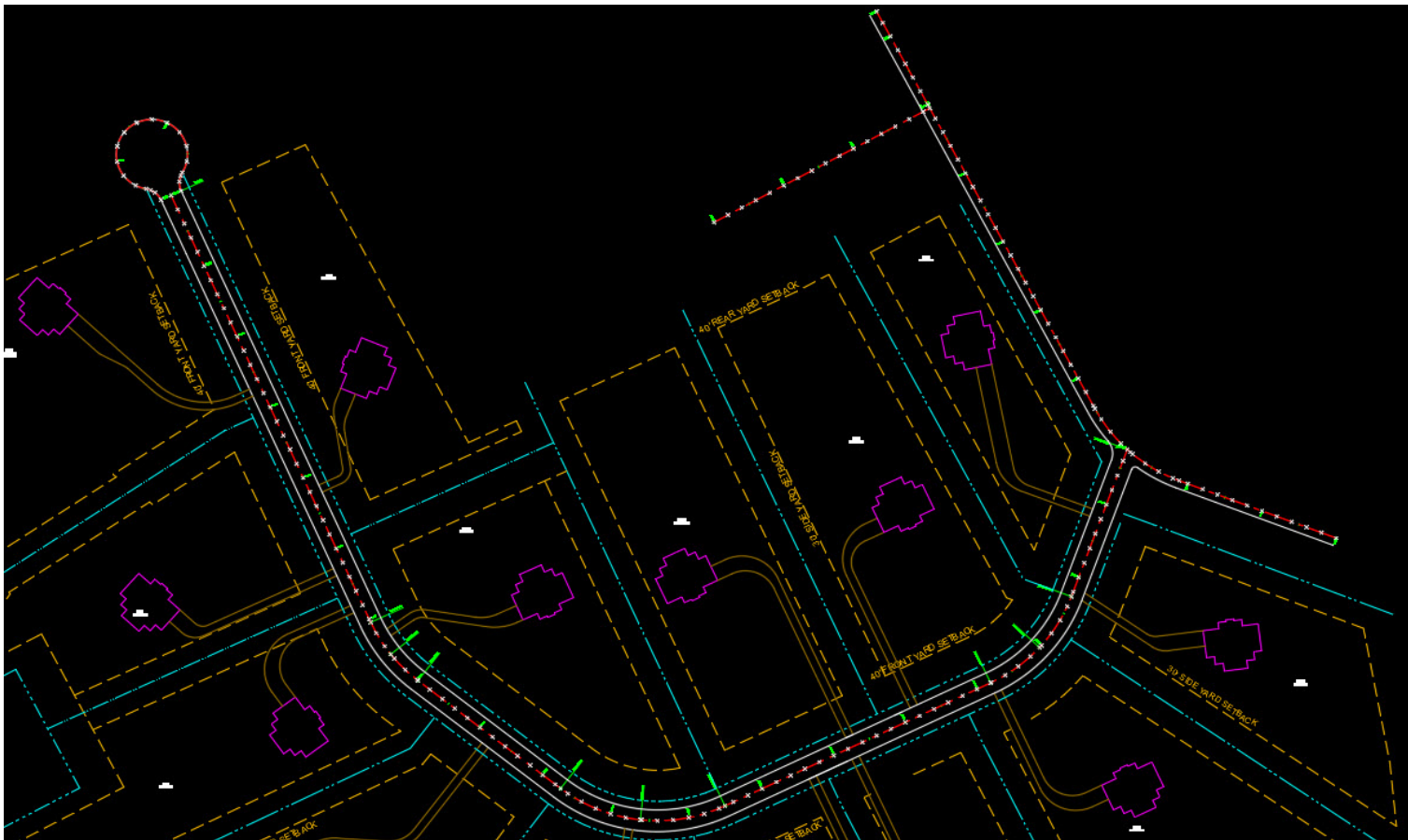
STAGE 3

- Get Z Values at those station intervals by calling the surface

STAGE 4

- Create Cogo Points at those locations inside C3D

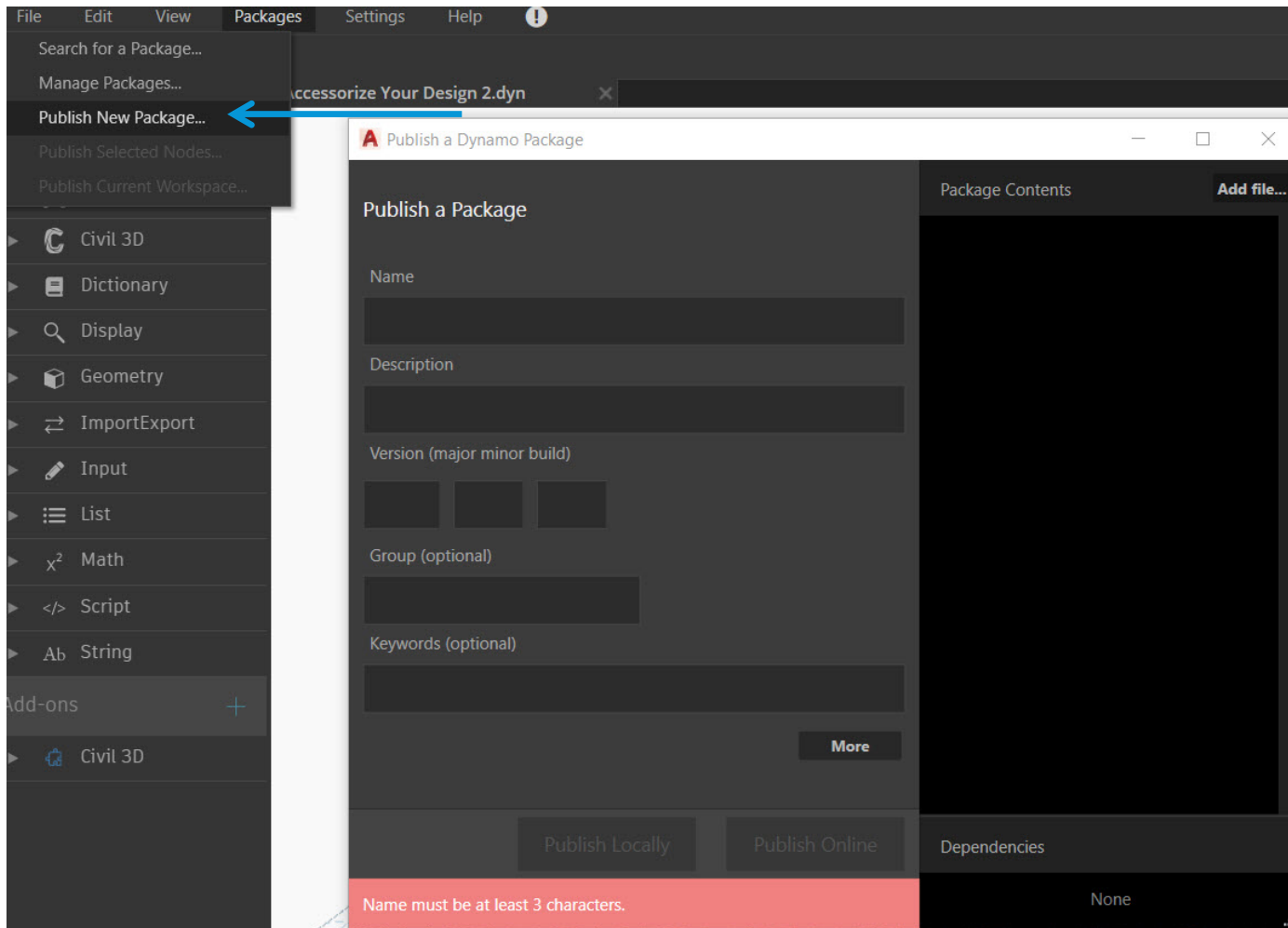
Live Demo of Creating Graph



Dynamo Community

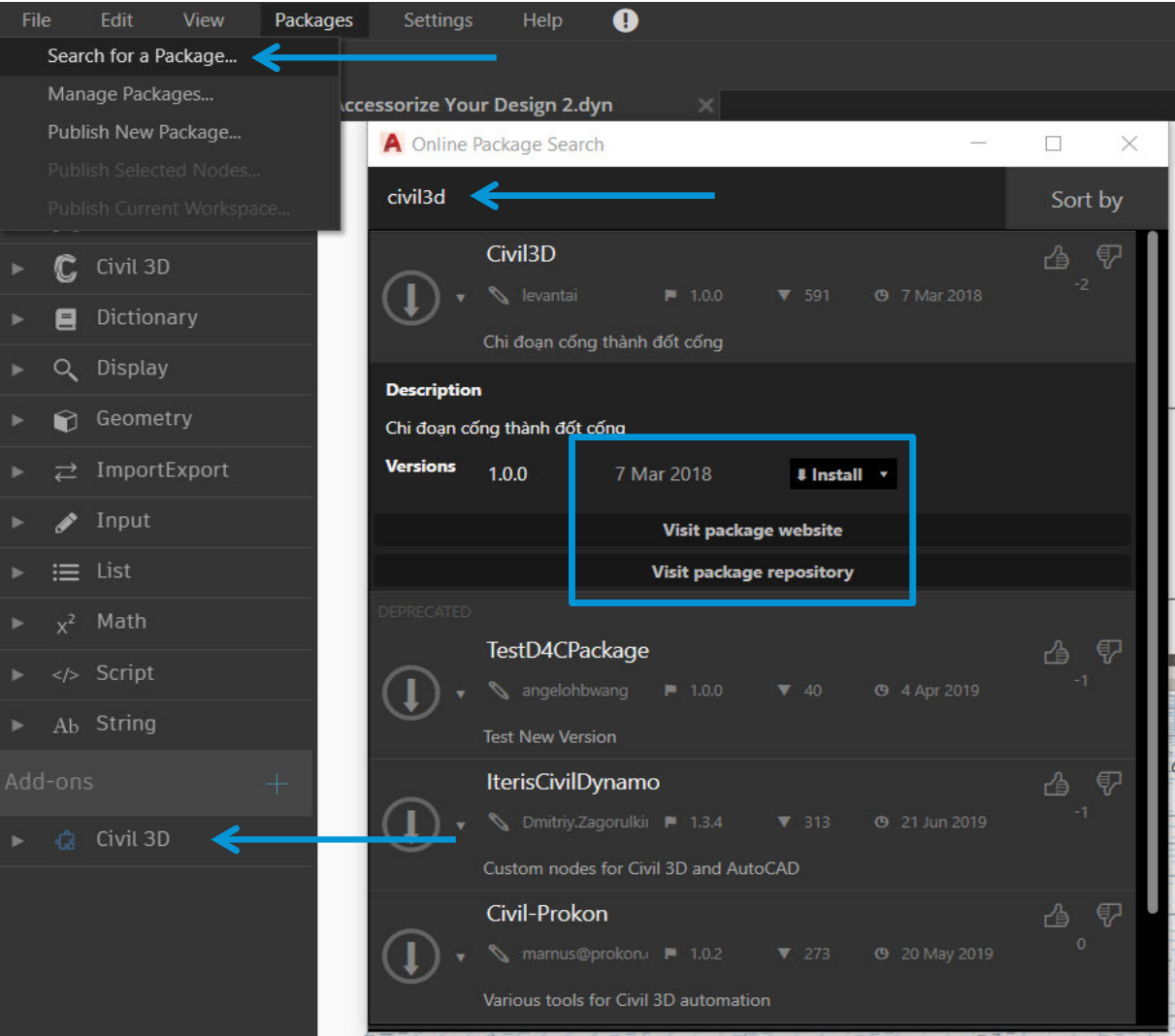


Create Packages



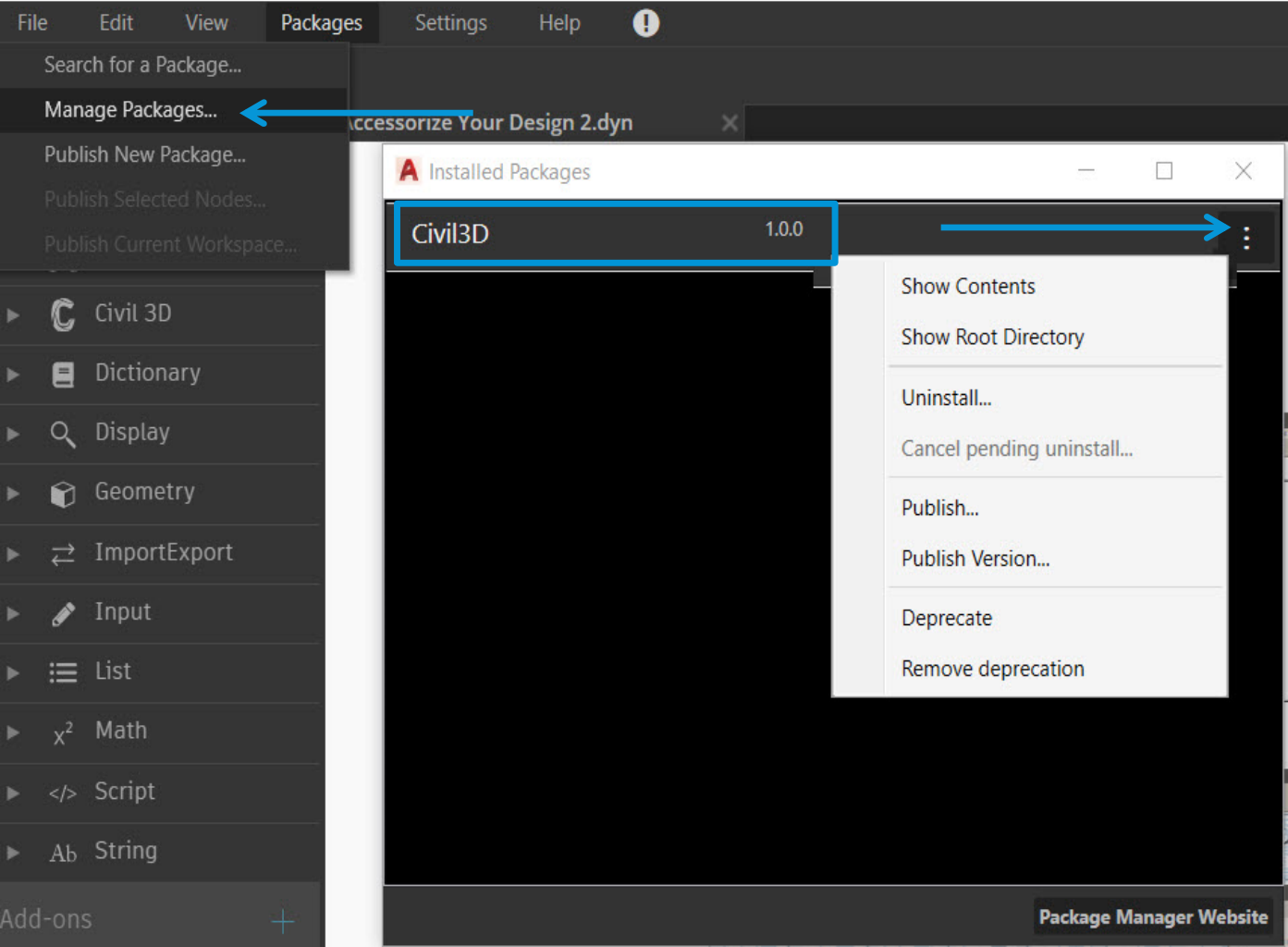
- Publish Packages Locally
 - Appears every time you open Dynamo
 - Share within your organization
- Publish Packages Online
 - Share with the Community

Search for Packages by Others



- Search for packages
- Get package information
- Install
- Located in “Add-Ons” Library

Manage Packages



- Manage Packages
- See a list of installed packages
- Ellipses provide more options

Wrap Up - Closing



Key Learning Objectives

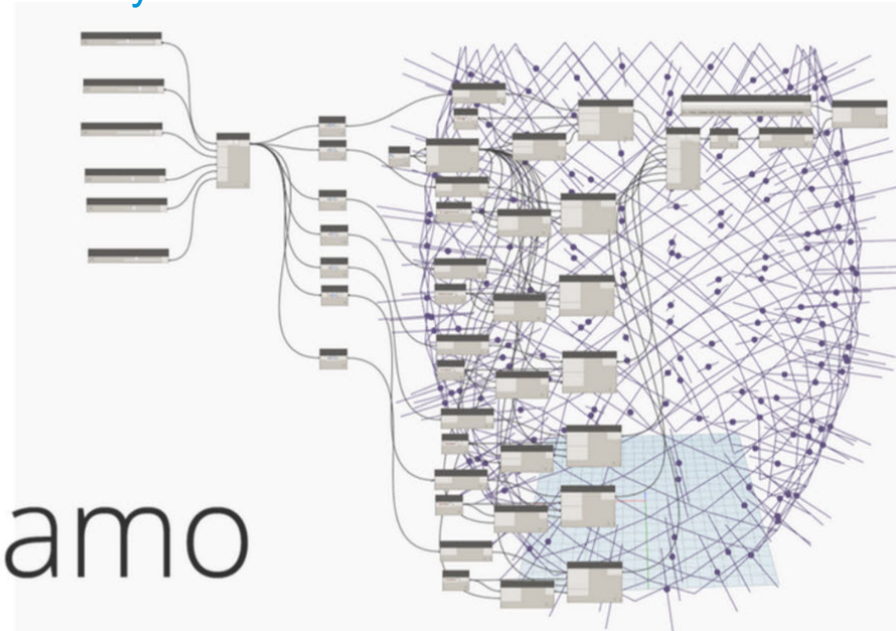
- ✓ Identify repetitive tasks in your daily workflow
- ✓ Learn how to import and manipulate AutoCAD Objects and/or Civil 3D data
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Handout:

- Code Block Shortcuts
- Working with Lists
- Custom Node Packages
- Tips and Tricks
- Additional Resources for help



Dynamo



Let's start automating!!

JOIN THE COMMUNITY!

Official Website – <https://dynamobim.org/>

Dynamo Forum - <https://forum.dynamobim.com/>

Sample files – Check them out under [Help > Samples](#)



NEED MORE HELP?

User's Guide – <https://primer.dynamobim.org/>

Node Dictionary – <https://dictionary.dynamobim.com/#/>

Learn Python - <https://www.python.org/>

CHECK OUT OUR HANDS-ON LAB!

“Mundane Civil 3D Tasks to Automate Using Dynamo for Civil 3D – CI322852-L

Thursday (11/21/2019) – 10:30am (90 Minutes)

Join the Dynamo Community!



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