Transportation Design Collaboration: Moving beyond buzzwords
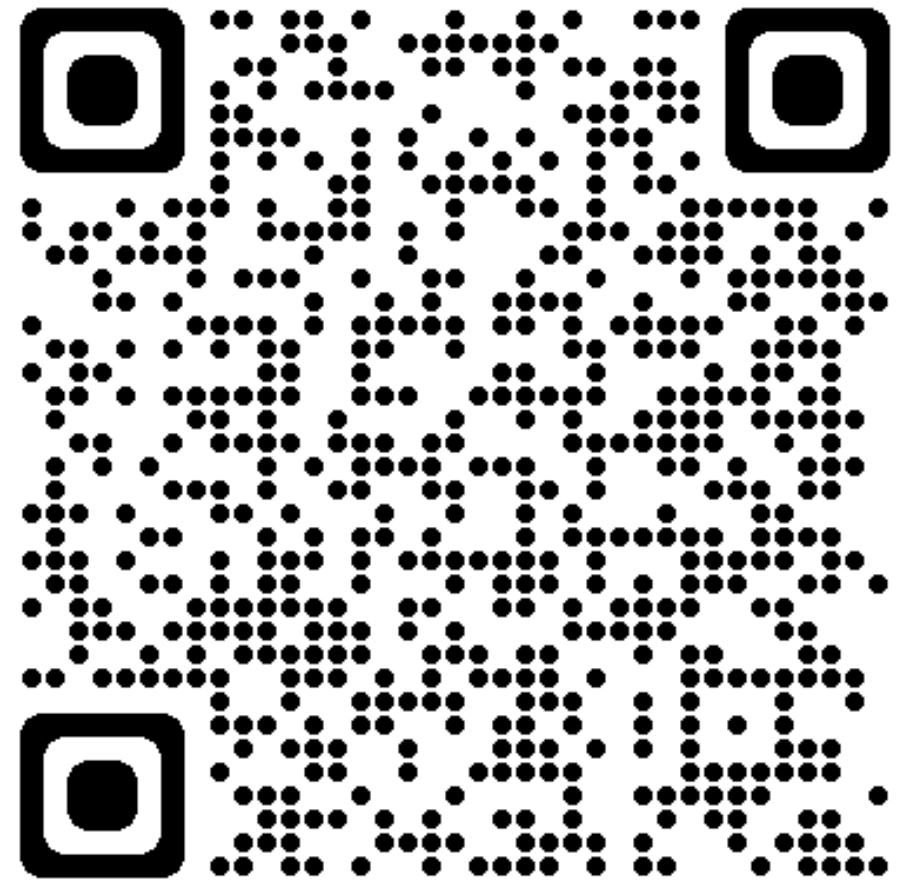
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SE WI Transportation Symposium 2022

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QR code for webpage of presentation

Methods Engineer -> My team does the following for roadway design at WisDOT:

- Figure out how to do stuff
- Build software standards and customizations
- Deploy those standards and customizations to anyone who wants them
- Show people how to do the stuff we figured out
- Support them when they run into problems

What that really means day-to-day:

- We're Civil 3D Jedi masters
- No serious lightsaber injuries to date

So how do Civil 3D projects normally work?

- One to many editors
- Dozens to hundreds of working files
- Hundreds to thousands of connections between files
- Collaboration is easiest if everyone is on the same network

So what if everyone is not on the same network?

- Small-scale: manual sync, generic clouds (Box, SharePoint, DropBox)
- Old, large-scale: FTP site
- Recent, large-scale: ProjectWise site (or Vault)
- In development: Autodesk Construction Cloud

BTW, is this topic really that important?

- Are project staff working out-of-the office?
- Are project staff working at different offices (in the same organization or in different)?
- Is it important to keep a single source-of-truth for project files and avoid users overwriting each other's work?

Then, I got an email, March 2021…

- Project Chief out of the Green Bay office says,
  - The I-41 is funded again. [I-41 Project (wisdot.gov)](wisdot.gov)
  - We want to staff it with in-house teams and consultant firms
  - We want everyone on the same platform with as close to realtime access to the files as possible
  - ==What do you recommend?== (this needs to work)

No crystal balls for decision-making

- Civil 3D projects in ProjectWise work, but not awesome.

- From what we knew, ACC wasn't quite ready, but close.

- Did we trust AutoDesk would address our needs fast enough and accurately enough?

  - The best way to do that is to have them row the "project cannot fail" boat with you.
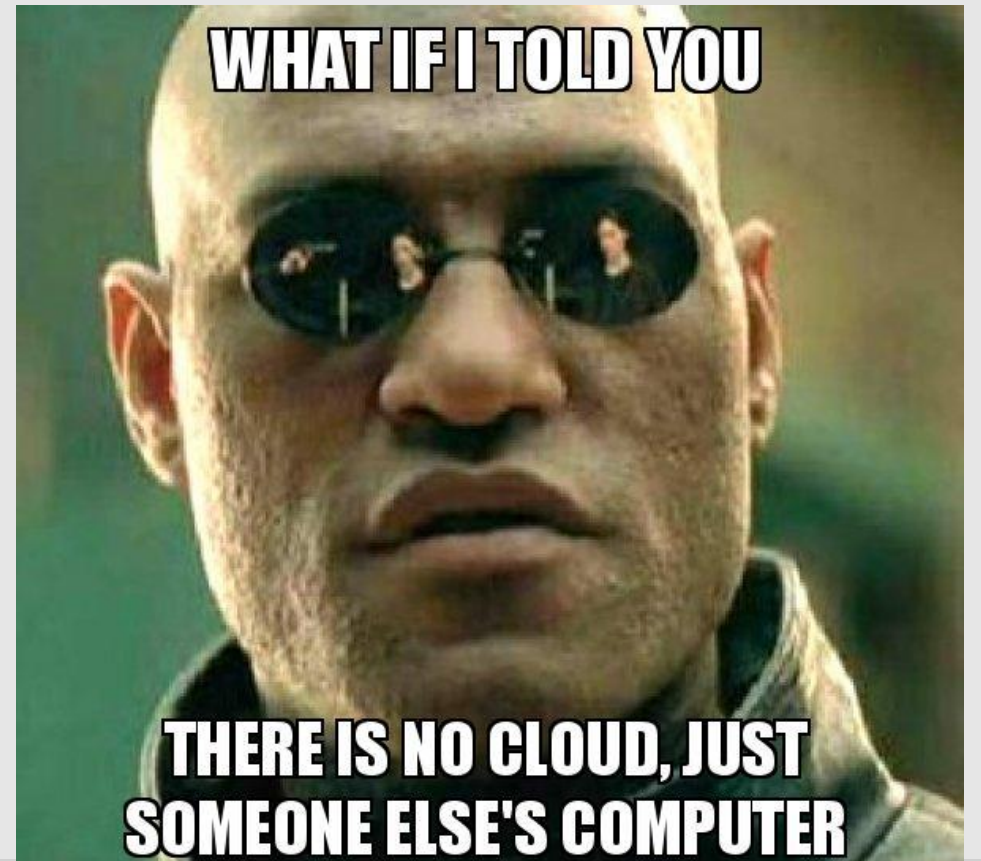
  - To the cloud! 🐱 🏍

Some things to understand

•Cloud: A computer that you work on that someone else owns.

   § https (web) protocol

•Oct 2022: there is a lot of cloud storage, not much cloud computing

WHAT IF I TOLD YOU

THERE IS NO CLOUD, JUST SOMEONE ELSE'S COMPUTER

Some things to understand

- The **ONLY** time you are working directly on the cloud is when you are in a browser. If you are in software, you are working on a local copy. This means:
  - Synchronization
  - File locking (One user edits one file at any one time)
  - Most file formats do not have native browser editing

Some things to understand

- The expectation/business need is that it just works as fast and easy as a local network
- The reality is there is a whole world of computer stuff that you don't control being added to the equation

February 2022: What did we show them?

- Local sync managed by Desktop Connector (DC, local app built to manage syncs)
- Very little change to Civil 3D interface
- All Editors need an AutoDesk BIM Collaborate Pro license in addition to a Civil 3D license
- All Editors need to be added to the site and the project.

Where are we at in October 2022?

- Over 200 users in the project assigned to 15 business groups. New users added every week
- 9 Civil 3D Design projects, 3274 DWGs
- ACC is currently passing the scream test 🎞️.

What have we learned?
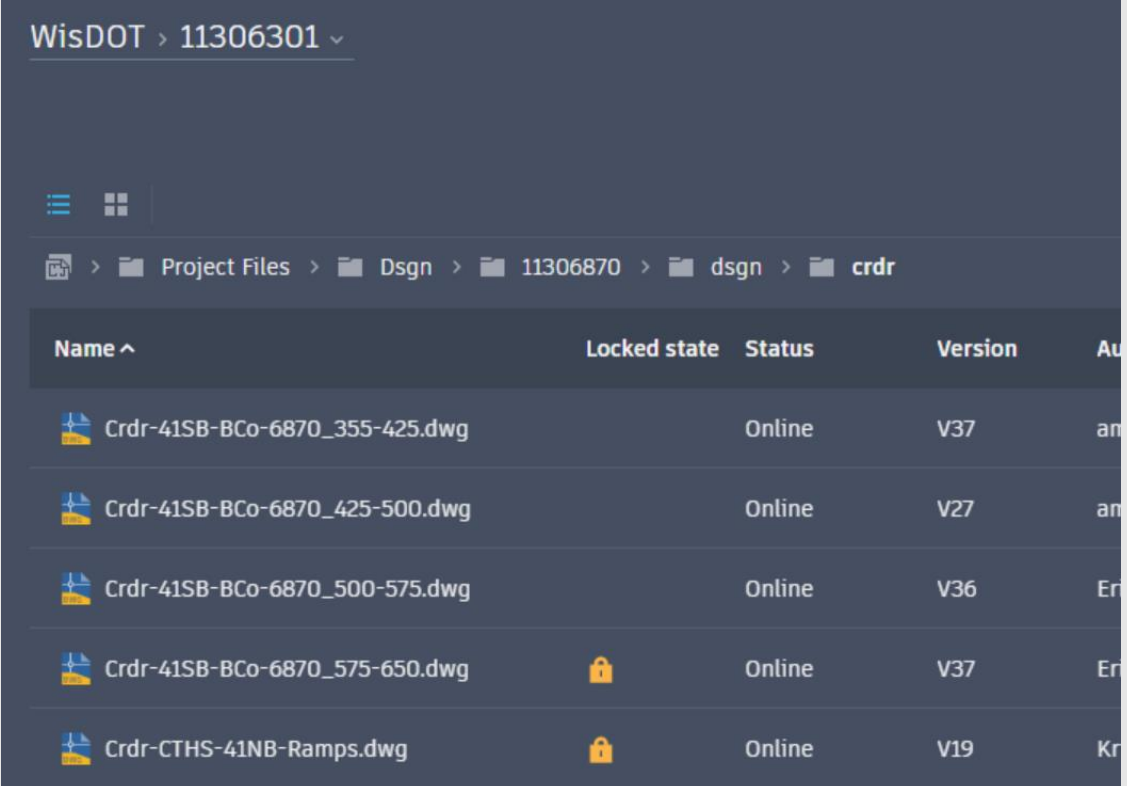
- Desktop Connector is critical. Keep an eye on syncs.
- ACC does not make your internet connection any faster.
- Desktop Connector is currently too aggressive in the depth of current version it checks with file references for our business needs.
- Autodesk working on addressing this and many other items

What have we learned?

It works 👍

- ☑ Automatic file locking
- ☑ Access to all files with appropriate permissions

What have we learned?
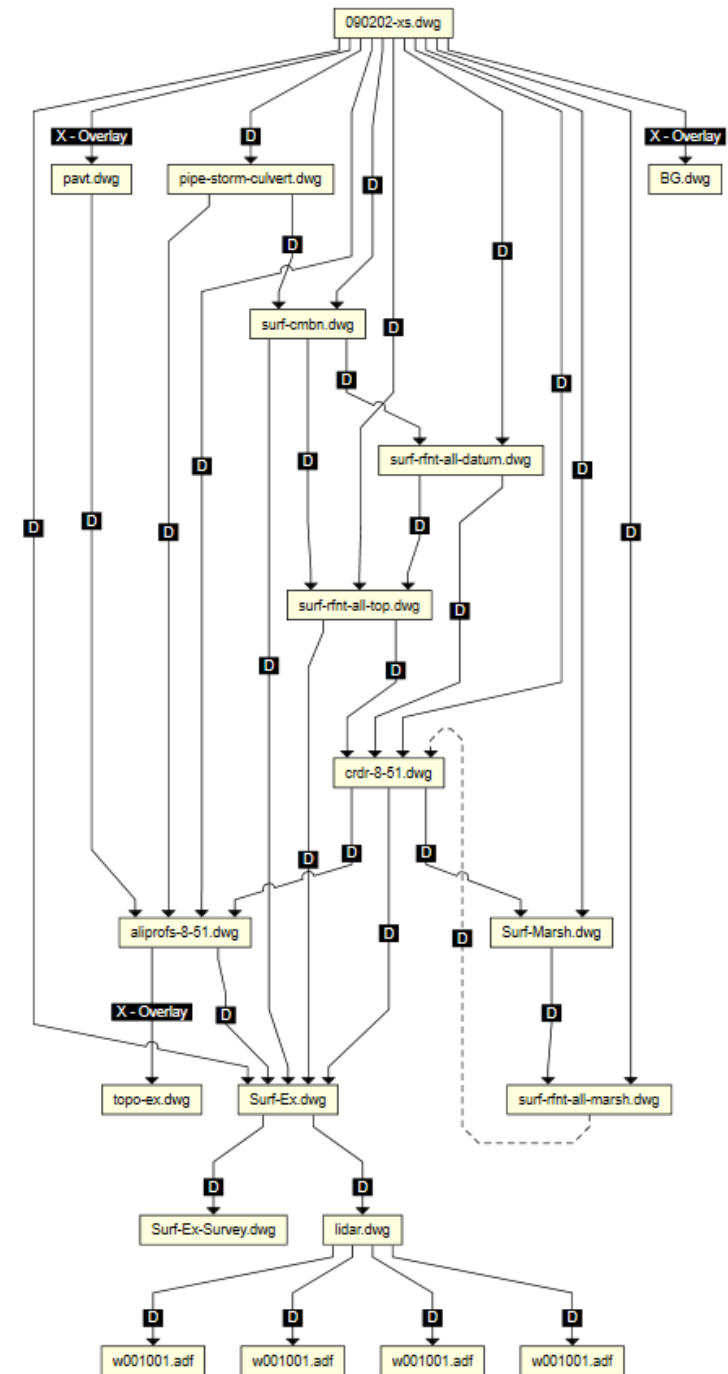
- ☑ Users can restore their own file

What have we learned?

- Sheet set manager had some issues, resolved in latest DC release (requires C3D2023).
- NO server to manage! (Just permissions and users)
- Reference Explorer in DC is AMAZING tool to analyze file connections.

What have we learned?

- Reference Explorer in DC

What have we learned?

- Web functionality is nice
  - super fast viewing of large files
  - ability to share public link to anyone [Surf-Rfnt-Southbridge-All-Top-MDU.dwg](#) Link will time out on Halloween 🎃
  - ability to compare versions

[ipit-2022-trnsprtatn-dsgn-collab-01.mp4](#)

What have I learned/remembered?

•Today's collaboration expectations are everything works immediately, perfectly, constantly

•In technology, the future is safer than the past

•No matter how good technology is, good communication is critical