ArcGIS Trace Network

Our alternative to the Utility Network
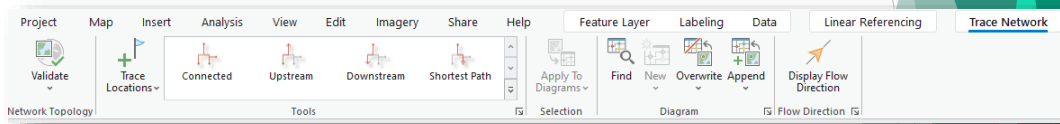
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Sort of a case study

- ▶ Why we chose to use the trace network
- ▶ Some of the challenges that we encountered
- ▶ How the trace network impacted our asset management app
- ▶ Pros and cons of the trace network

Managing utility data

▶ Had data in a geometric network

▶ Conflicting responses from ESRI support and vendors about the geometric network functioning in the Enterprise 11.1 environment

▶ Performing a complete inspection of the utility data to correct location of assets

▶ Wanted to maintain connectivity of assets to ease data editing

ArcGIS Trace Network

▶ Maintains connectivity of connected edges, junctions, or both in conjunction with network attributes

▶ Network topology provides the ability to perform validation to discover and address network errors within the data

Shows error locations

Image shows the trace network errors for points and dirty areas. Can be removed by validating on the trace network tab by either extent or entire dataset.

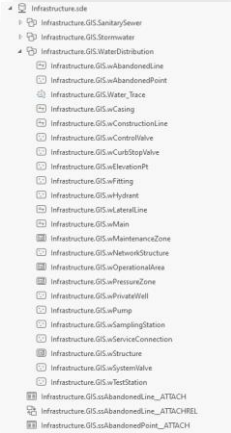Complete data review for our core area and how the connectivity made editing easier.

Conversion from Geometric Network

▶ Use Convert Geometric Network to Trace Network tool

▶ This tool converts existing geometric network into trace network. No way to get it back

▶ Highly recommended to make a new sde geodatabase and copy over geometric network data

▶ Database connection user must be owner of geodatabase

▶ Database connections cannot be Operating System Authentication

▶ The account logged into pro will become the owner of the trace network

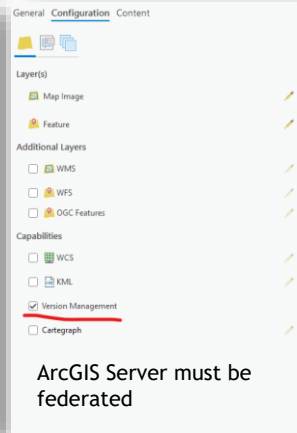▶ Can change the owner of the trace network with the Update Portal Dataset Owner tool

Cannot run enable network topology tool if not signed in as the portal trace network owner. One or two new field gets created. Flow direction field and

How to use in ArcGIS pro

Register as Branch Versioning

Publish in ArcGIS Pro

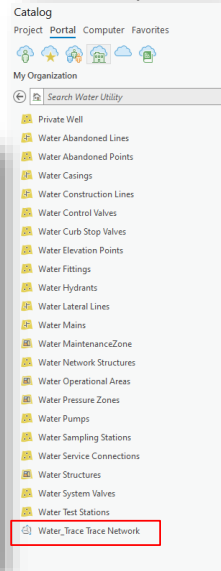ArcGIS Server must be federated

Add service to ArcGIS pro

Image on the left shows the layers as they appear in the sde.

Register as branch versioning. Issue we had was not all of the attach tables we being done at the same time as the layers. Had to go through each table to make sure. This might have just been a 2.8.8 pro version issue. Need to add all layers that participate in the trace network.

Image on right shows the layer structure of the feature service as it appears in the portal section on the catalog pane. Need to click into the feature service and can then right click the trace network layer to add all layers to a map.

Cannot publish as a service unless signed as portal trace network owner. We used our portal admin account which doesn't have a password expiration and it needs to have the trace network license.

Asset Management Apps

▶ Existing asset integration

▶ Can re-source data in those projects

▶ Source directly to sde geodatabase layers

▶ Reference sde.default(Branch)

▶ Do not include trace network layer if there are def queries

▶ Assign user in asset apps that has trace network license

Re-source data from the new sde not from the feature service. This does mean you are editing directly to the default version of your data.

Pros of the Trace Network

- ▶ Maintain Connectivity
- ▶ Run upstream and downstream traces
- ▶ Can use in ArcGIS Pro
- ▶ Easy to convert from geometric network
- ▶ $$$

Cons of the Trace Network

- ▶ Slower edit process due to service editing
- ▶ Compatibility of versions
- ▶ Separate services for each utility, need to make a version for each
- ▶ Not as robust as Geometric or Utility Network
- ▶ Adding new features to the network is difficult

Feature Cache helps offset load times of a feature service. Run the Upgrade Dataset tool to go from version 2 to 3.

Try it for Yourself!

▶ Make a new geodatabase and see if it works for your needs.

Helpful Links and Contact Info

- ESRI Site info for Trace Network
- Trace Network Compatibility

- Contact info
  - austin.braget@westfargond.gov