



WE MAKE ENERGY HAPPEN

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Practical GIS: A MacGyver Approach to Field GIS

7-10-2019 / Josh Krumski / ESRI User Conference 2019



VIRGINIA SOUTHSIDE II CONSTRUCTION
Transco Pipeline, Southern Virginia



KENSINGTON GAS PROCESSING PLANT
Columbiana County, Ohio



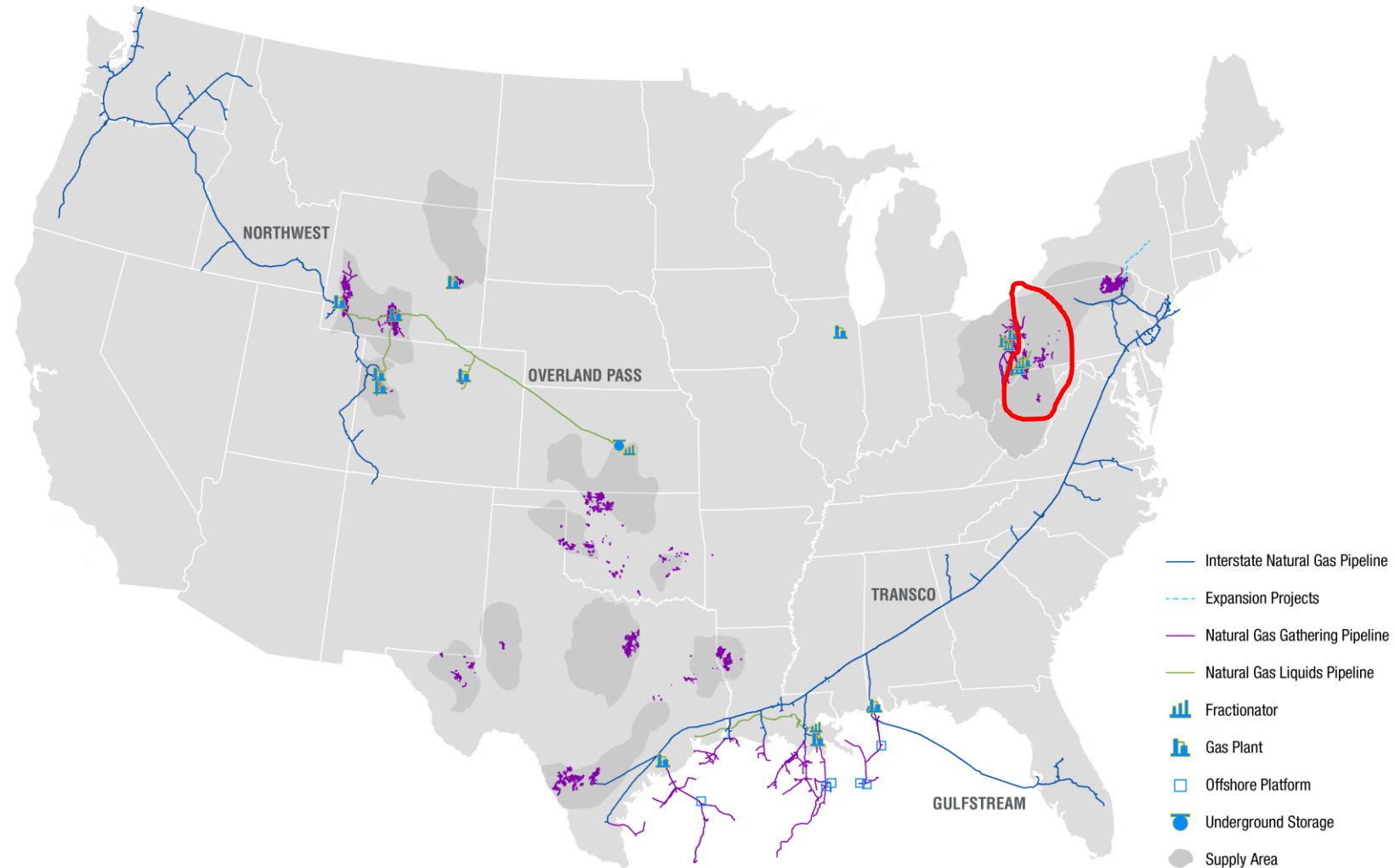
SUMAS COMPRESSOR STATION
Northwest Pipeline, Washington

Williams – Who We Are

- Williams' interstate gas pipeline, gathering and processing operations span the United States. This also includes strategic assets in the deep water Gulf of Mexico, the Rockies, the Pacific Northwest and the Eastern Seaboard
- Williams' headquarters are located in Tulsa, OK. Other major offices are in Houston, Pittsburgh and Salt Lake City.
- Founded in 1908, Williams employs more than 5,000 people.



Williams Assets – Ohio River Supply Hub (ORSH)



Who's Who of ORSH Customers

Development

- > Permitting
- > Drafting
- > Engineering
- > Construction
- > Right of Way
- > EH&S
- > Pipeline Safety



In Service

- > Measurement
- > Corrosion
- > Technical Services
- > Operations

** Being loaded for Bear will help you get through the day*

The Laurel Mountain Midstream joint venture in southwestern Pennsylvania currently includes nearly 1,400 miles of pipeline with average throughput of 200 MMcf/d. Williams owns 69 percent of Laurel Mountain Midstream and operates it. Chevron is the joint venture partner and owns the remaining 31 percent.



Everyone's Toolbox is Different...

- X Tools Pro
- Georeferencing
- Scripts
- Tools
- Data Importing/Exporting



***Different Roads will Lead You to the Same Destination**

Asset Development – X Tools – KML/KMZ

- **Future asset is initiated**
 - **Rough kml or kmz must be drawn in Development layer in GIS**
- **Desktop centerlines and associated features are drawn in GE**
 - **The following features must be converted and added to various GIS layers**
 - **Access Roads**
 - **Surface Use Areas**
 - **Built Well Pads**
 - **Landowner Boundaries**
 - **Environmental Features**

Export to KML

Input features

Output file

Labels

Label points location

Folders

Extraction boundaries

Extrusion

Options

Input features

Select input datasource
Catalog
History
Favorites

EA\PIPE SEGMENT (EA) X

Use selected features (1 out of 544)

Output file

Provide output data location
Catalog
Default path
Document locations
History
Favorites

\\wmstutgief02.williams.com\TulsaProfiles1055\jkrumski\My Documents\ArcGIS\EA_PIPE_ExportToKML.kml X

Labels

Don't label

Label by field

Use layer labeling

Label points location

Separate KML file

KML file folder

Merged with features

Import from KML

Input file

Output feature class

Output layer

Attributes

Extent

Options

Input file

Select input datasource
Catalog
History
Favorites

Input file and location

Output feature class

Provide output data location
Catalog
Document locations
Home GDB
History
Favorites

Output dataset name and location

Output layer

Provide output data location
Catalog
Document locations
History
Favorites

Output layer name and location

Attributes

Attribute

Field name

Name

Name

Description

Descr

Keep additional attributes

Extent

Use extent

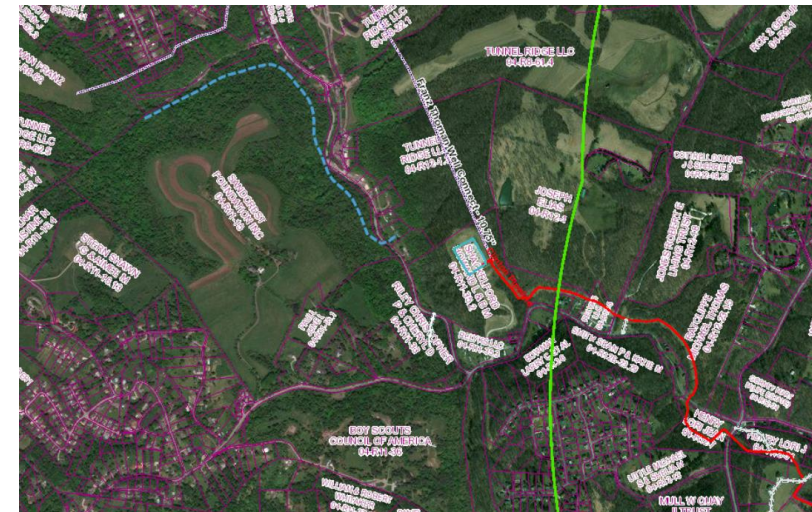
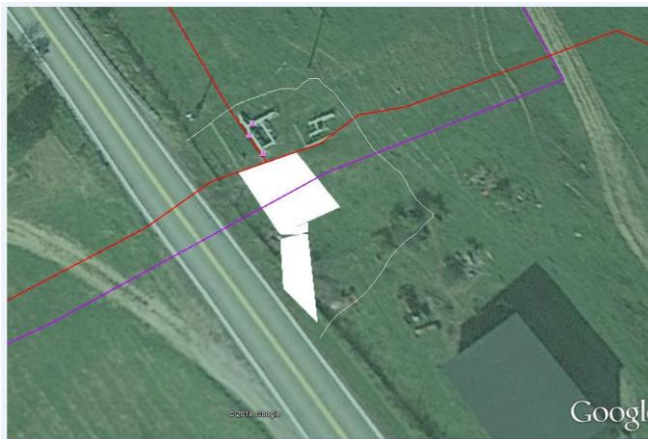
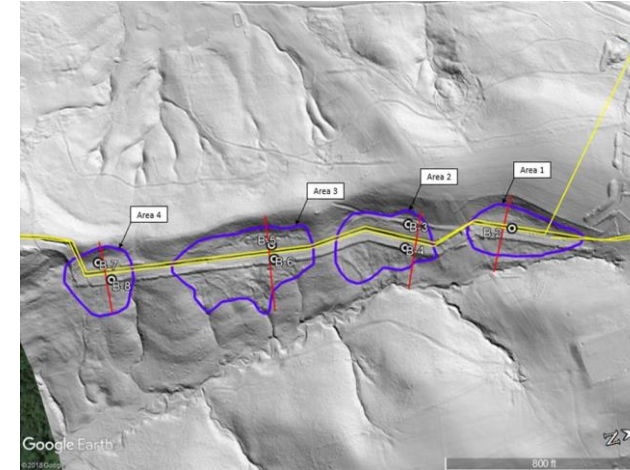
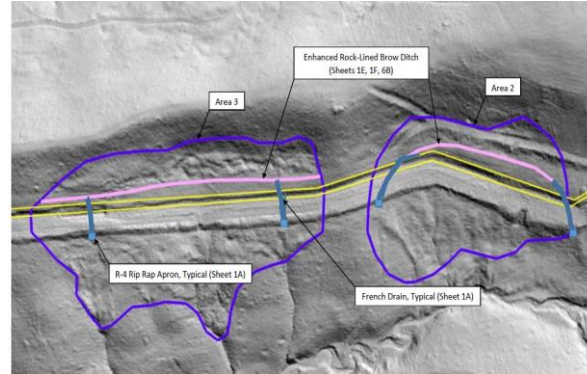
Options

Keep Z coordinate

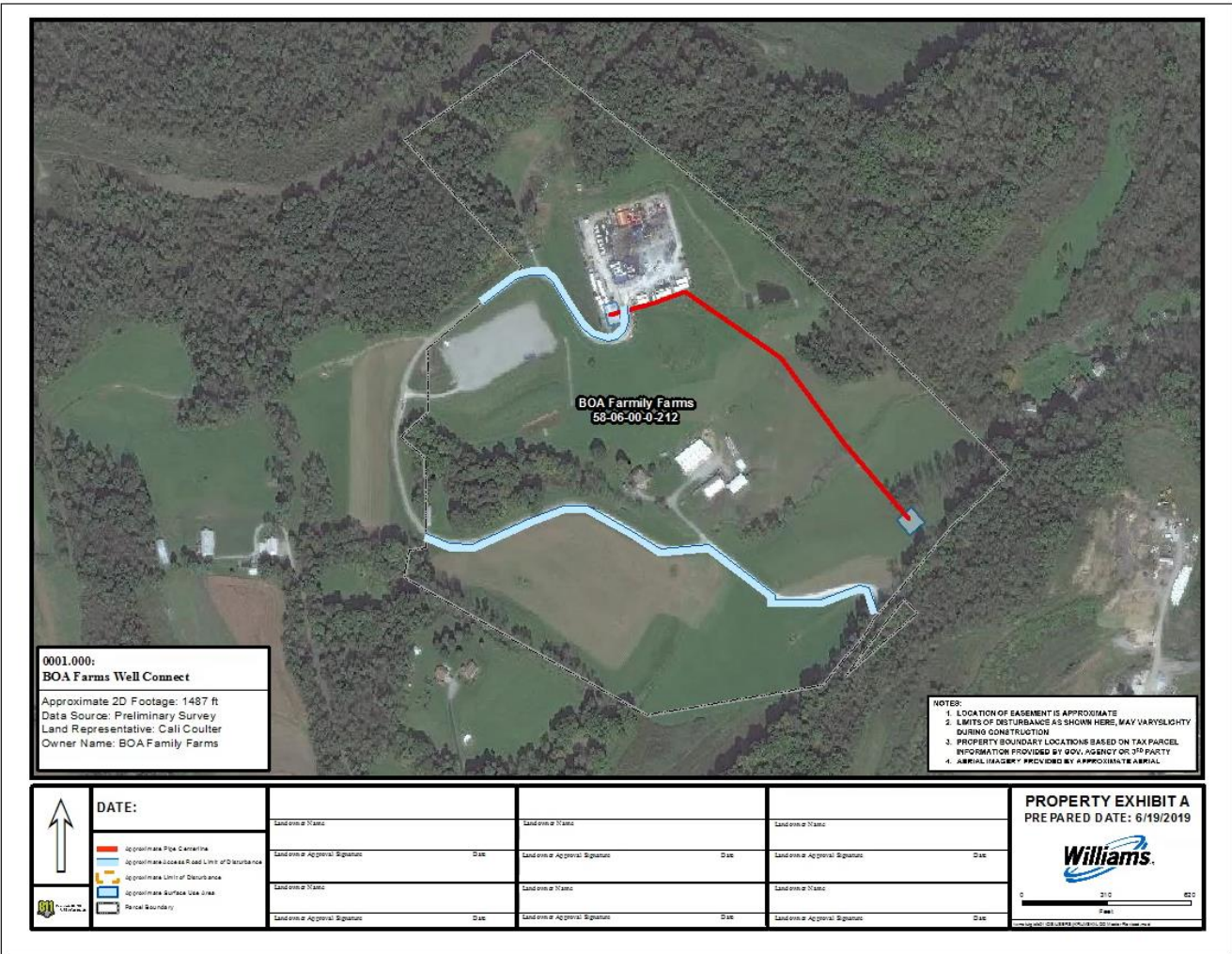
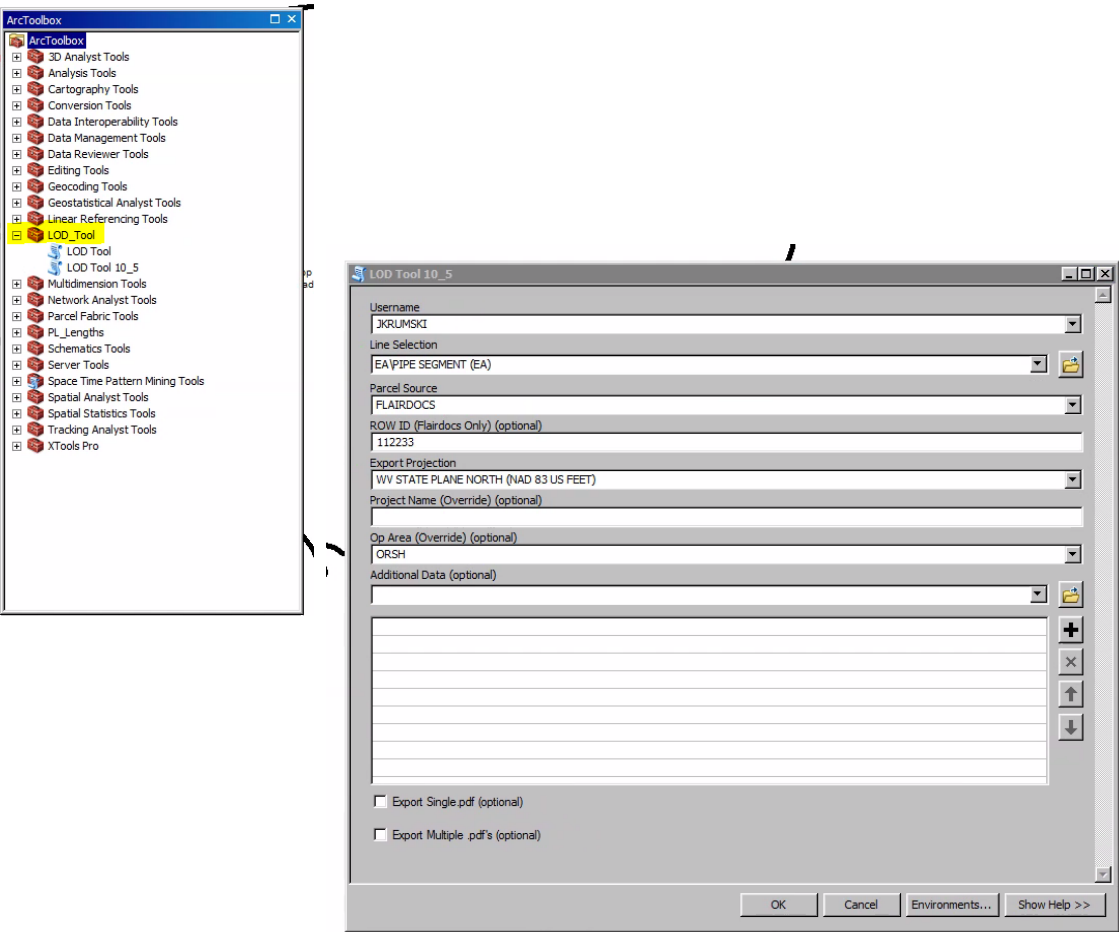
Import visible placemarks only

Run

Asset Development - Georeferencing



Asset Development - Scripts



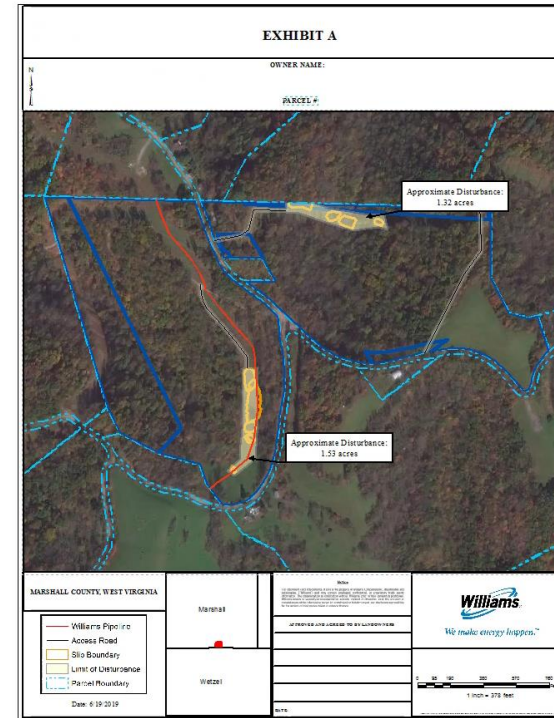
Longwall – X Tools – Data Importing & Exporting

- Longwall Mining
 - 3 Separate Mine Companies
 - Total of 7 Longwall machines running
 - Requires Williams to strip pipe during duration of Longwall and subsidence



- 3 different mining companies using 3 different coordinate systems
 - NAD 1927 WV North
 - NAD 1927 PA South
 - NAD 1983 WV North
- Every mine update requires new kml/kmz to be distributed to the Technical Services Team

Slips – X Tools

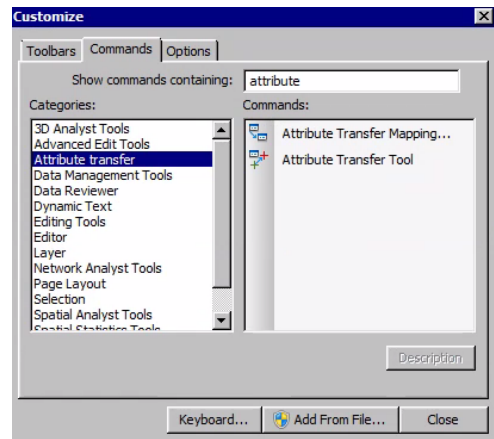
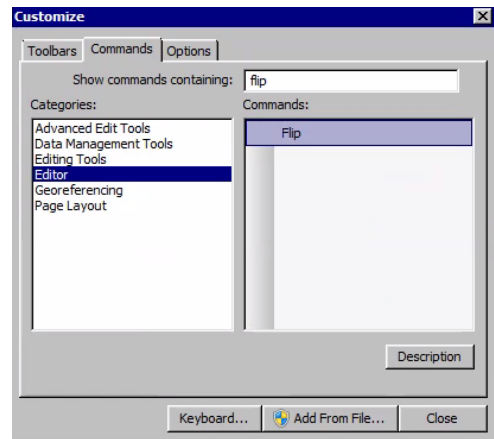
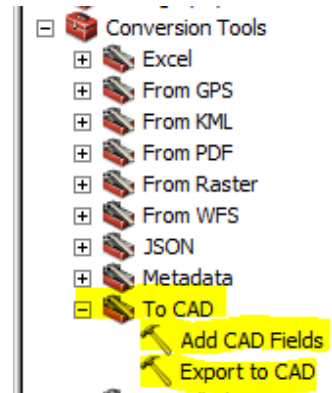
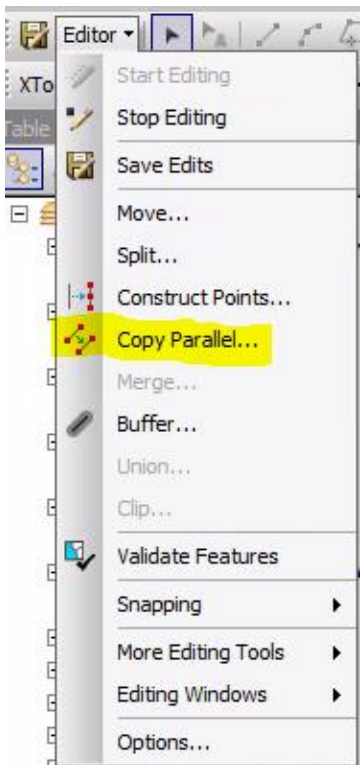
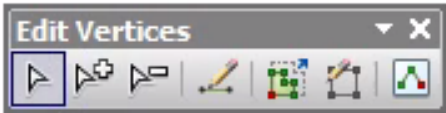


- **Slips**
 - Map and data generation
 - LIDAR to Shapefiles to KMLs or CAD
 - 2018 162 days of precipitation
 - Precipitation 81 days YTD*



*As of 7/1/2019

Asset Development and Operational Stages - Tools



Conclusion



**Know what you have at hand,
know how to use it, and be able
to adapt it to any situation**

**Field GIS never Fails...We
have Various Levels of
Success**

**DON'T FEAR FAILURE.
DON'T DWELL ON
MISTAKES. DON'T
GROW PRIDEFUL OR
COMPLACENT DURING
SUCCESS.**

QUESTIONS?

