pivvot

FINDING THE OPTIMAL ROUTE

PIPELINE ROUTING BEST PRACTICES

PIPELINE ROUTING TODAY

- Subjective, Objective & Can Be Controversial
- Information is Critical
- Routing Projects are Intense – Answers are Needed ASAP
- Perspective Plays a Big Role in Routing
- Everyone's Idea of a Good Route is Different

The only good route is a built pipeline with dirt over the top!

CHALLENGES

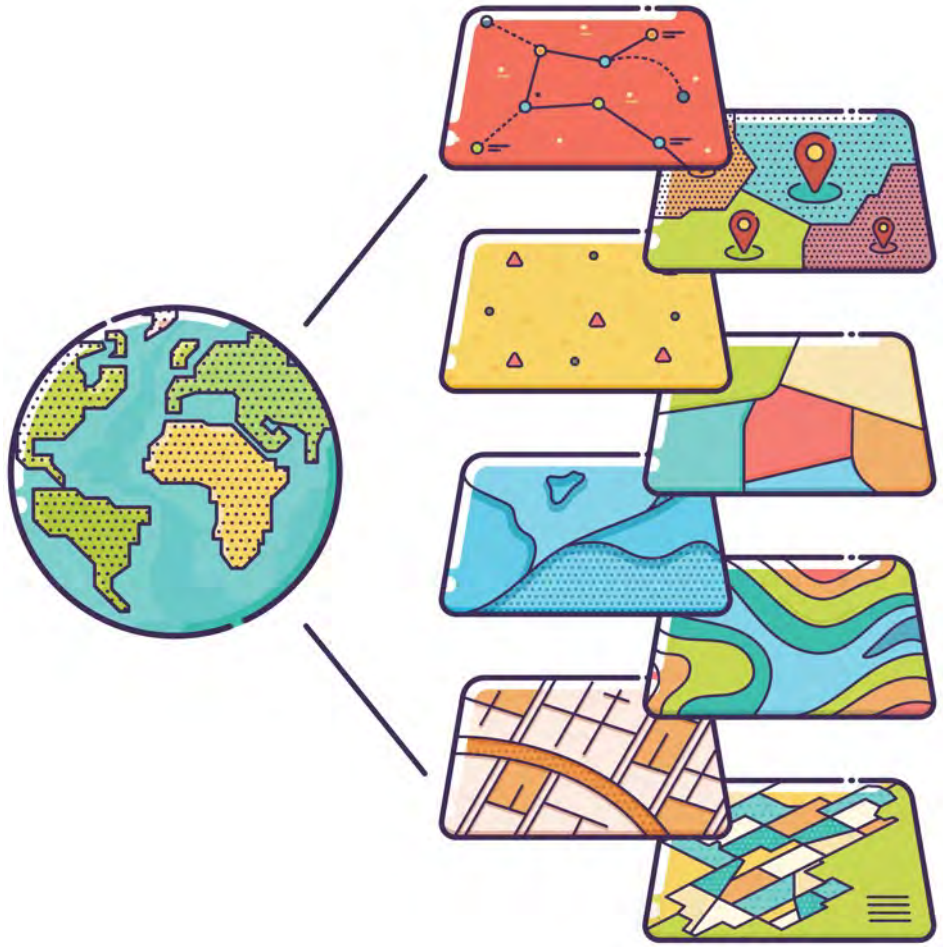
DATA COLLECTION

CHALLENGES

- Traditional Collection Methods
- Data Volume and Storage
- GIS Expertise; Field Expertise
- Time is Money!
- What If… You Could Click a Button

DATA PREPARATION

- Evaluation & Analysis
- Example Complexities:
  - Digital elevation models to slope models.
  - Aggregating soils data based on engineering design, env., etc
  - Transforming floodplain into 100-year floodplain and 500-year floodplain datasets
  - Raster to vector conversions
- Data Integrity
- Time is Money!



TIME & COLLABORATION

SHRINKING SCHEDULES

- Project engagement is critical
  - Commercial Team
  - Board of Directors / Stakeholders
  - Contractors/consultants
- Project collaboration
  - Communication is key
  - What gets LOST in Translation?
- Time is money!

SEE THE TREND?

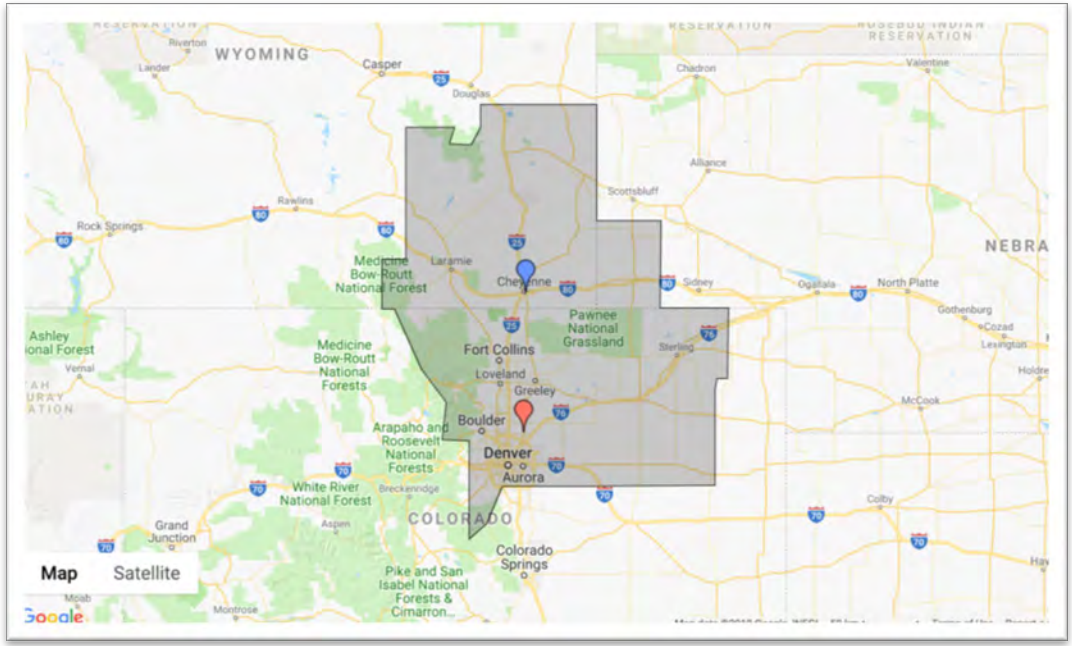
TIME IS MONEY!

- Data analysis and preparation takes time
- **Communication** is Hyper-Critical
- Transfer of Information = Lost In Translation
- Shrinking schedules and the competitive nature of our business

SOLUTION

UNDERSTANDING THE DATA

Aquifer	Depth to Bedrock
Commercially Navigable Waterway	Congressional District
County	Critical Habitat
Ecosystem Region	EPA 303 C & D Waterbody
EPA 303 Protected Waterbody	Existing Pipeline
Fault Area	Floodplain 100 Year
Geologic Unit	Karst Topography
Land Use and Land Cover	Powerline
Known Utilities	Landslide Risk
Levee	Stream & River
Waterbody	Wetland
Parcel Boundary (Client or County provided)	Peak Ground Acceleration
PHMSA Drinking Water & Ecological HCAs	Known Land Ownership Potential Conflicts
Percent Slope	SSURGO Soil/Rock
Populated Areas	State Legislative District
Infrastructure & Structure (Non-Digitized)	Transportation (Roads, Driveways, Trails, Highways, RR)
U.S.A.C.E. District	U.S.F.W.S. Regional Boundary
Corridor Collocation	



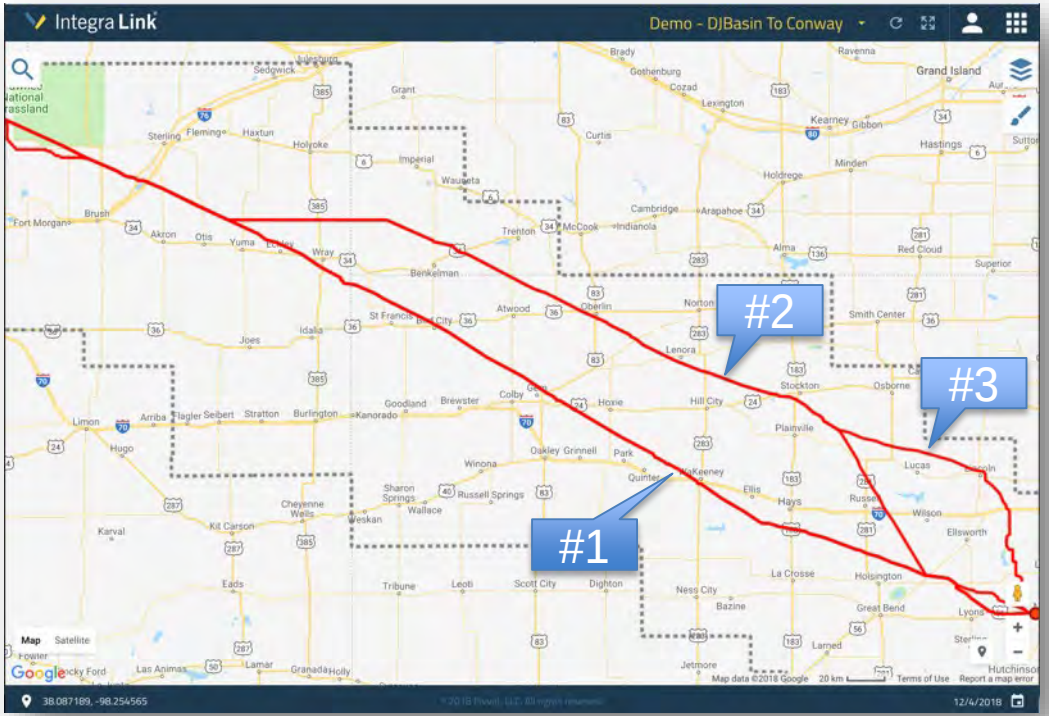
UNDERSTAND THE OPTIONS

DEVELOP MULTIPLE ROUTES

- Greenfield, collocation, mix of greenfield and collocation, etc.
- Be ready to generate alternatives

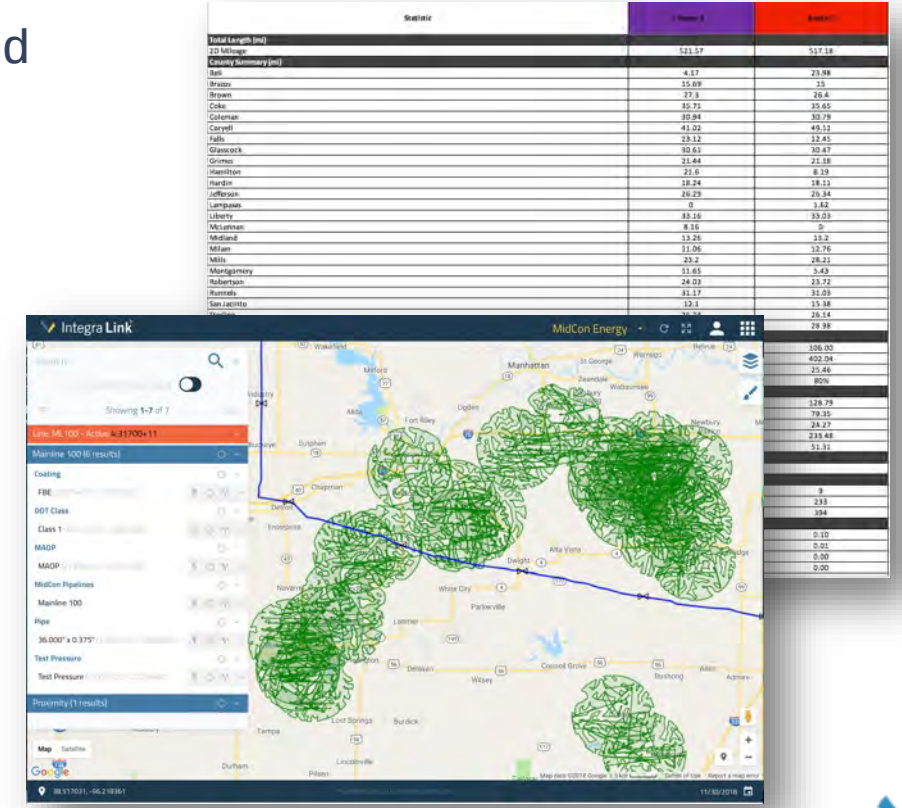
DEFENSIBLE DESIGN

- The primary route must be as defensible as possible
- Always identify a secondary and tertiary route



REPORTING FOR DEFENSIBILITY

- Reporting needs to be geared around the following:
  - Environmental and Regulatory
  - Engineering & Design
  - Land and ROW
  - Construction
  - Public Affairs support
  - Legal support
- Making your case with reporting… and a map.
  - Data in a map vs data in a report



SUMMARY

UNDERSTAND THE DATA

- Data Collection & Analysis

COLLABORATION IS KEY

- Communicate with Various Stakeholders
- Weight Competing Priorities

GENERATE MULTIPLE OPTIONS

- Defend Your Route
- Impact & Crossing Reports

THANK YOU!

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