



ANALYTICS EXCHANGE NVC

LEARNING SUMMIT 2025

WEDNESDAY, OCTOBER 22- THURSDAY, OCTOBER 23

DATA SCIENCE · DATA GOVERNANCE · DATA ENGINEERING

**We'll get started in a
few minutes!**

LEARNING SUMMIT 2025

Meet the Team



Maddalena
Romano

Analytics and
Performance



Esteban
Doyle

Public Realm



Karissa
Listrand

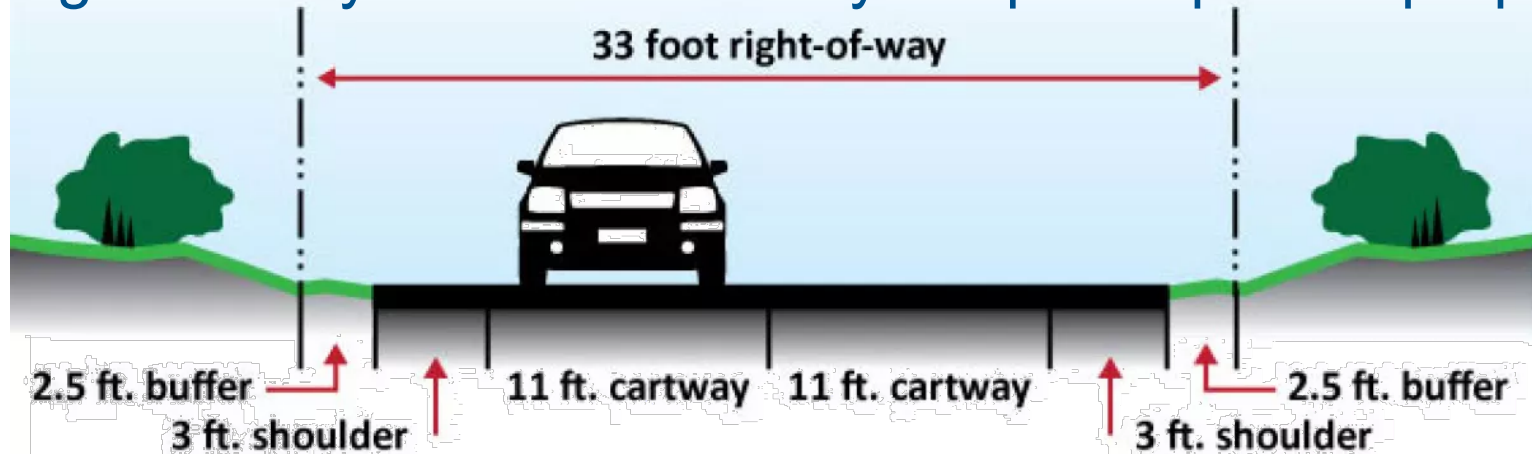
Public Realm

AGENDA

- Background
- ArcPro Method
- ArcPro Results
- ArcPro Limitations
- Python Method
- Python Results
- Next Steps

What is Right of Way?

- Strip of land used for public passage and transportation
- Include sidewalks, drainage, medians, landscaping, utilities
- Public easement or owned property
- “Right-of-Way Line” is boundary bet public/private property



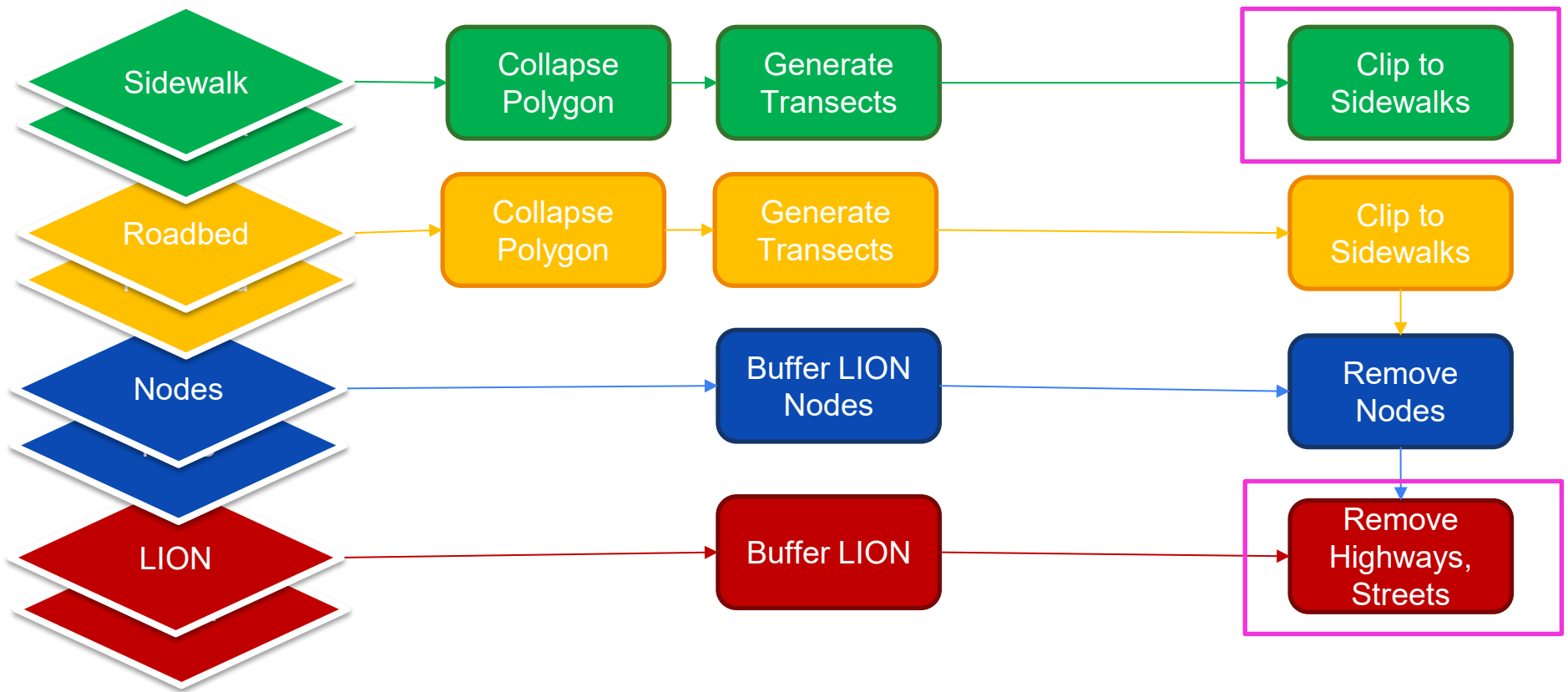
Why Do This Project?

- Accurate Sidewalk and Street ROW width crucial for planning/design, and can benefit DOT/other agencies
 - Identify locations to prioritize
 - Curb extensions, sidewalk extensions, plazas, shared streets
 - Advocate for policy changes
 - Prioritize sidewalk space for pedestrians
- Previous data is outdated and contains errors and inconsistencies

NYC OpenData

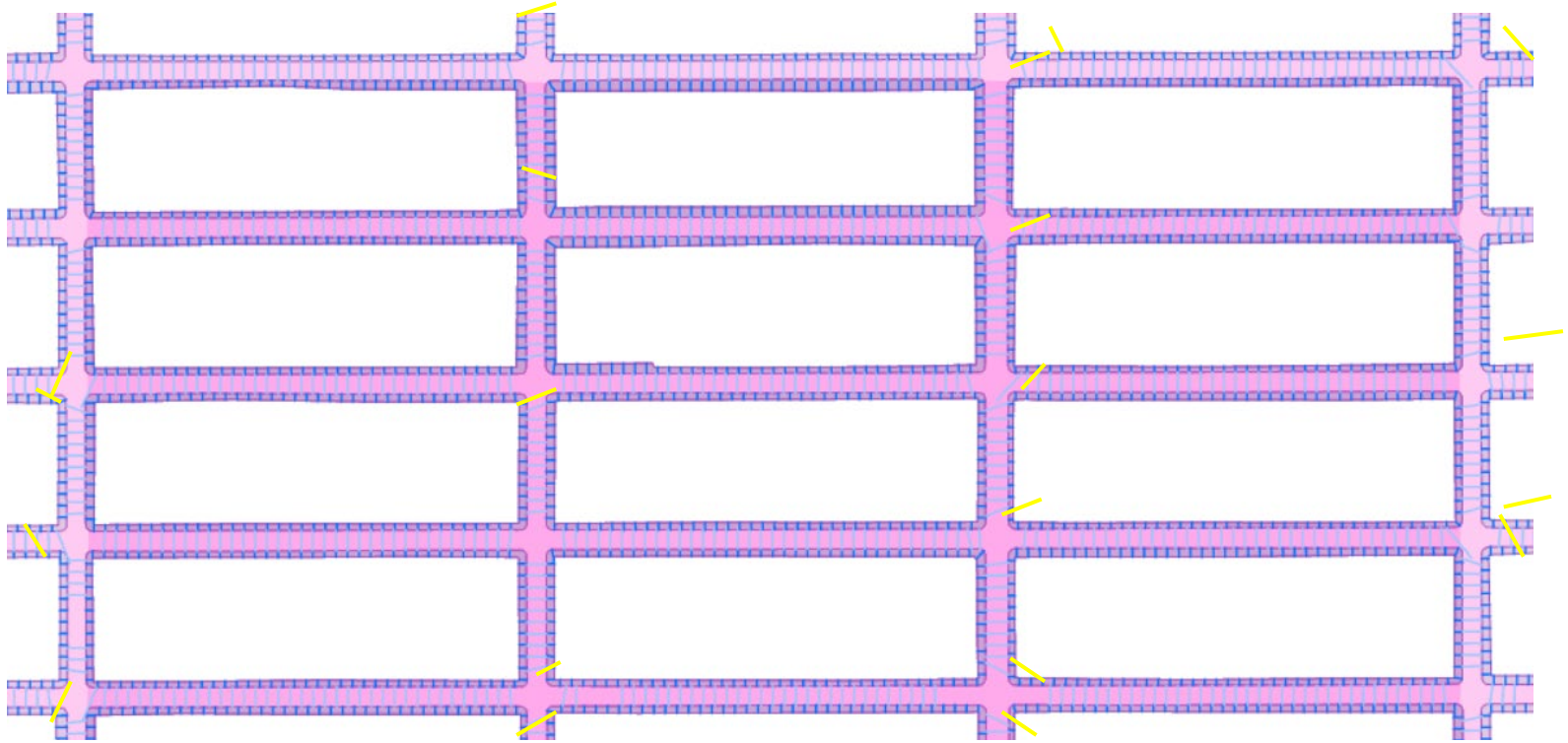
- [Roadbed](#)
- [Sidewalk](#)
- [LION](#)
- [MapPLUTO](#)
- [Building Footprints](#)





ArcPro Method

ArcPro Results



So Why Not Use ArcPro?



- Spatial joins produce errors
- Directionality of transects
- Directionality of attributes
- Dependency on ArcPro



Why Python?



GeoPandas: Idiomatic vector GIS operations using GDAL / Fiona / Shapely



Shapely: Modern, robust geometry for clipping transects to polygon edges



Fiona: Stable read / write of Shapefile / GeoPackage formats



Matplotlib: Lightweight map previews

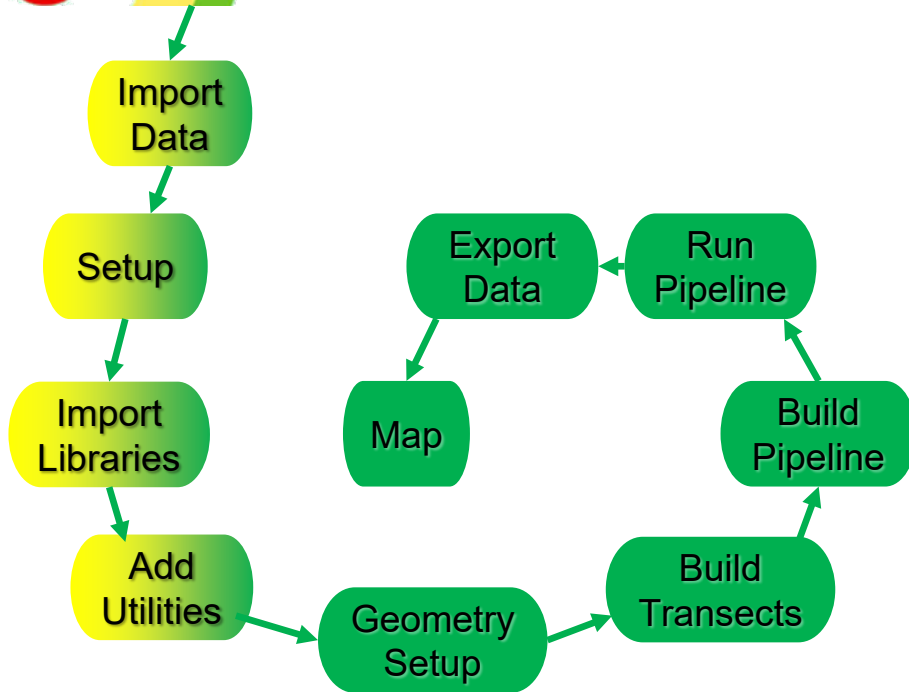


Python Method (High Level)

- Load Roadbed and Sidewalk data Project to EPSG:2263 (feet) for distance math
- Calculate centerline using min. bounding box long axis
- Sample points every 20 ft along the centerline
- Build perpendicular raw transects
- Clip transects to polygon edges
- Export Roadbed and Sidewalk transects



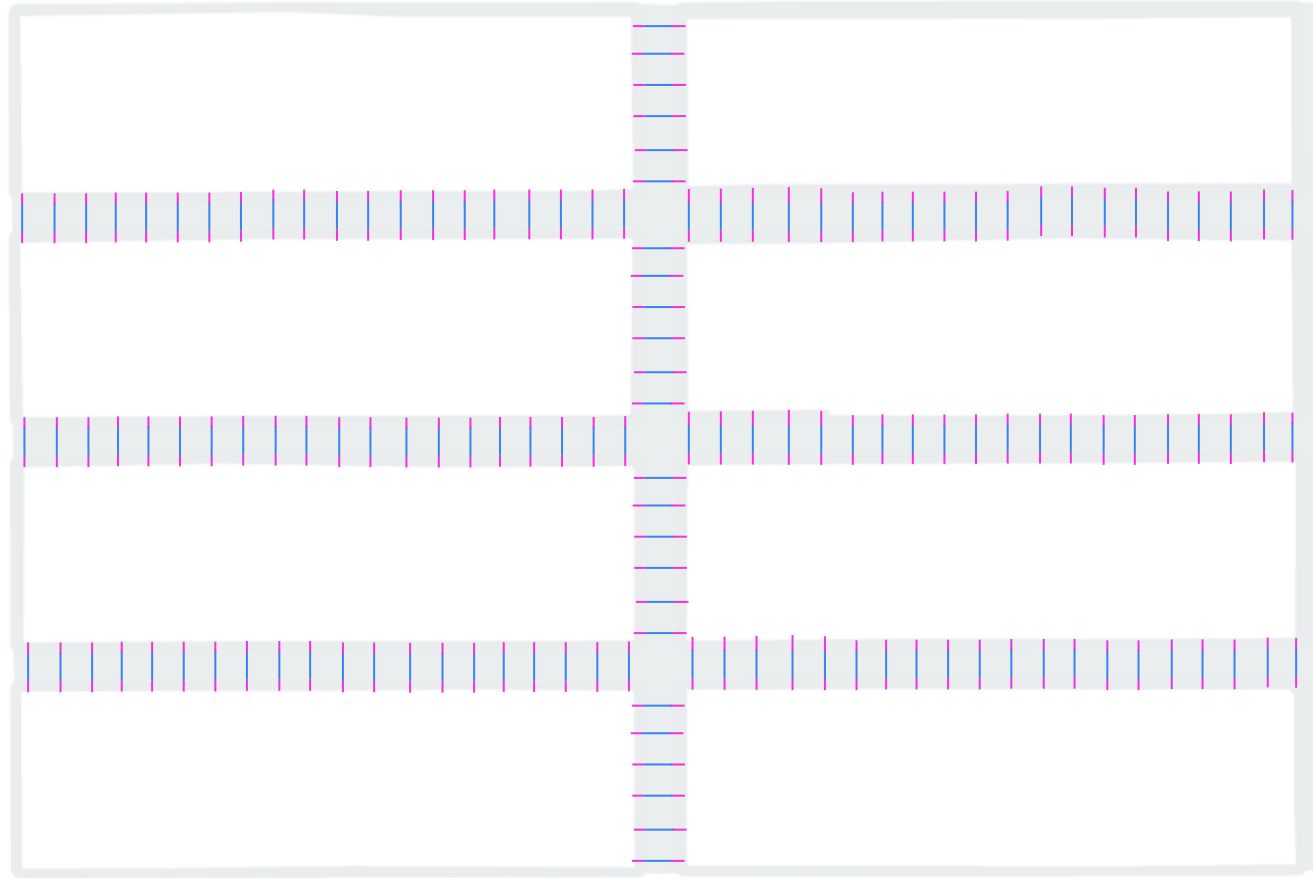
Python Method (Detail)



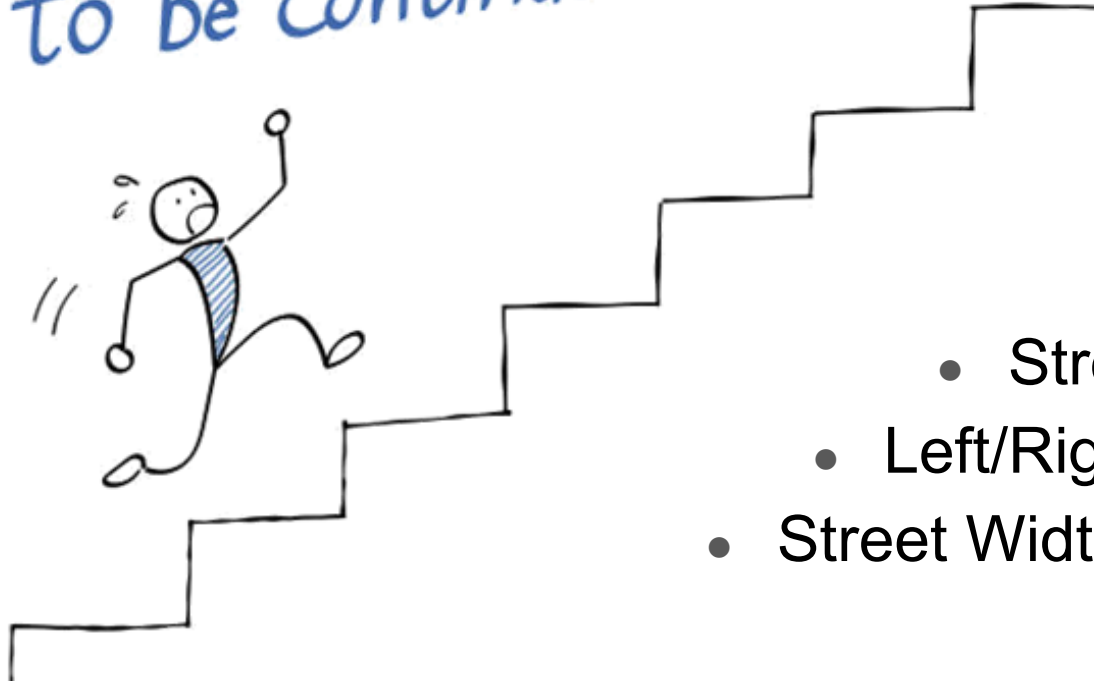


Let's Check Out the Jupyter Notebook

Python Results



to be continued



Add attributes

- Street name
- Street Segment ID
- Left/Right Blockface ID
- Street Width Right-Of-Way
 - And so on



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github.com/mromano1/Street-Width-ROW



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Register for more sessions
at bit.ly/anexagenda

WEDNESDAY

9AM - 10AM Introduction to Causal Policy Analysis

10AM - 11AM Automating Tasks with GitHub Actions

11AM - 12PM Establishing a Central Data Function

1PM - 2PM Calculating Street Width Right of Way

2PM - 3PM SQL Cheat Codes

THURSDAY

9AM - 10AM Very Effective Data Sharing Agreements

10AM - 11AM Old School SQL Performance Tuning

11AM - 12PM Data Documentation

1PM - 2PM Getting Started with Python and Public APIs

2PM - 3PM Clear and Engaging Data Presentations