

# Community Development Visualization

UCB Data Analytics Project 2

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Winnipeg

Reston

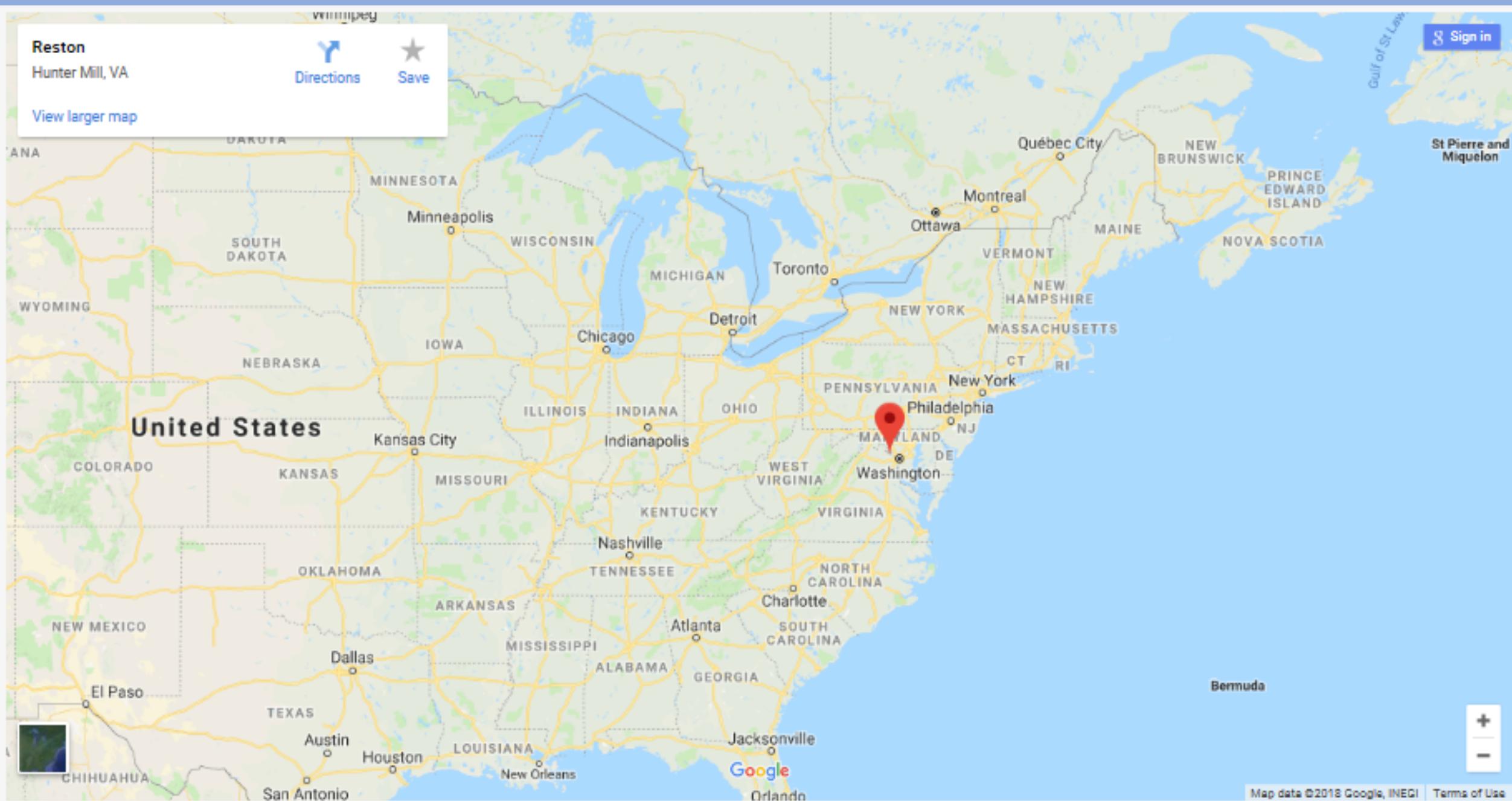
Hunter Mill, VA

Directions

Save

[View larger map](#)

Sign in

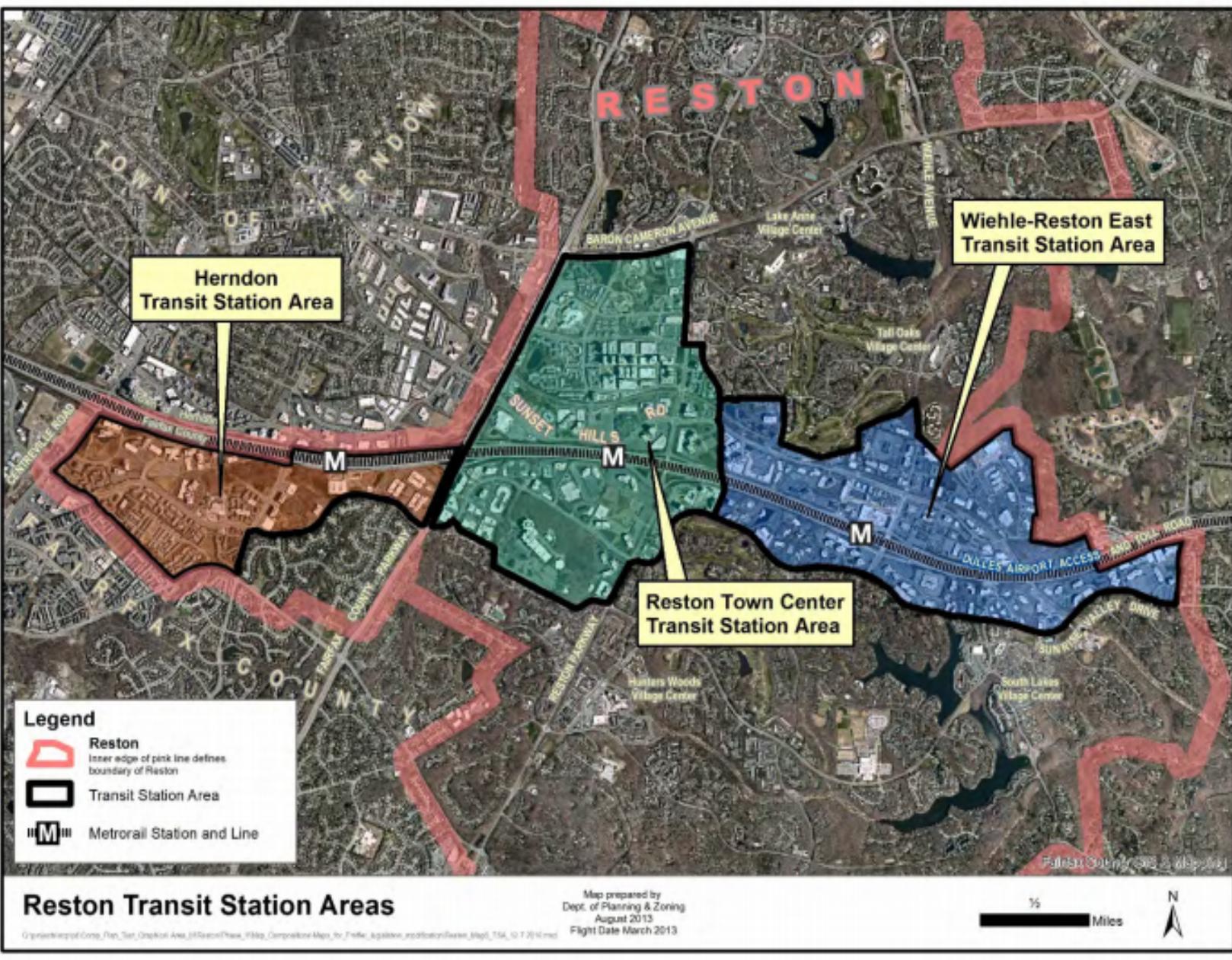


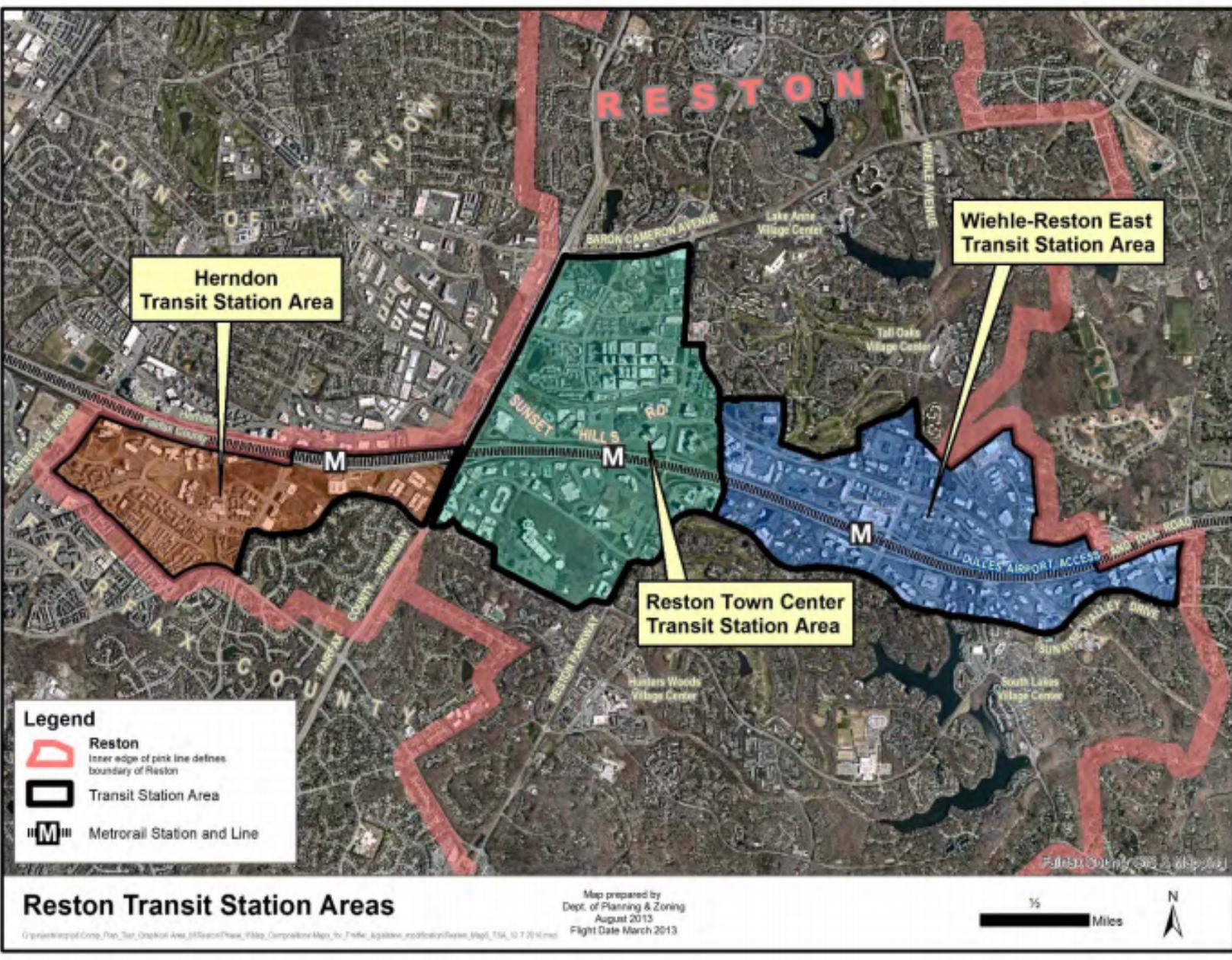
# Theme

Reston, VA is a fast developing area within Fairfax County, VA. The impetus for the development in this area is the recent extension of Washington Metro.

A 2014 Planning Study has re-planned this area to transform this area to include a vibrant mix of uses, with the majority of future development focused near the station locations.

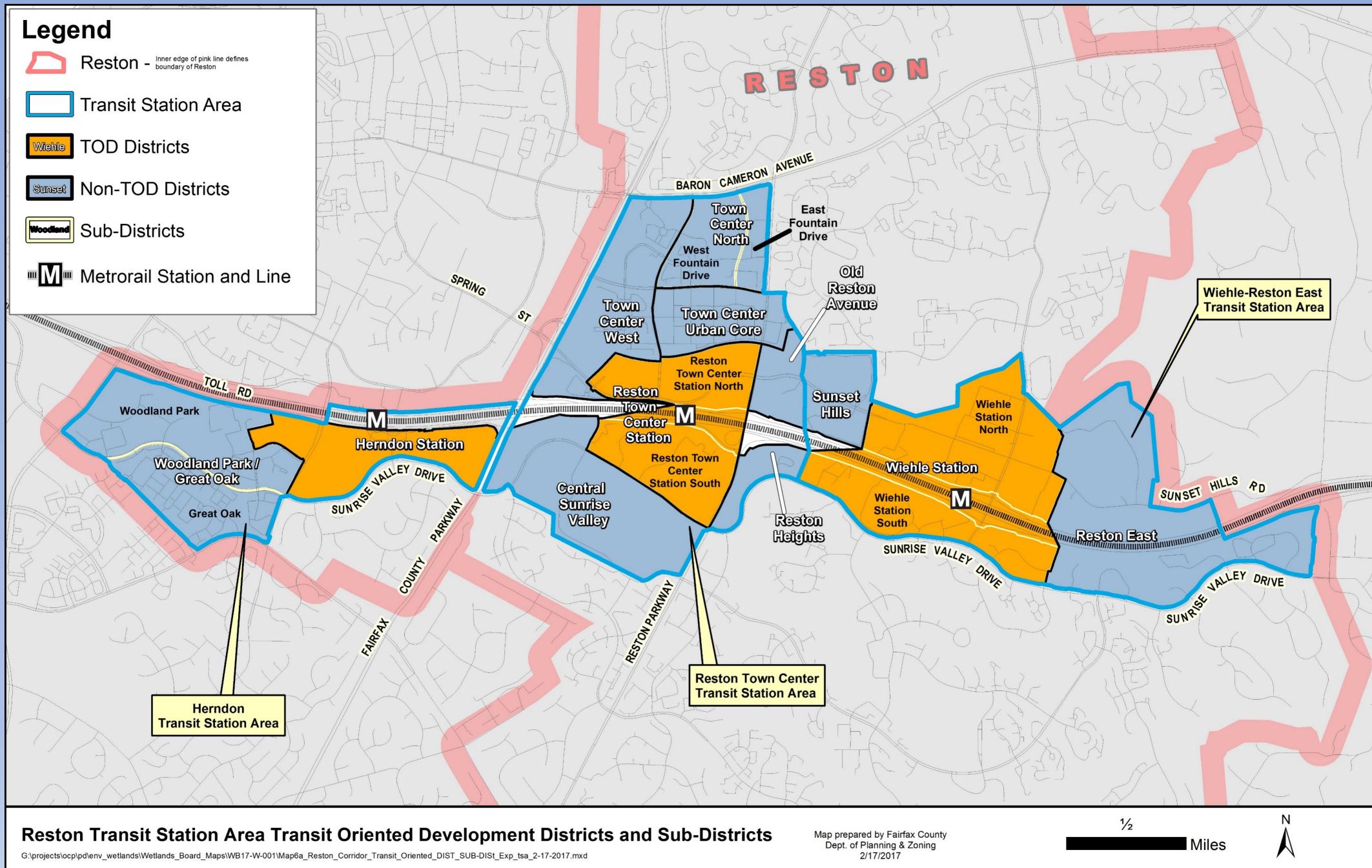
The master Plan created three new Transit Station Areas (TSA). Each TSA is further divided into Districts and Sub-Districts. The master Plan has guidance as to how specific areas within these TSA redevelop.





## Legend

- Reston - Inner edge of pink line defines boundary of Reston
- Transit Station Area
- Wiehle TOD Districts
- Sunset Non-TOD Districts
- Woodland Sub-Districts
- M Metrorail Station and Line



# Analytics paradigm

- This tool will help the County staff and citizens to monitor the current and future development potential/activity for any given area in the TSAs and analyze if the Plan's long-term goals are met.
- In addition, this tool will let the users to engage in scenario building activity to understand the impacts of specific development plans.

# Coding approach

- Full stack web application for a dashboard page with multiple charts
- Github (<https://github.com/indranik/Project2>) repository from day one
  - Proposal in README.md
  - Use of git Issues to define and assign tasks
  - Use of git branches to merge updates via pull requests and approvals
- Additional library not used in class:
  - JS slider package: jqwidgets (<https://www.jqwidgets.com/>), jqxchart
  - Menu styling and title animation: Animate.css (<https://daneden.github.io/animate.css/>)
  - Leaflet.shapefile and Leaflet.groupedLayers

# Data munging techniques

- Dataset includes:
  - Fairfax County's Tax Records and Plan Buildout and development pipeline data in csv, shapefile and sqlite db formats
- Flask app:
  - JavaScript logic for DOM elements manipulation
    - Use of d3/svg for graphics controls
    - Use of POST/GET methods for data transfer: from user selection to logic for data filtering and calculations and data display.
  - SQLite database for data manipulation
    - Use of SQLAlchemy for creating session to retrieve data
    - Use of db functions like sum to process over the data.
  - Pandas for shaping data to the Web
    - Final data manipulation for Web display of user selections

# Final Visualizations

- User input components:
  - Dropdown list selection
  - Map layers
  - Slider
- Visualizations
  - Table summary data
  - Gauge
  - Map pins
  - Bar plots

