



Multimodal Transportation Analysis

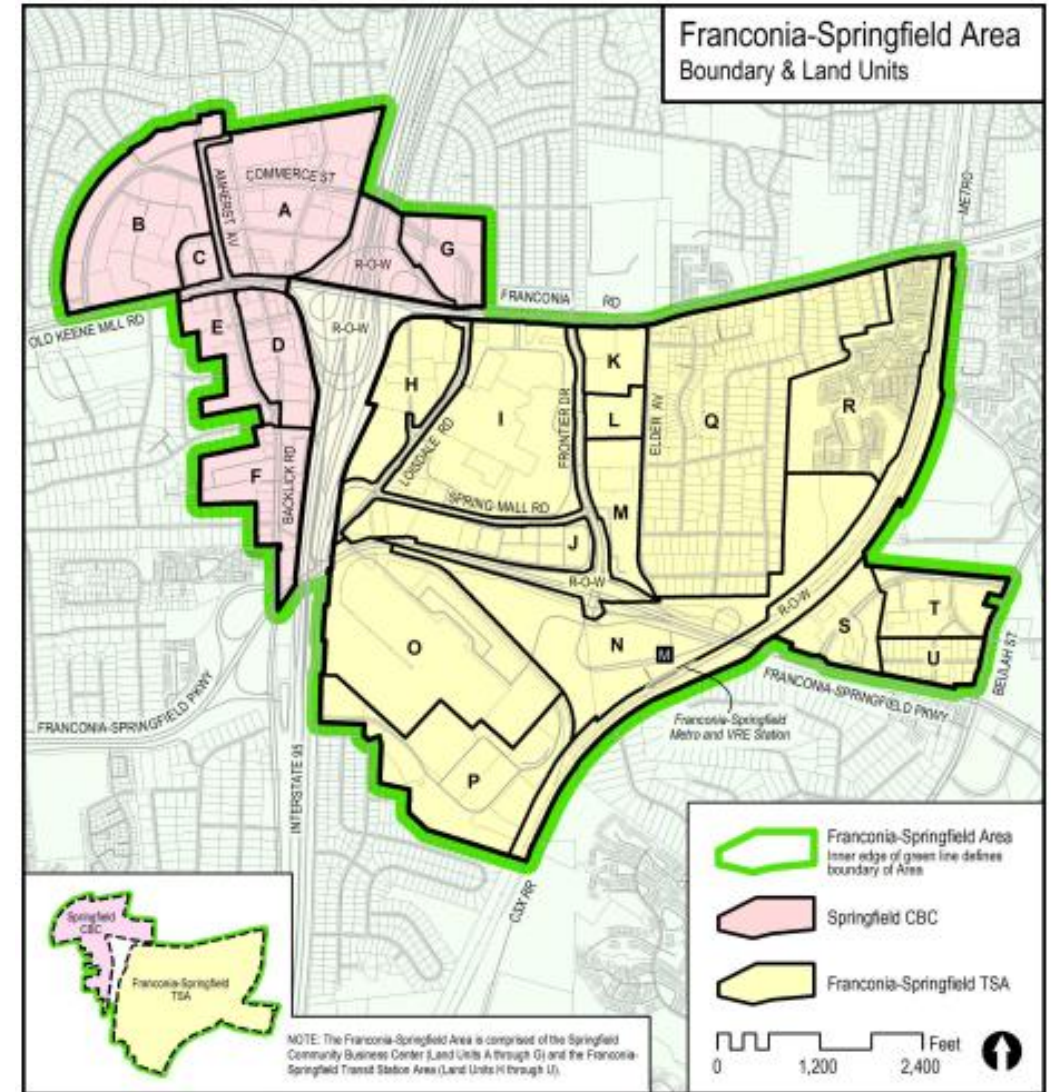
Franconia-Springfield Area Plan

Fairfax County Department of Transportation

October 2025

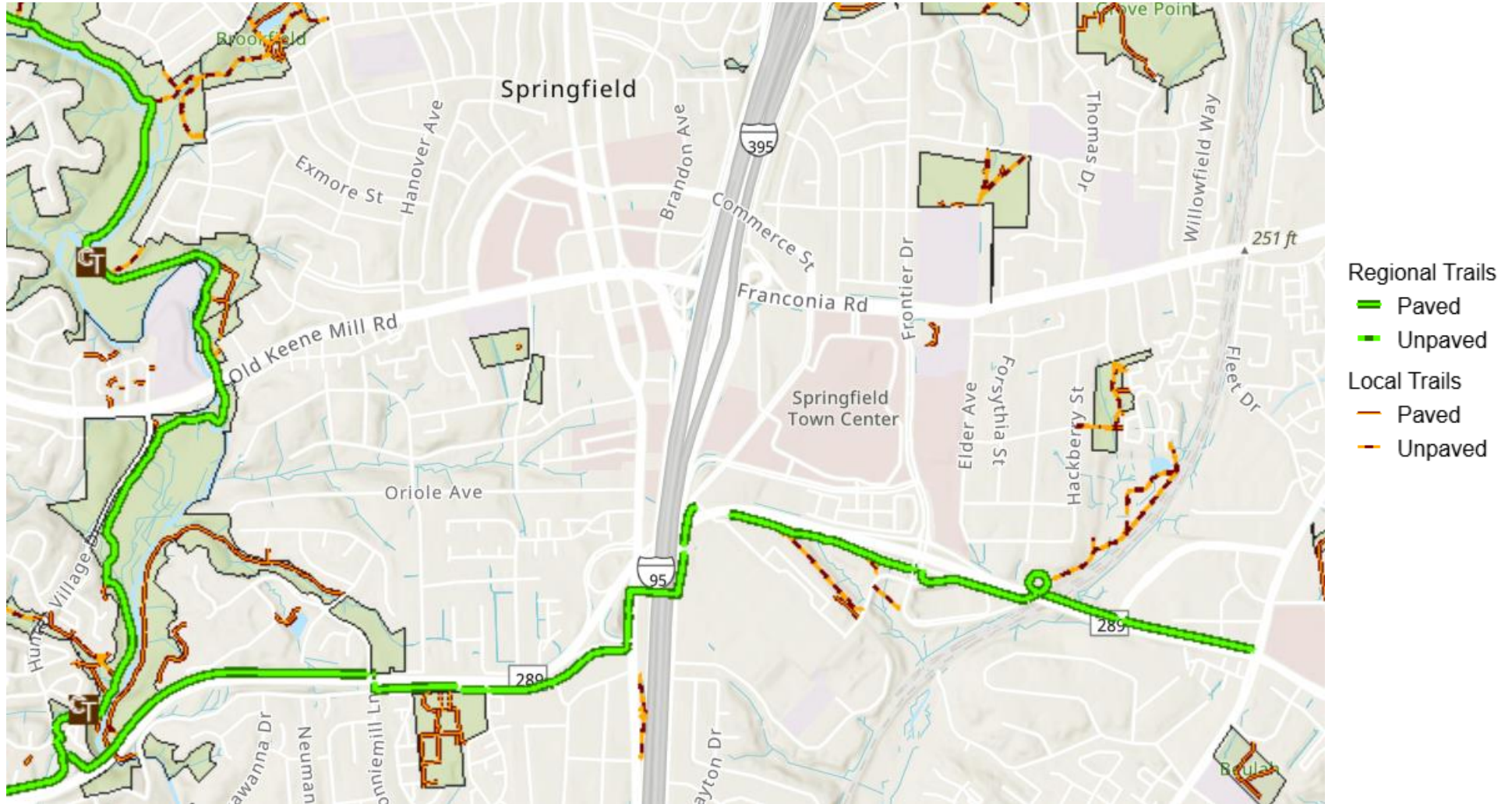
Agenda

1. Existing Conditions & Current Plans
2. Multimodal Transportation Analysis
 - Overview
 - Existing Conditions Analysis
3. Next Steps

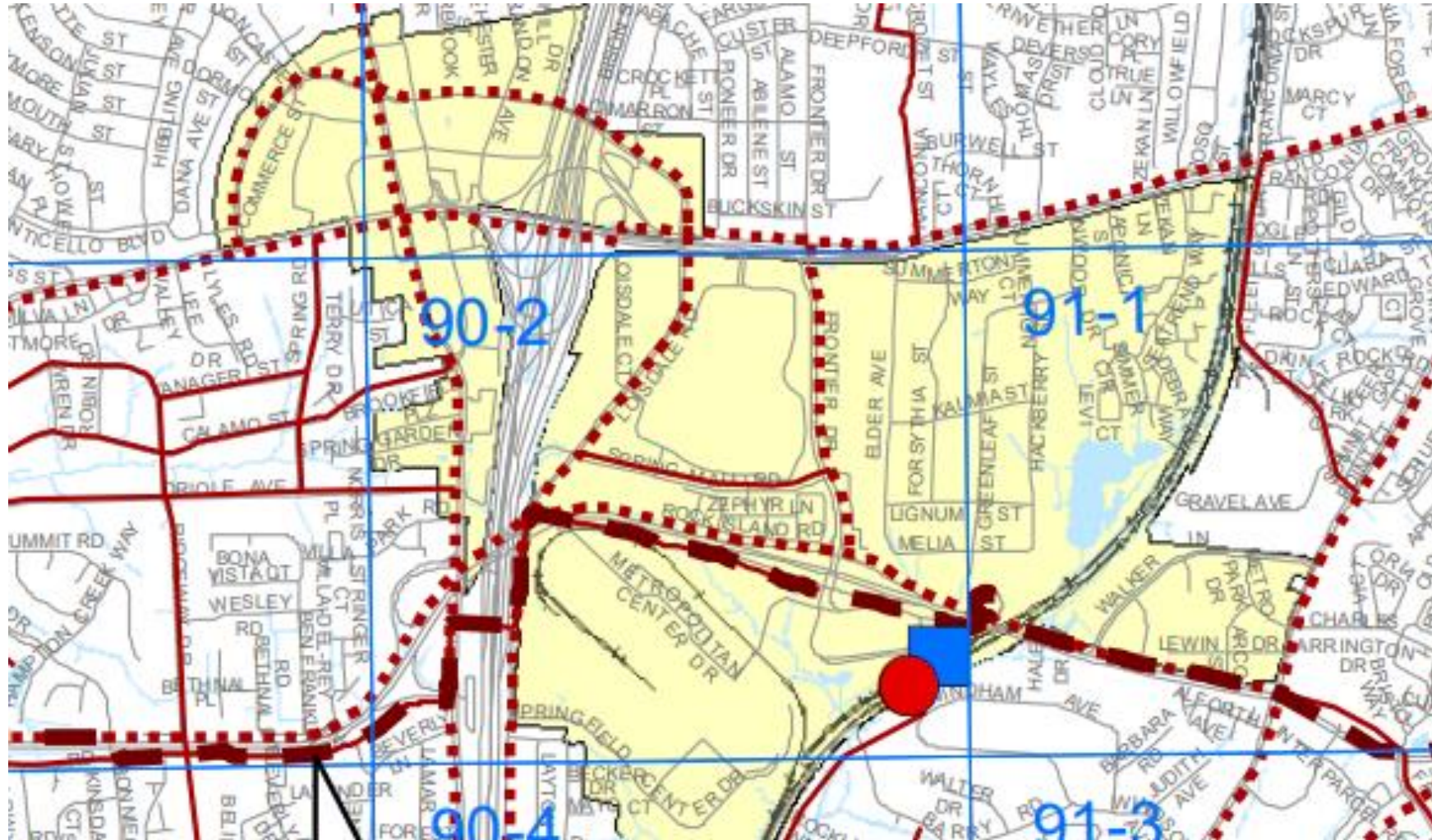


Existing Conditions & Current Plans Transportation

Existing Conditions – Trail Network

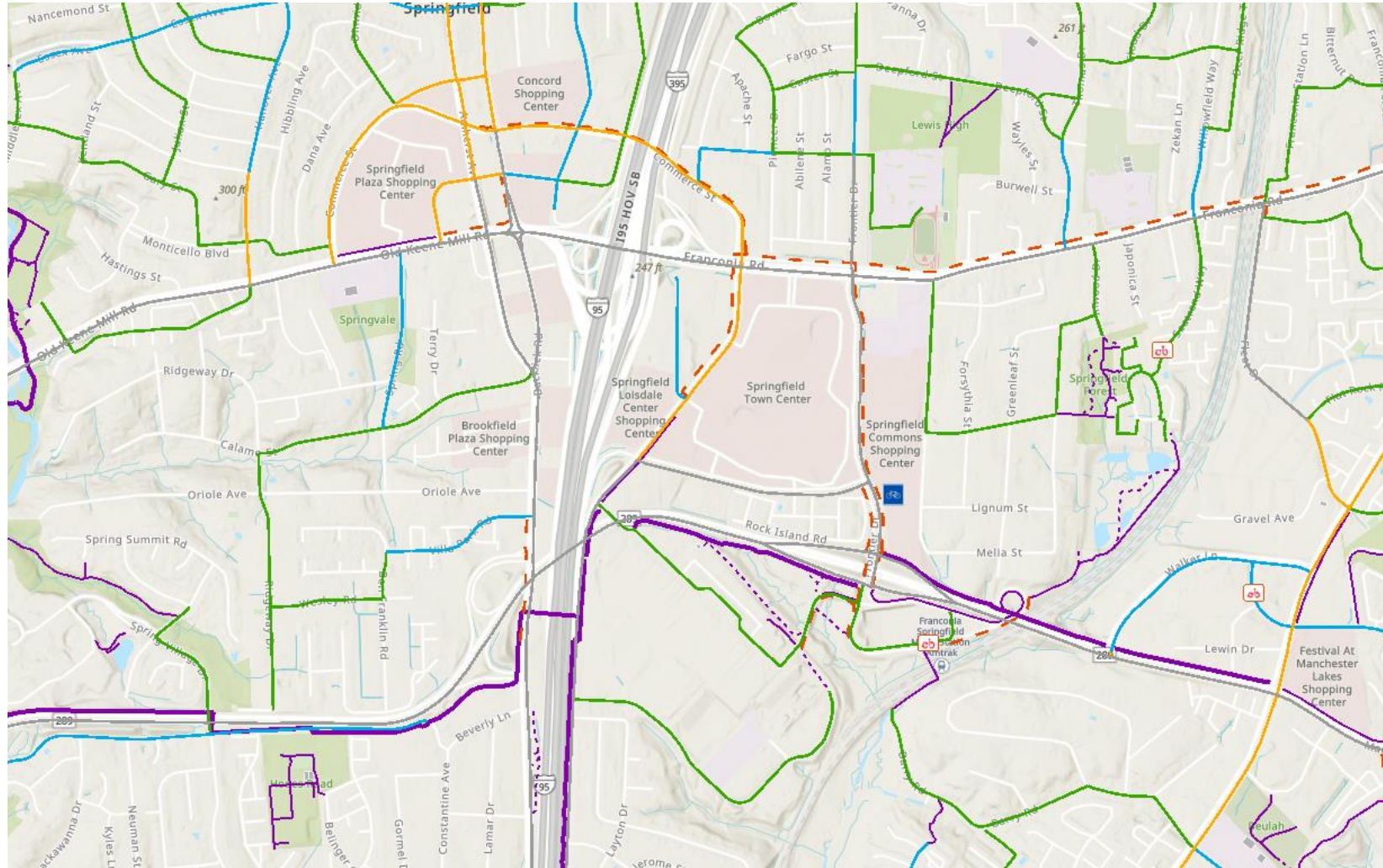


Planned – Countywide Trails Plan Map



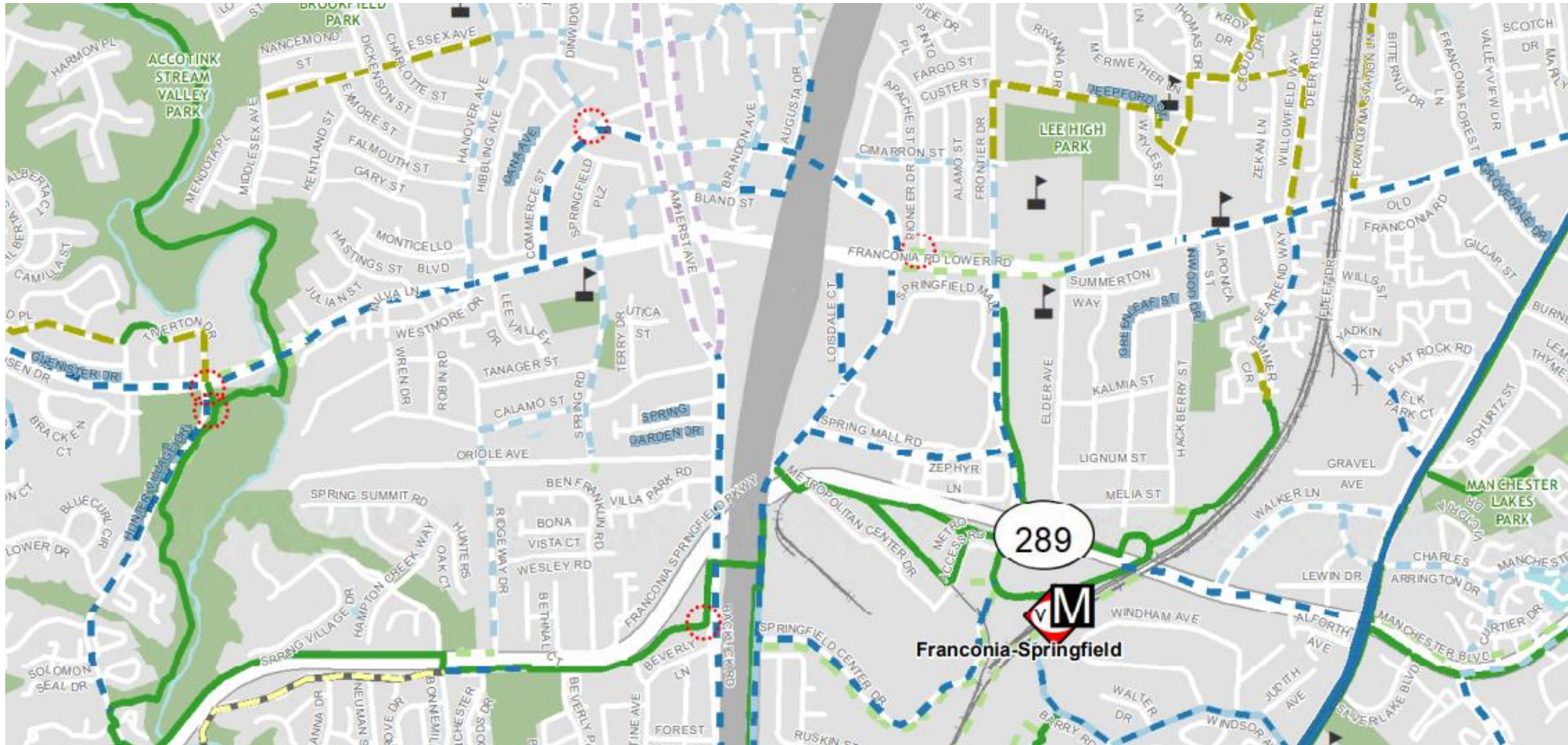
- Area with other specific guidance regarding streetscaping and trail requirements. Consult Area Plan documents for details. (See Note 1)
 - Supervisory Districts Boundary
- Trails**
- Major Regional Trail System (See Note 2)
 - Major Paved Trail (See Note 3)
 - Minor Paved Trail (See Note 3)
 - Minor Paved Trail with parallel
 - Natural Surface or Stone Dust Trail (See Note 4)
 - Natural Surface or Stone Dust Trail (See Note 4)
 - Stream Valley Trail
 - Trails in Other Jurisdictions
- Rail Transit Stations**
- Rail Transit Stations
 - VRE Stations

Existing Conditions – Fairfax County Bicycle Map



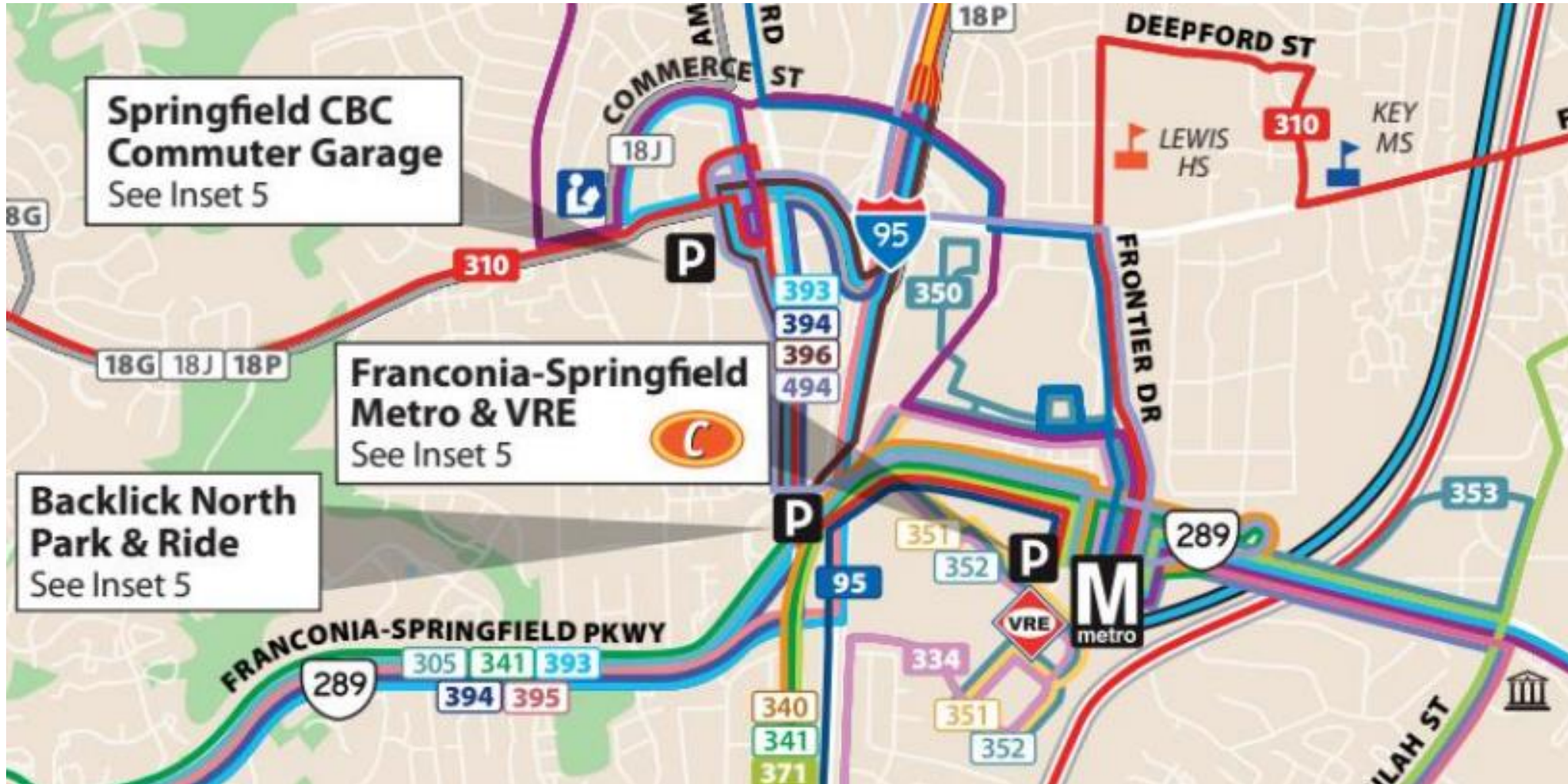
- Bicycling Routes**
- Most Comfortable
 - Somewhat Comfortable
 - Less Comfortable
 - Use Caution
- Trails (Shared Use Paths)**
- Primary
 - Secondary
 - Natural Surface
 - Bikeable Sidewalk

Planned – Bicycle Master Plan Map

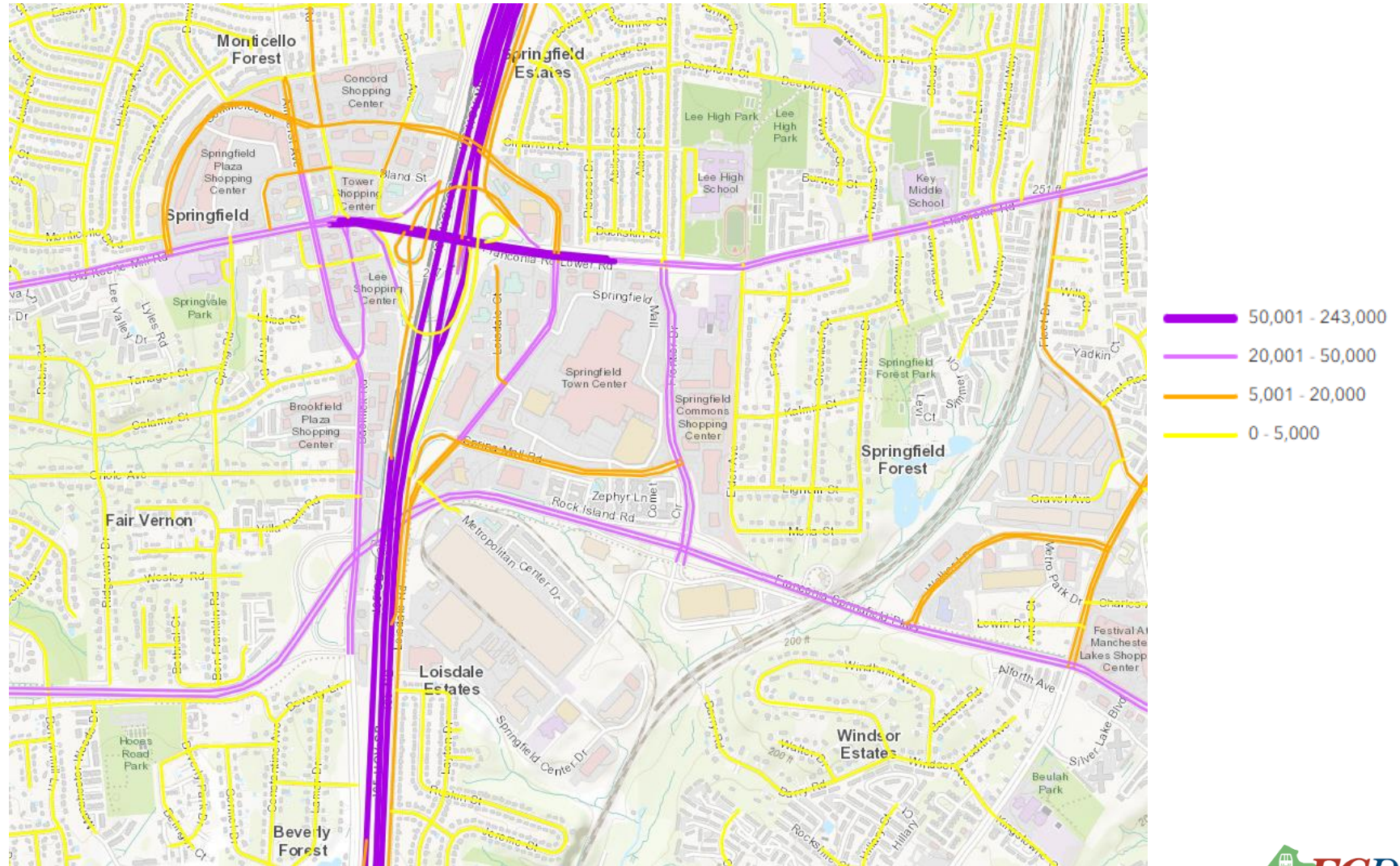


- Existing Facilities**
- Bike Lane
- Existing Off Street Trail
- Recommended Facilities**
- - - Bike Lane
- - - Buffered Bike Lane
- - - Sharrow
- - - Climbing Lane
- - - Striped Shoulder
- - - Shared Roadway
- - - Shared Roadway w/ Safety Treatment
- - - Shared Use Path
- - - Cycletrack
- Policy Roads**
- Bike Access Links
- ✕ Road Crossing
- ✕ Stream Crossing
- M Metro Station
- ◇ VRE Station
- Parks
- ▲ Public Schools
- Railroads

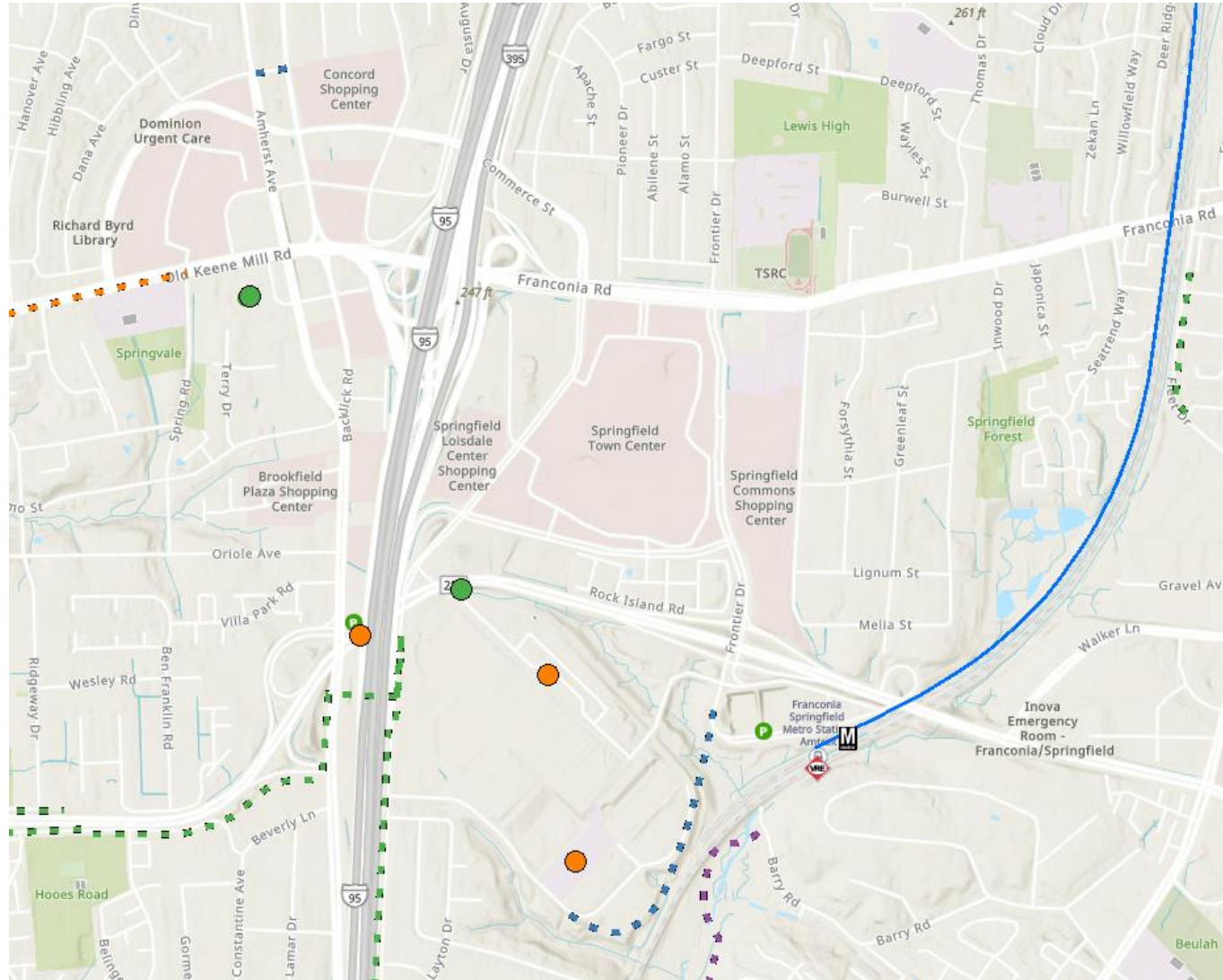
Existing Conditions – [Transit Network](#) (Planned – [Transit Strategic Plan](#))



Existing Conditions – Average Annual Daily Traffic



Existing Conditions & Planned – Transportation Projects



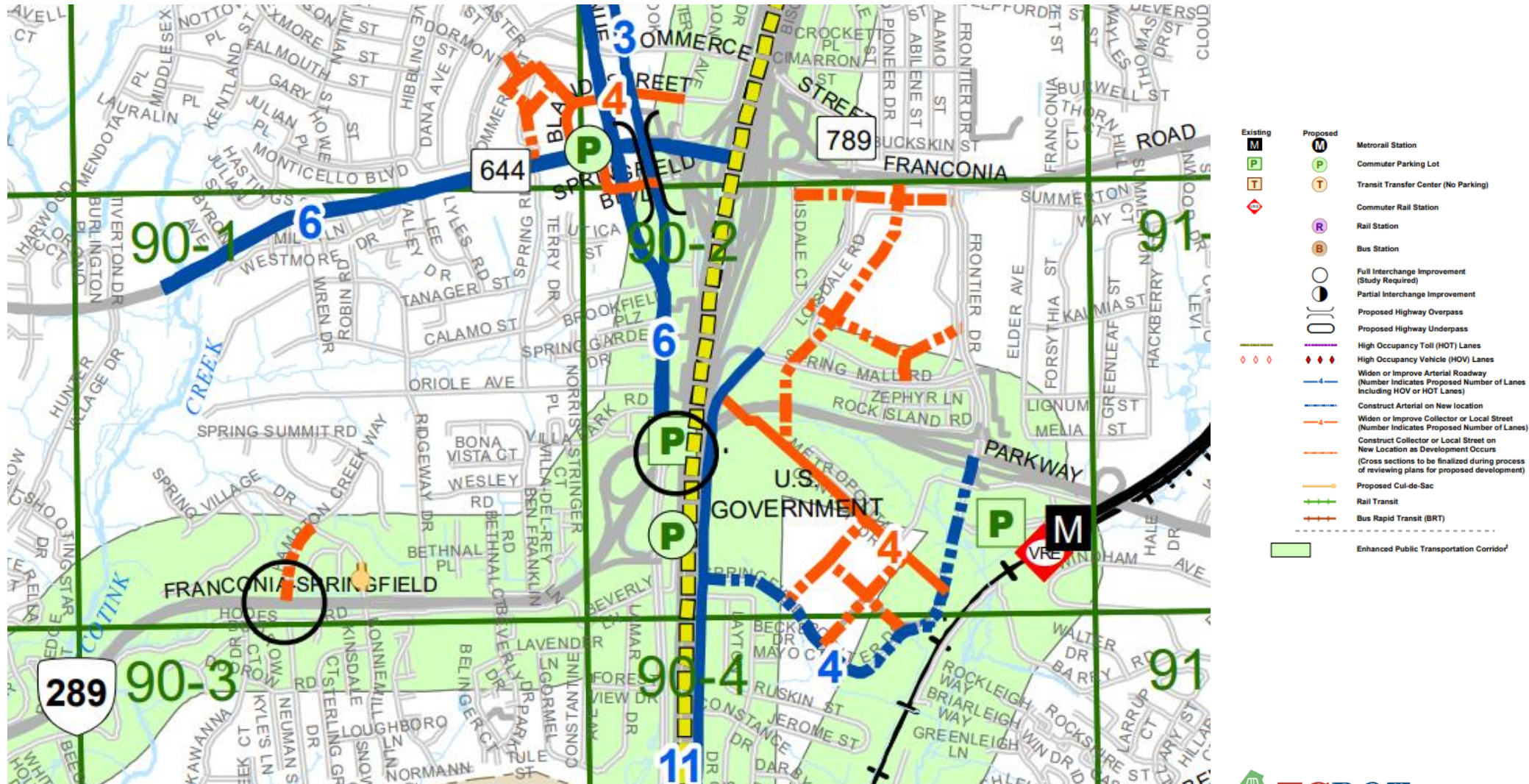
Capital Projects (point)

- Complete
- Construction
- Design-Build
- Design
- ROW
- Other

Capital Projects (line)

- Complete
- Construction
- Design-Build
- Design
- ROW
- Other

Planned – Transportation Plan Map

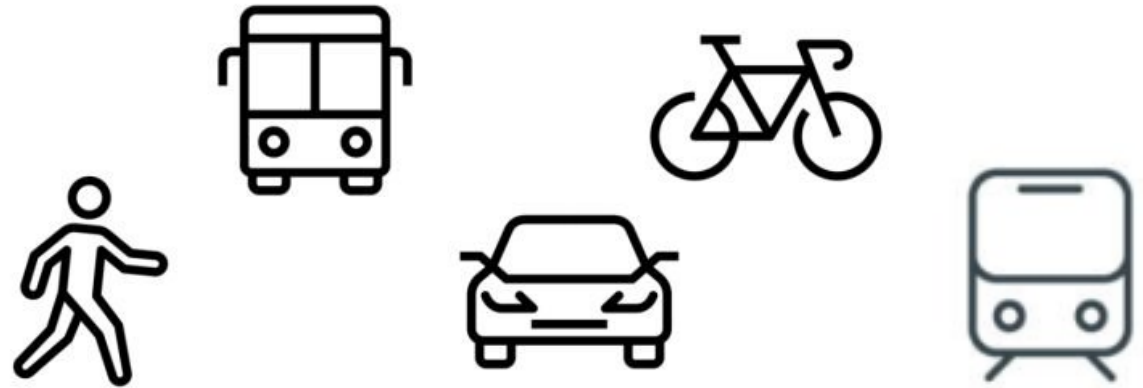


Multimodal Transportation Analysis Overview

Goals and Objectives

Consistent with the recently developed Comprehensive Transportation Analysis, including, but not limited to, the following.

1. Network Connectivity
2. Active Transportation Comfort
3. Transit Measures and Accessibility
4. Multimodal Safety Measures



Identify improvements that substantially enhance connectivity, safety, mode choice, and livability in the Franconia-Springfield Area in alignment with the Comprehensive Plan and in support of prior planning efforts for the area.

Existing Conditions Analysis

Estimated Timeline: May to December 2025

- Pedestrian Network Conditions
 - Pedestrian facilities, trail or sidewalk facilities, and Pedestrian Level of Comfort (PLOC)
- Bicycle Network Conditions
 - Bicycle facilities, trail or road facilities, and Bicycle Level of Traffic Stress (BLTS)
- Transit Service Network Conditions
 - Route locations, route names, stop locations, and coverage areas
- Arterial Road Network Conditions
 - AM and PM peak conditions with assigned volumes, traffic volumes, speed limits, number of lanes, and intersection Level of Service (LOS)
- High crash vehicle intersections; high-stress bike and pedestrian intersections
 - Crossings and corridors with locations, long blocks, and network barriers or gaps



Comprehensive Plan Baseline Future Conditions Analysis

Estimated Timeline: January to April 2026

- Pedestrian Network Conditions
 - Pedestrian facilities, comfort conditions for trail or sidewalk locations, and PLOC
- Bicycle Network Conditions
 - Bicycle facilities, traffic volume, speed limits, trail or road facilities, and BLTS
- Arterial Road Network Conditions
 - Assigned volumes, number of lanes, and intersection delay/ LOS by movement, approach, and overall, identifying problem intersections, links, and locations from a level of service or volume-to-capacity ratio
- Intersection Operations
 - Detailed MOE and LOS tables, bicycle, pedestrian and access management inventories

Future Transportation Concepts and Mitigation Scenario

Estimated Timeline: May to December 2026

- Alternative Land Use Sensitivity
 - Develop up to three (3) future land use alternative scenarios
- Alternative Land Use Scenario Transportation Network Development
 - Use travel demand modeling to test up to three (3) transportation network tests for the preferred future land use alternative scenario
- Alternative Land Use and Transportation Network Conditions
 - One (1) final run of the preferred land use scenario to include Syncro

Multimodal Transportation Analysis

Existing Conditions Analysis

Purpose

- Assess Existing Transportation Conditions
 - Assess future multimodal transportation network enhancements and movement connections to ensure effective traffic flow and accessibility
- Inform Future Transportation Studies
 - Support ongoing development and community planning to influence recommendations to modify the transportation network within the Comprehensive Plan

Comprehensive Transportation Analysis (CTA)

- Area Types and Modal Priorities
- Measures of Effectiveness

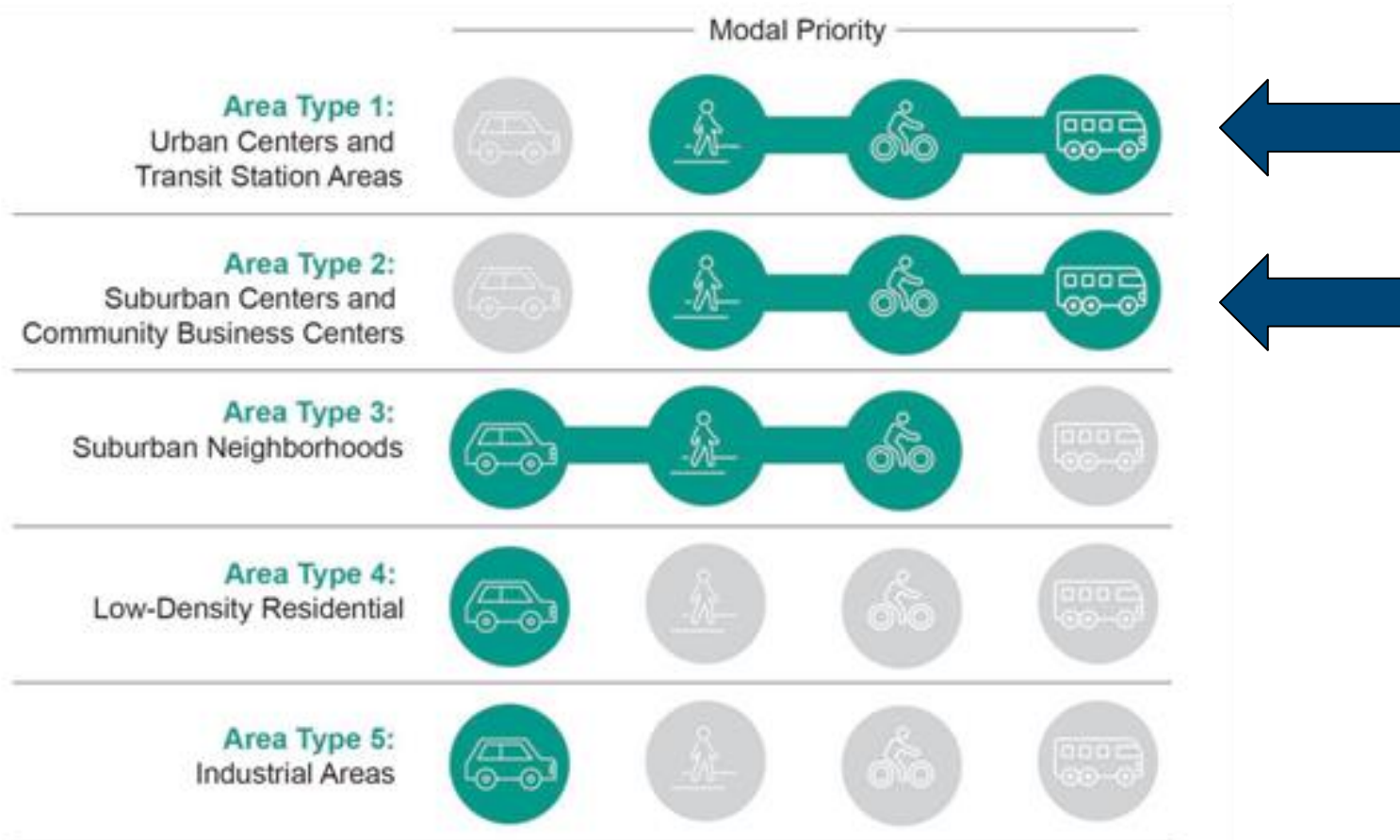


Figure 1. Area Type Structure and Modal Emphasis

Measures of Effectiveness (from the [Comprehensive Transportation Analysis \(CTA\)](#))

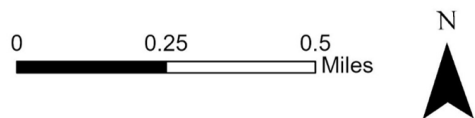
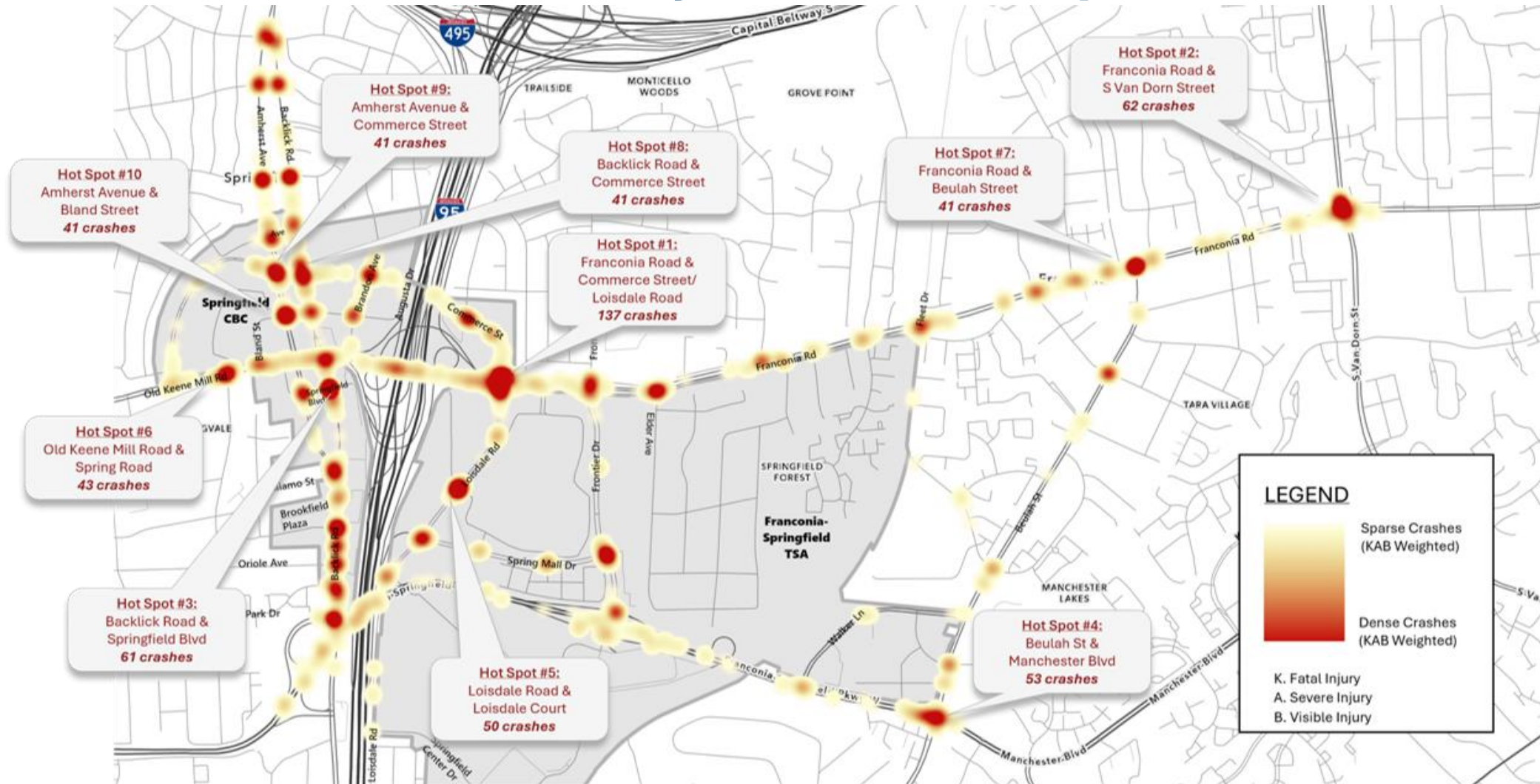
- Pedestrian Measures
 - Pedestrian Level of Comfort
 - Pedestrian Delay
- Bicycle Measures
 - Bicycle Level of Traffic Stress
- Transit Measures
 - Transit Access
 - Stop-Level Transit Ridership
- Vehicular Measures
 - Volume to Capacity (V/C) Ratio
 - Motorist Queueing
 - Vehicle Miles Traveled
 - Vehicle Delay
- Multimodal Safety Measures
 - Crashes

Comprehensive Plan (2017)

- Existing Arterial Network
 - Access via I-95 and I-495 with interchanges at Old Keene Mill Rd/Franconia Rd and Franconia-Springfield Pkwy
 - North-south routes: Amherst Ave, Backlick Rd, Loisdale Rd
 - East-west routes: Franconia Road/Old Keene Mill Rd and Franconia-Springfield Pkwy
- Current Connectivity Challenges
 - CBC and TSA are divided by major regional roadways, limiting movement and cohesion
 - Auto-oriented development, inconsistent land uses, and design variation restrict connectivity

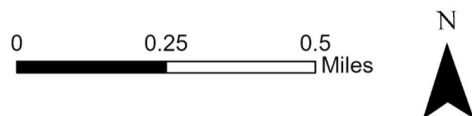
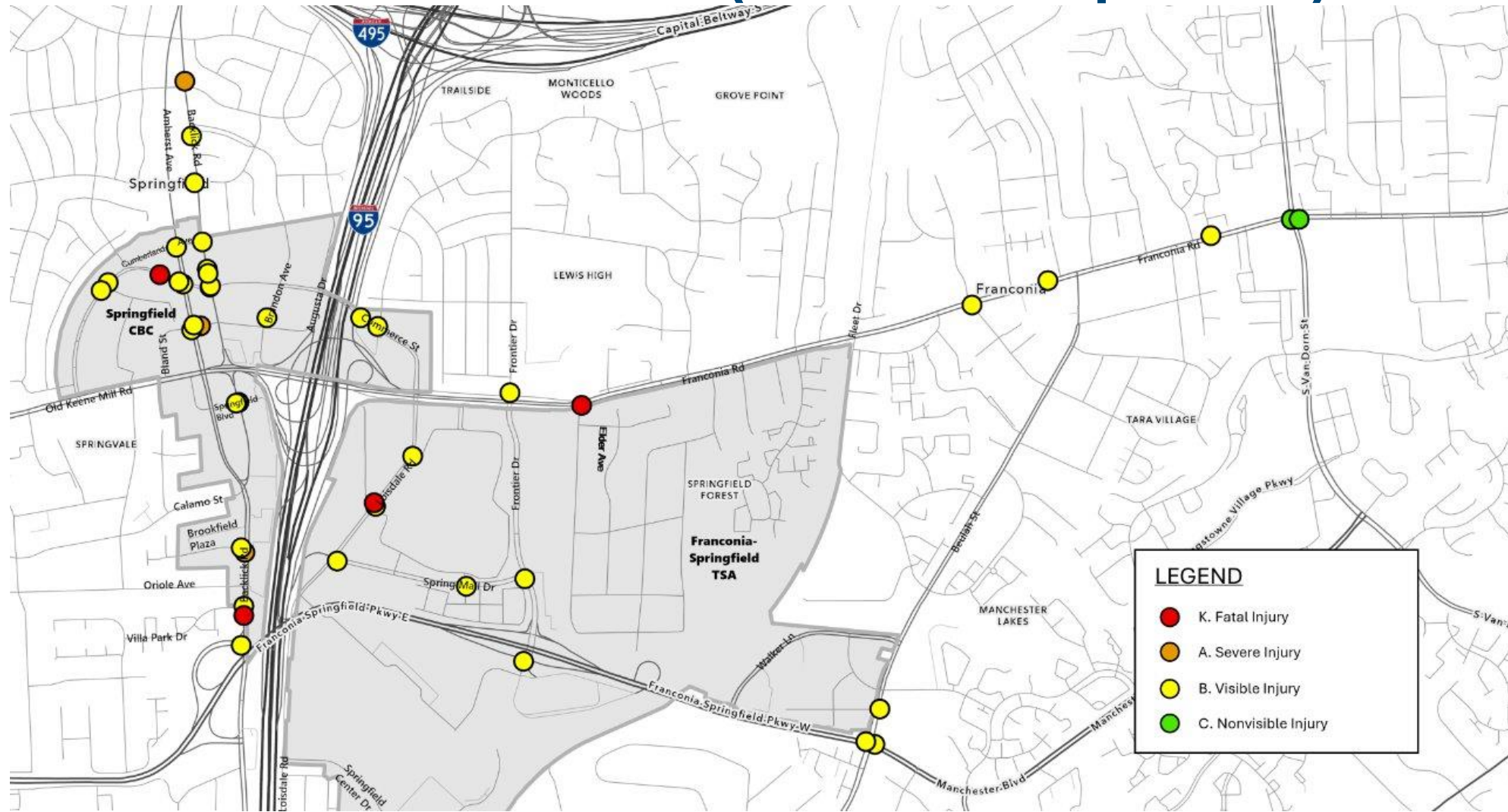
Historical KAB Crash Density (Jan 2018 – Apr 2025)

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Historical Pedestrian Crashes (Jan 2018 – Apr 2025)

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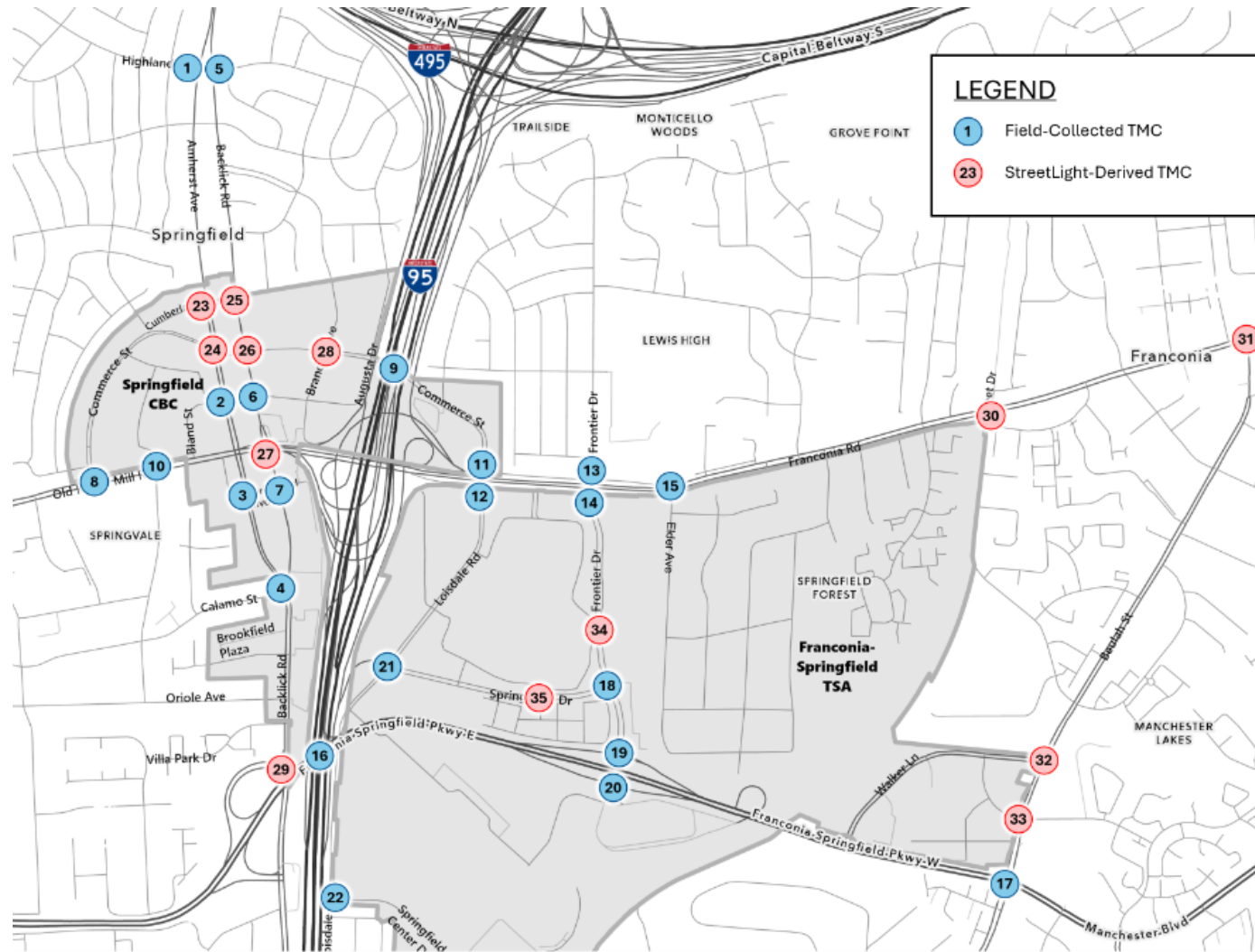


Data Collection

- Traffic Counts *completed December 2024 – January 2025*
 - Turning Movement, Peak AM/ PM
 - Vehicles, bicycles, pedestrians
- Field Survey *completed June 2025*
 - Pedestrian, bicycle, transit infrastructure
 - Access management features (e.g., driveways)
- Transit Ridership
 - By Stop *completed September 2024 – January 2025*
 - Average AM/ PM Peak by Headway *completed September 2025*
- Lane Geometry and Signal Timing (VDOT)
- Crash Data (7-year) (VDOT)

Data Collection Locations

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1. Amherst Avenue SB and Highland Street (signal)
2. Amherst Avenue and Bland Street (signal)
3. Amherst Avenue and Springfield Boulevard (signal)
4. Amherst Avenue and Backlick Road/Calamo Street (signal)
5. Backlick Road NB and Highland Street (signal)
6. Backlick Road and Bland Street (signal)
7. Backlick Road and Springfield Boulevard (two-way stop)
8. Commerce Street and Old Keene Mill Road (signal)
9. Commerce Street and I-95 (to I-495 NB) (signal)
10. Old Keene Mill Road & Spring Road (signal)
11. Franconia Road WB and Commerce Street (signal)
12. Franconia Road EB and Loisdale Road (signal)
13. Franconia Road WB and Frontier Drive (signal)
14. Franconia Road EB and Frontier Drive (signal)
15. Franconia Road and Elder Avenue (signal)
16. Franconia-Springfield Pkwy and I-95 Express Lanes (signal)
17. Franconia-Springfield Pkwy and Beulah St/Manchester Blvd (signal)
18. Frontier Drive and Spring Mall Road (signal)
19. Frontier Drive and Franconia-Springfield Pkwy WB Ramps (signal)
20. Frontier Drive and Franconia-Springfield Pkwy EB Ramps (signal)
21. Loisdale Road and Spring Mall Road/I-95 Off-Ramp (signal)
22. Loisdale Road and Springfield Center Drive (signal)
23. Amherst Avenue and Cumberland Avenue (signal)
24. Amherst Avenue and Commerce Street (signal)
25. Backlick Road and Cumberland Avenue (signal)
26. Backlick Road and Commerce Street (signal)
27. Backlick Road and Old Keene Mill Road EB (signal)
28. Commerce Street and Brandon Avenue (signal)
29. Backlick Road and Franconia-Springfield Pkwy (signal)
30. Franconia Road and Fleet Drive (signal)
31. Franconia Road and Beulah Street (signal)
32. Beulah Street and Walker Lane (signal)
33. Beulah Street and Metro Park Drive/Charles Arlington Drive (signal)
34. Frontier Drive and Best Buy/Mall Entrance (signal)
35. Spring Mall Road and Junction Boulevard (signal)

0 0.25 0.5 Miles



Vehicle Level of Service & Volume to Capacity Ratio

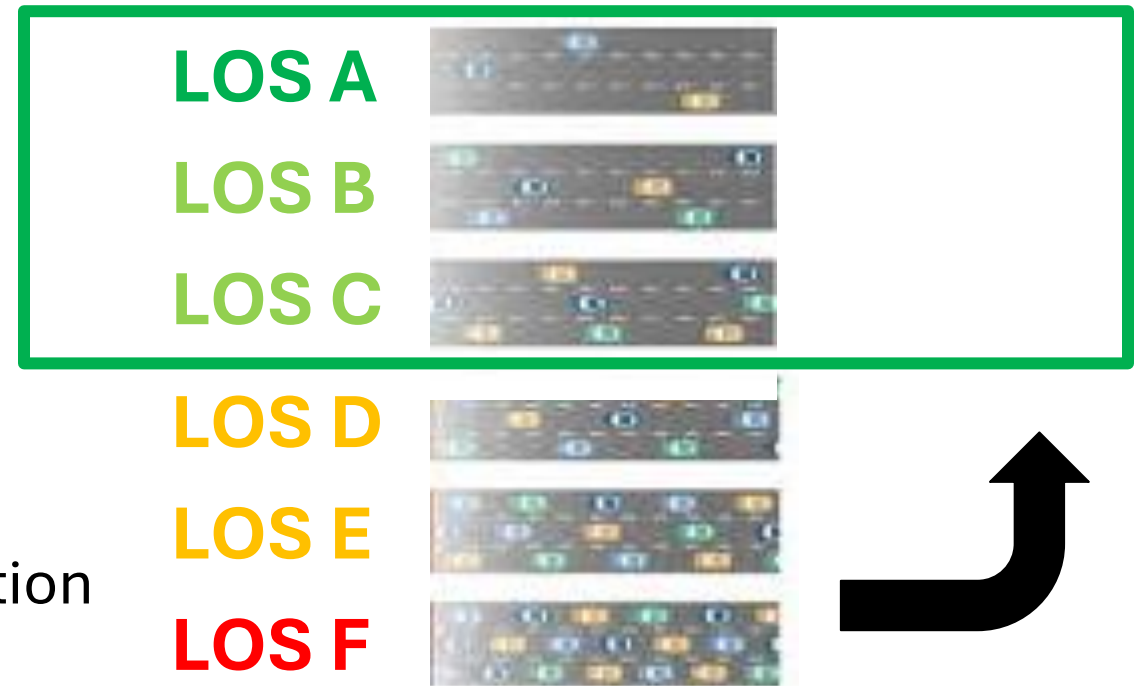
Level of Service (LOS)

Measures a vehicles perception of comfort based on surrounding conditions

- Quality of traffic flow on roads, intersections, and other facilities
- Characteristics: Speed, travel time, delay, maneuverability, and congestion

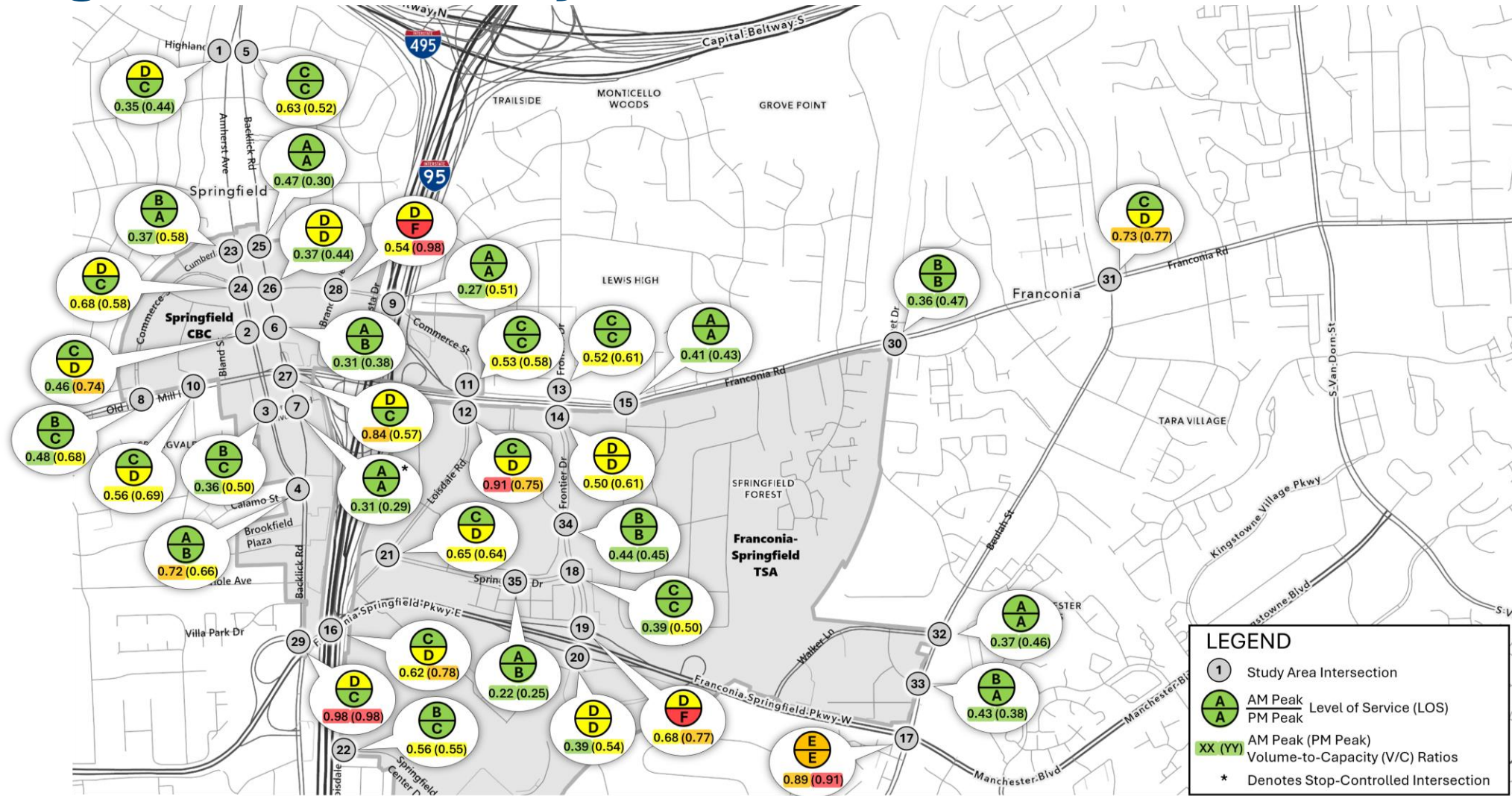
Volume to Capacity (V/C) Ratio

- Measures how existing or future motorist demand compares to roadway capacity
- Goal: Identifies opportunities for cross section reallocation, or targeted capacity changes



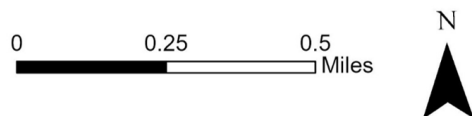
Existing Conditions Analysis Results

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LEGEND

- ① Study Area Intersection
- A AM Peak Level of Service (LOS)
- A PM Peak
- XX (YY) AM Peak (PM Peak) Volume-to-Capacity (V/C) Ratios
- * Denotes Stop-Controlled Intersection



Existing Pedestrian Facilities

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0 0.25 0.5 Miles

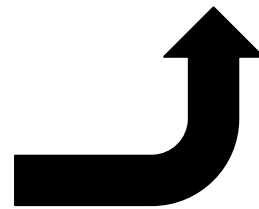


Pedestrian Level of Comfort

Measures a pedestrian's perception of comfort based on surrounding conditions

- Scores can be assigned to pathways, sidewalks, and crossings
- Characteristics: Pathway width, posted speed limit, buffer width, presence of on-street parking, crosswalk type, and presence of street trees
- Pedestrian Level of Comfort (PLOC) ratings, as follows

- PLOC 1 (Very Comfortable)
- PLOC 2 (Comfortable)
- PLOC 3 (Somewhat Comfortable)
- PLOC 4 (Uncomfortable)
- PLOC 5 (No Pathway/ Crossing)

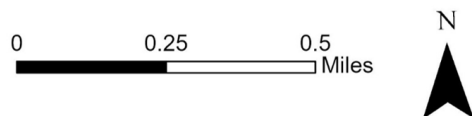
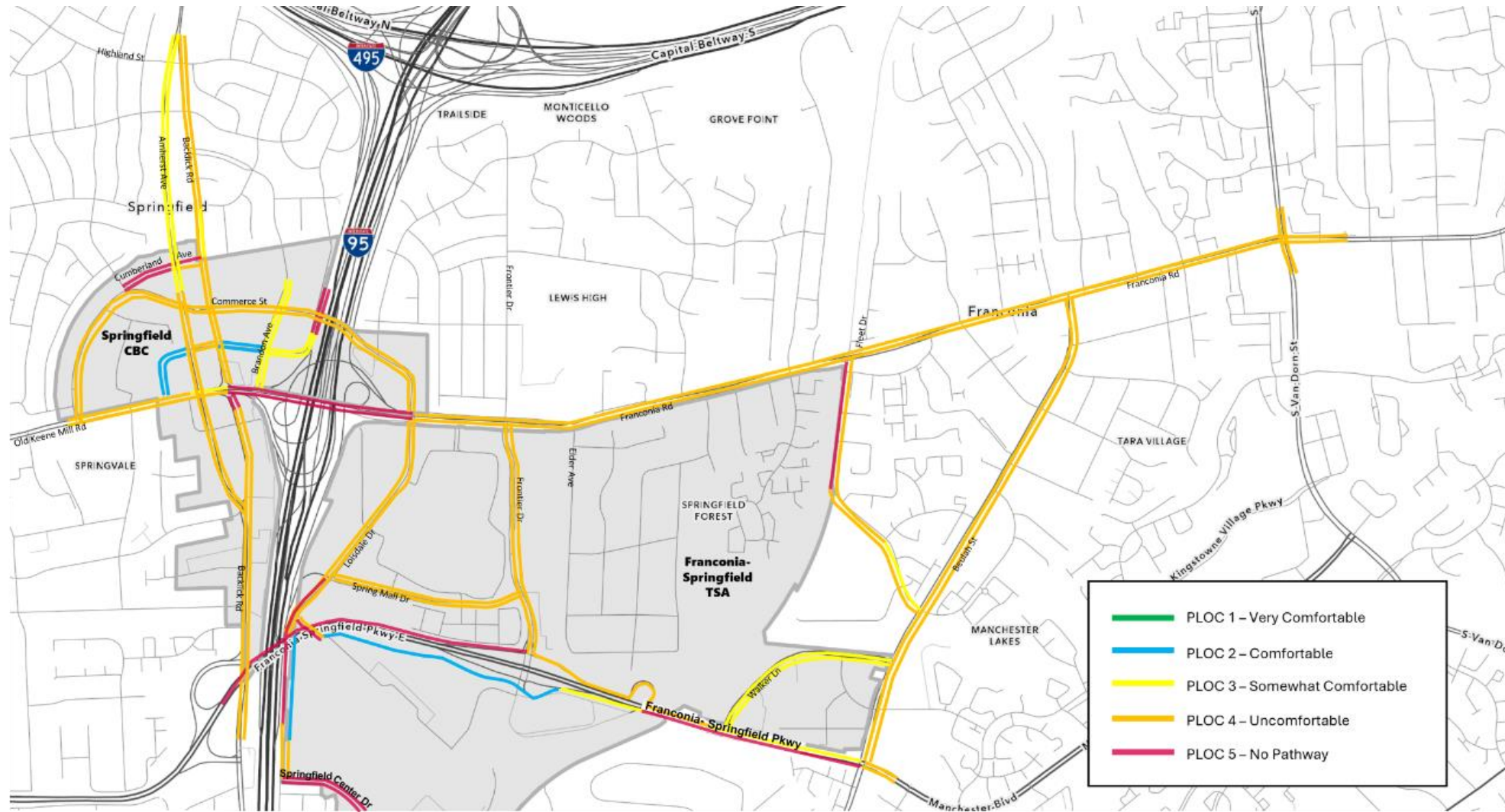


Level of Comfort
1 = Very Comfortable
2 = Comfortable
3 = Somewhat Comfortable
4 = Uncomfortable
5 = No Pathway

- Goal: Improve pedestrian safety (e.g., implementing lower speed limits, reduced crossing distance, high-visibility crossings, pedestrian refuges)

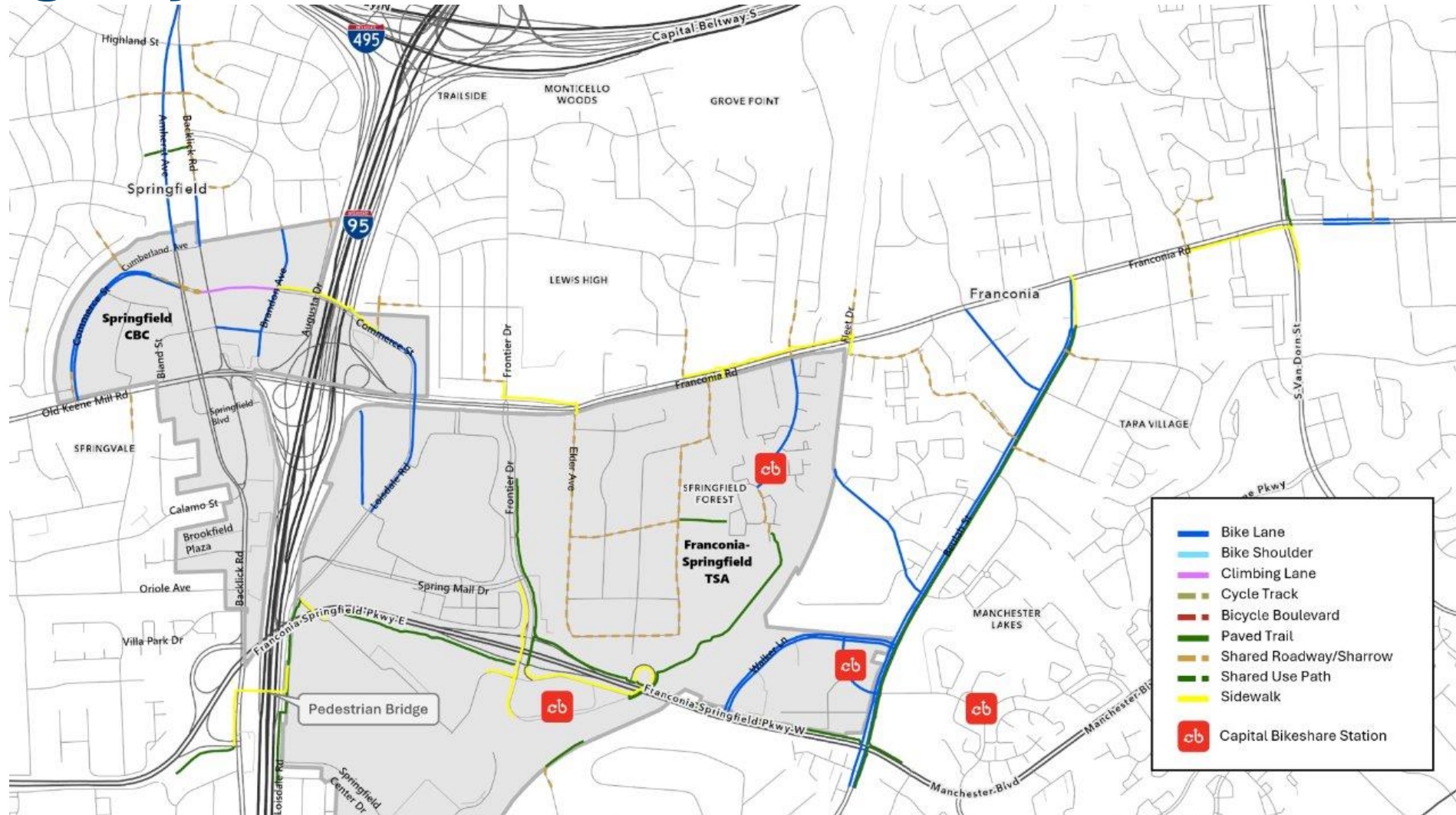
Existing Pedestrian Level of Comfort (PLOC)

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Existing Bicycle Facilities

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0 0.25 0.5 Miles



Bicycle Level of Traffic Stress

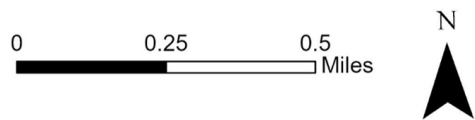
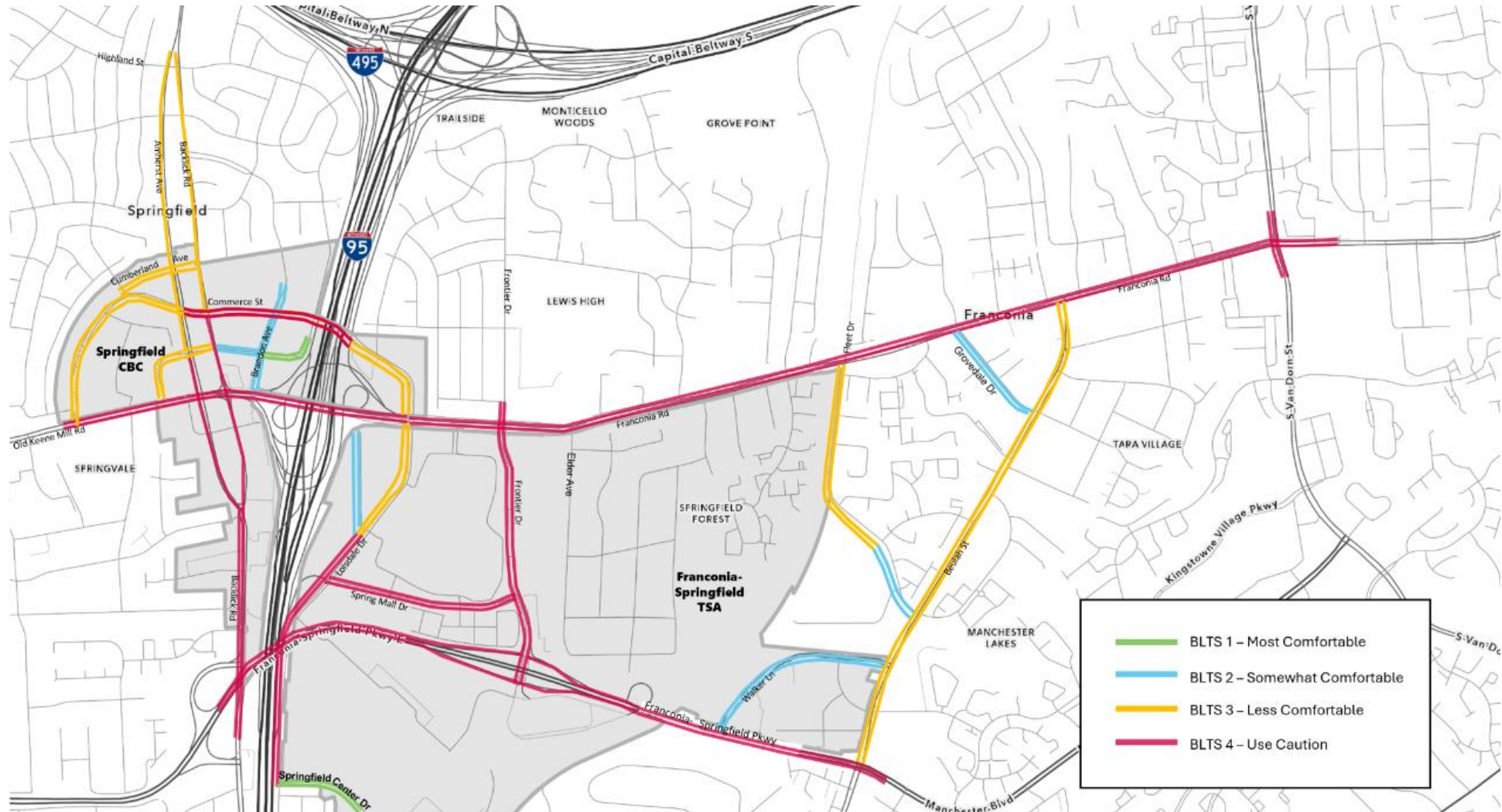
Measures bicycle users comfort based on traffic and roadway conditions

- Scores can be assigned to streets and off-road trails
- Characteristics: Type of bicycle facility (e.g., physically separated bicycle facilities, bicycle lanes, mixed traffic), street width (through lanes per direction), speed limit, and presence and width of on-street parking
- Bicycle Level of Traffic Stress (BLTS), as follows
 - BLTS 1 (Comfortable)
 - BLTS 2
 - BLTS 3
 - BLTS 4
- Goal: Improve bicyclist safety (e.g., implementing lower speed limits and/or separated bicycle facilities)

Level of Comfort
1 = Very Comfortable
2 = Comfortable
3 = Somewhat Comfortable
4 = Uncomfortable

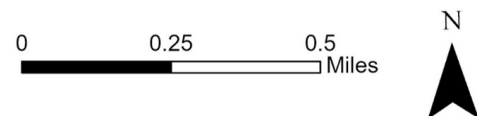
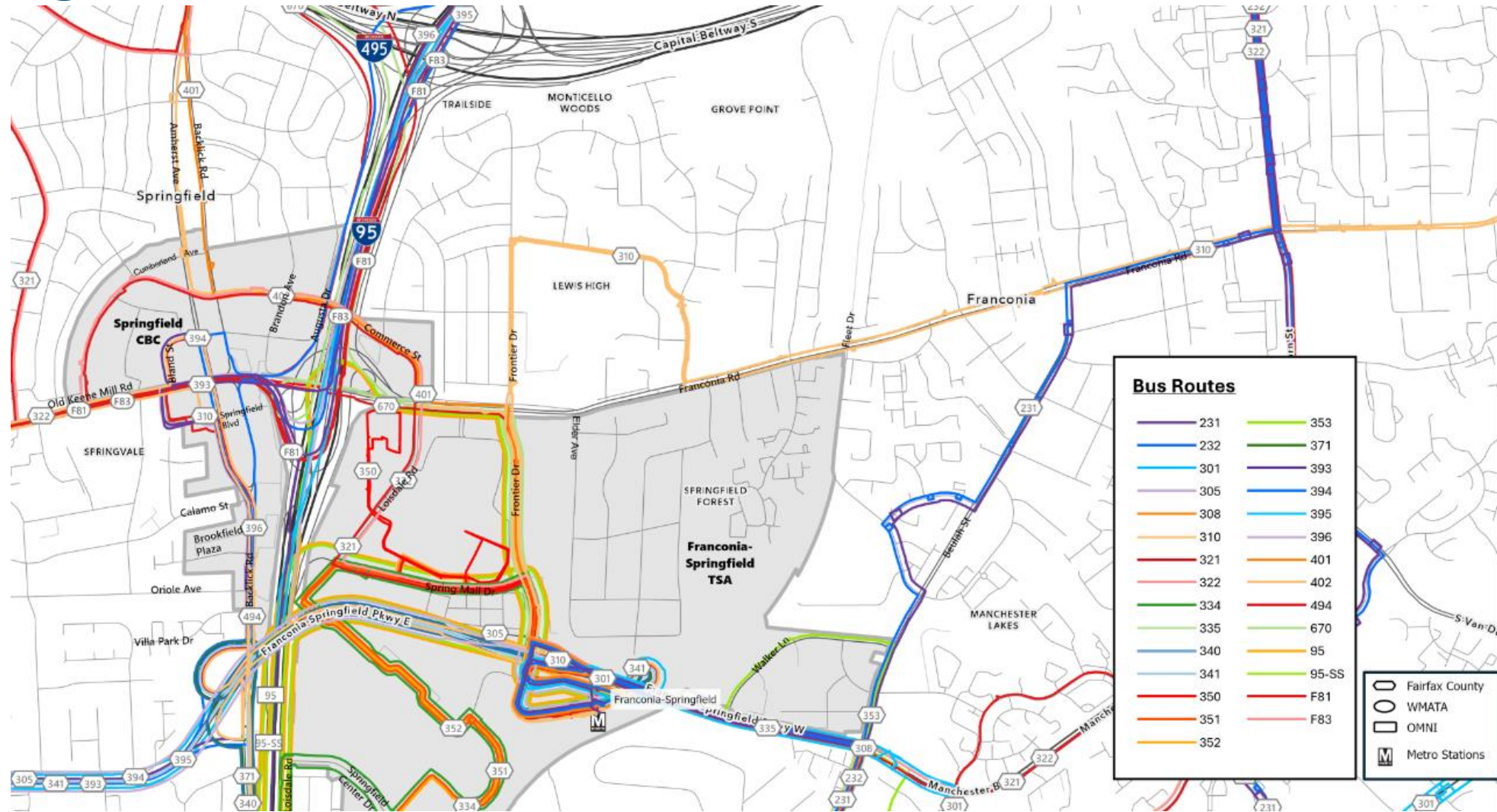
Existing Bicycle Level of Traffic Stress (BLTS)

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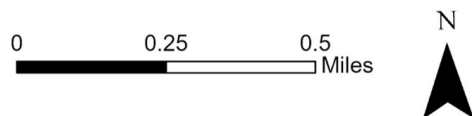
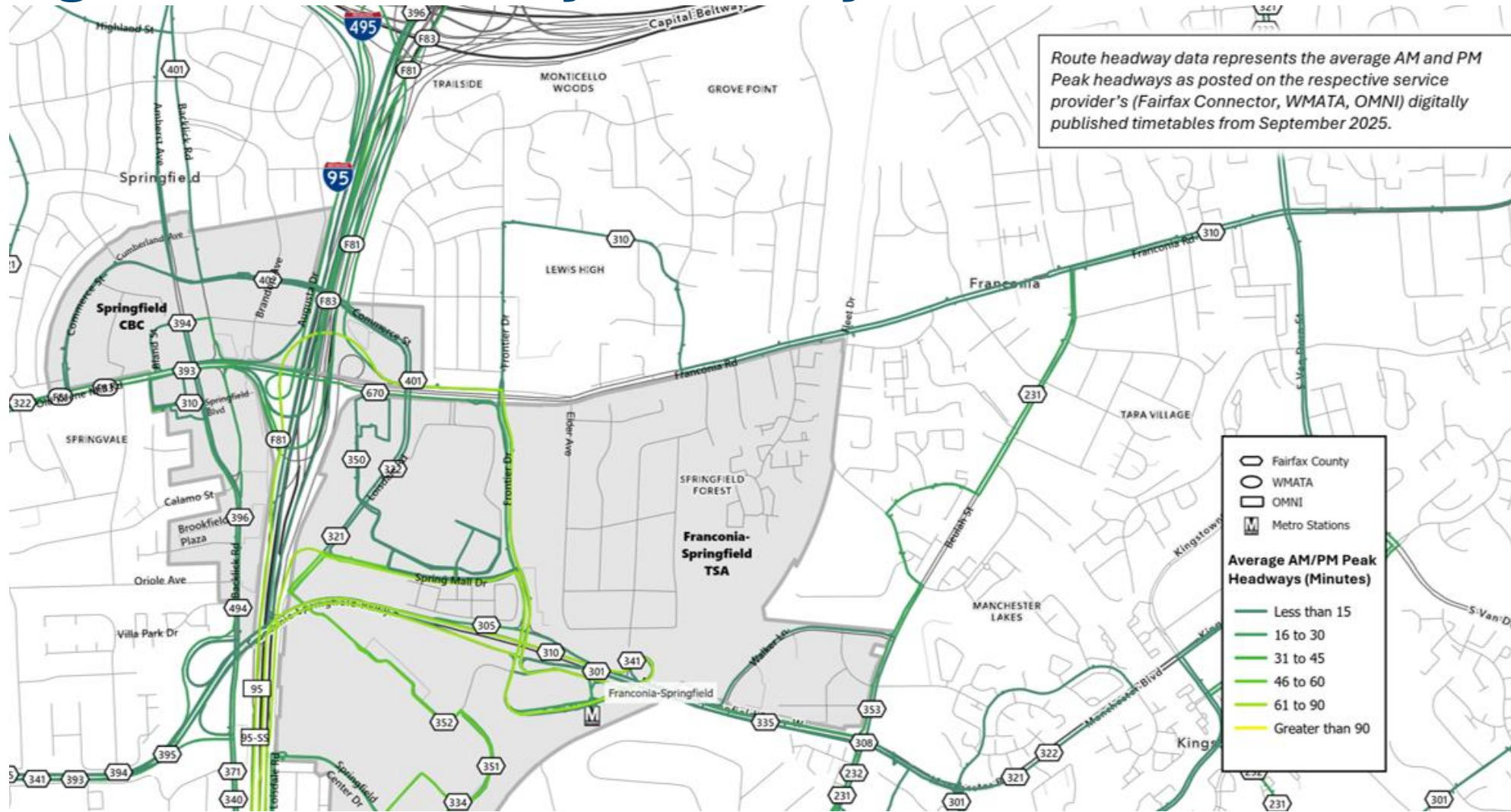
Existing Transit Routes

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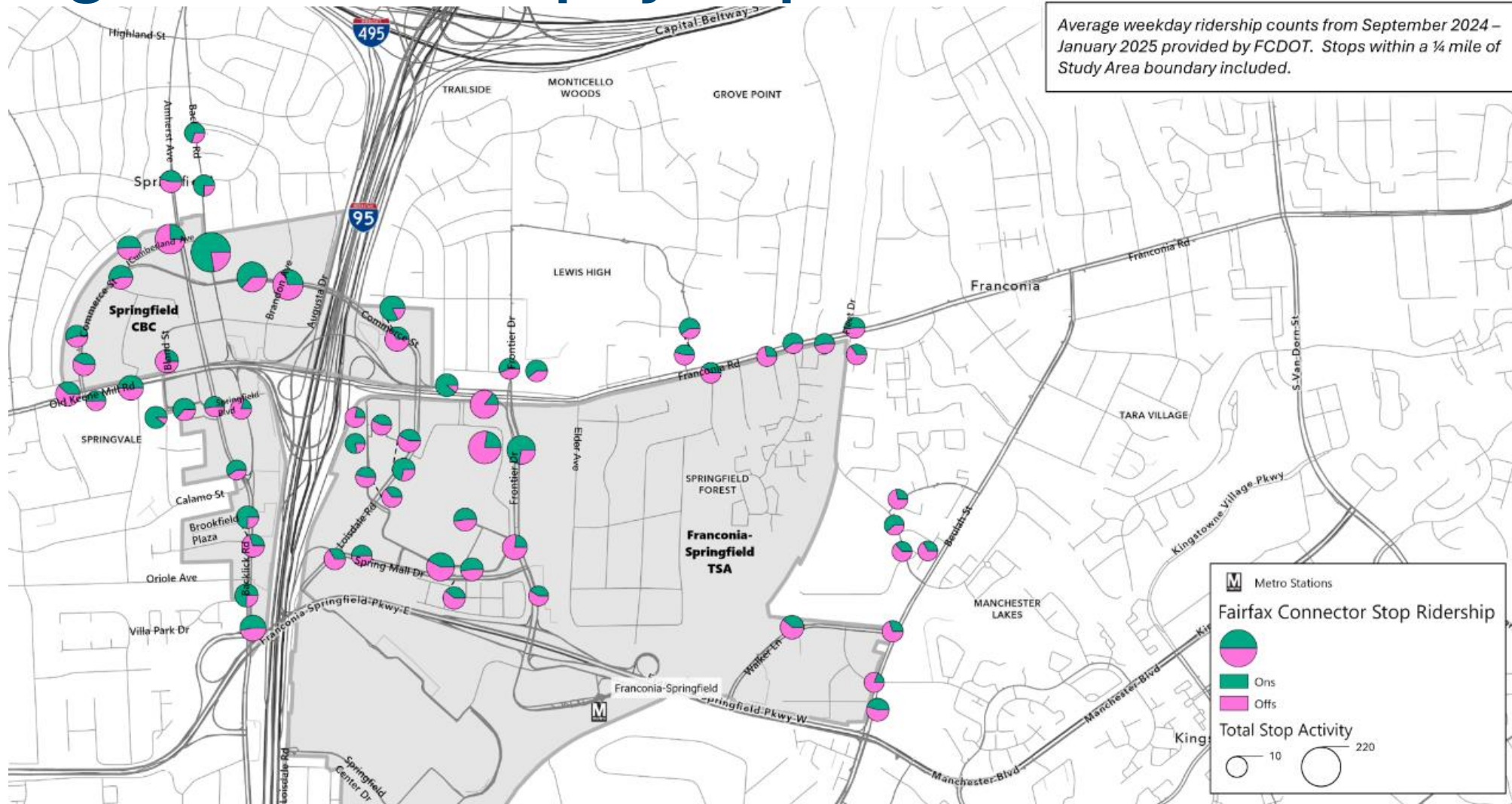
Existing Transit Routes by Headway

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Existing Transit Ridership by Stop

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0 0.25 0.5 Miles



Next Steps

Next Steps *con't*

- Field Visit & Data Collection *completed*
 - December 2024 – January 2025: Intersection and tube counts
 - June 2025: Field Visit(s)
- Development of Travel Demand Model *ongoing*
 - Forecasting 2050 traffic in the Franconia-Springfield study area
- Multimodal Assessment of Existing Conditions *ongoing*
 - Address the needs of all users including pedestrian, bike, transit, and vehicle
- Multimodal Assessment of Comprehensive Plan Baseline Conditions *not started*
 - Anticipated start in January 2026

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THANK YOU FOR YOUR TIME

Questions