State
Smart Transportation
Initiative

Practical Solutions to Move America Forward

Improving access to destinations with “big data” analysis: Findings

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Project focus

Understand trip-making.

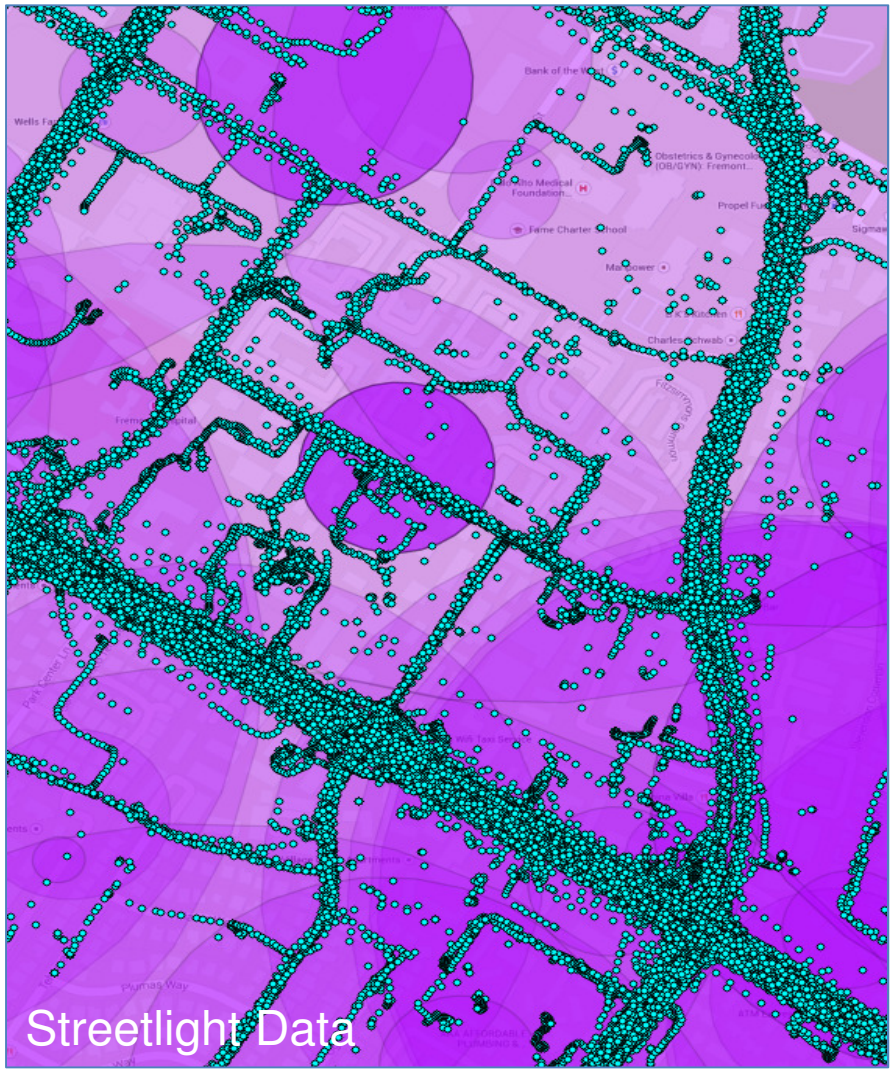
Provide access to destinations through means other than major highway and transit investments.

Data

- Anonymous GPS data
- Precise information not in travel demand models or traffic counts

Summary

- More than 3 million trips per day in NOVA
  - 51% < 5 miles
  - 24% < 2 miles
  - 8% < 1 mile
- 44% of short trips are during peak periods



Methods

1. Scan GPS data for **short trips**, **circuitous trips** and **common origin-destination pairs.**
2. Identify case studies showing unique issues and opportunities.
3. Evaluate potential costs and benefits of recommended actions (using GPS data).

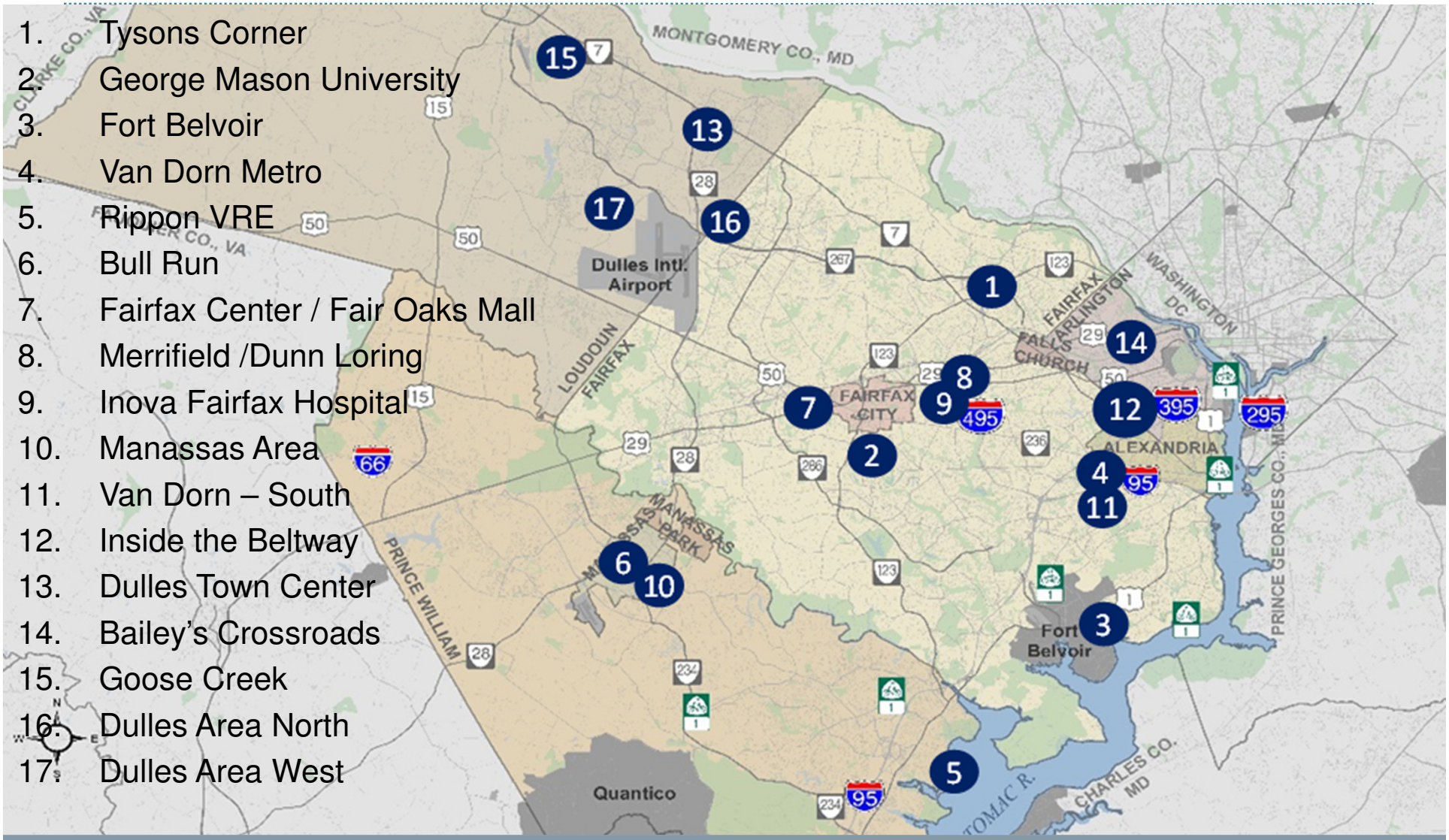
- ❖ We engaged with local stakeholders throughout the process.
- ❖ The project evolved to meet the needs of stakeholders (providing access to data).

Key findings

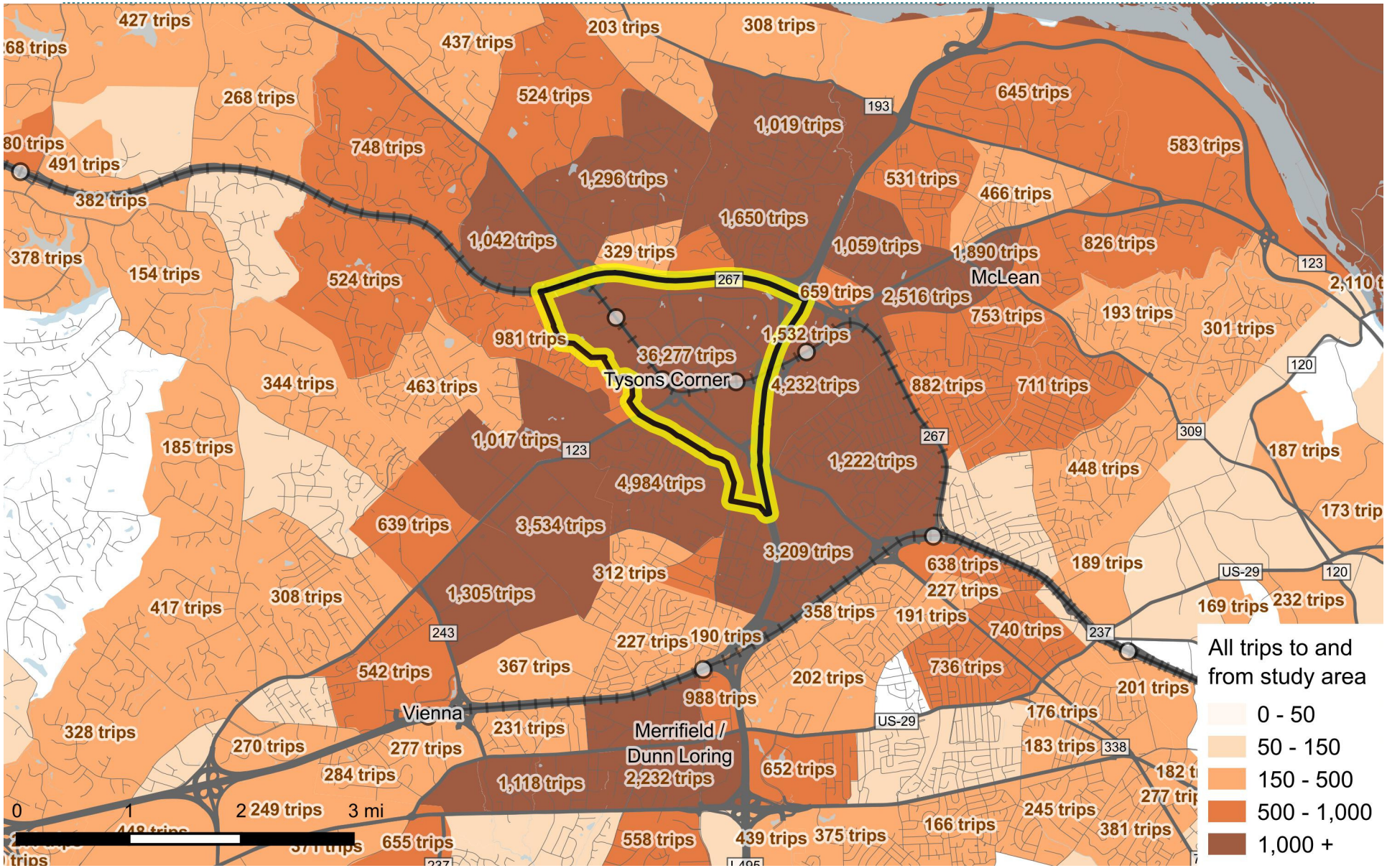
- Data visualization and trip quantification are immensely useful.
- Type of opportunities:
  - TDM and parking management
  - Bicycle and pedestrian improvements
  - Transit enhancements
  - Street and parcel connections
  - Land use and development
- Important to consider multimodal connections **to sites** and multimodal options **at sites.**

17 case studies

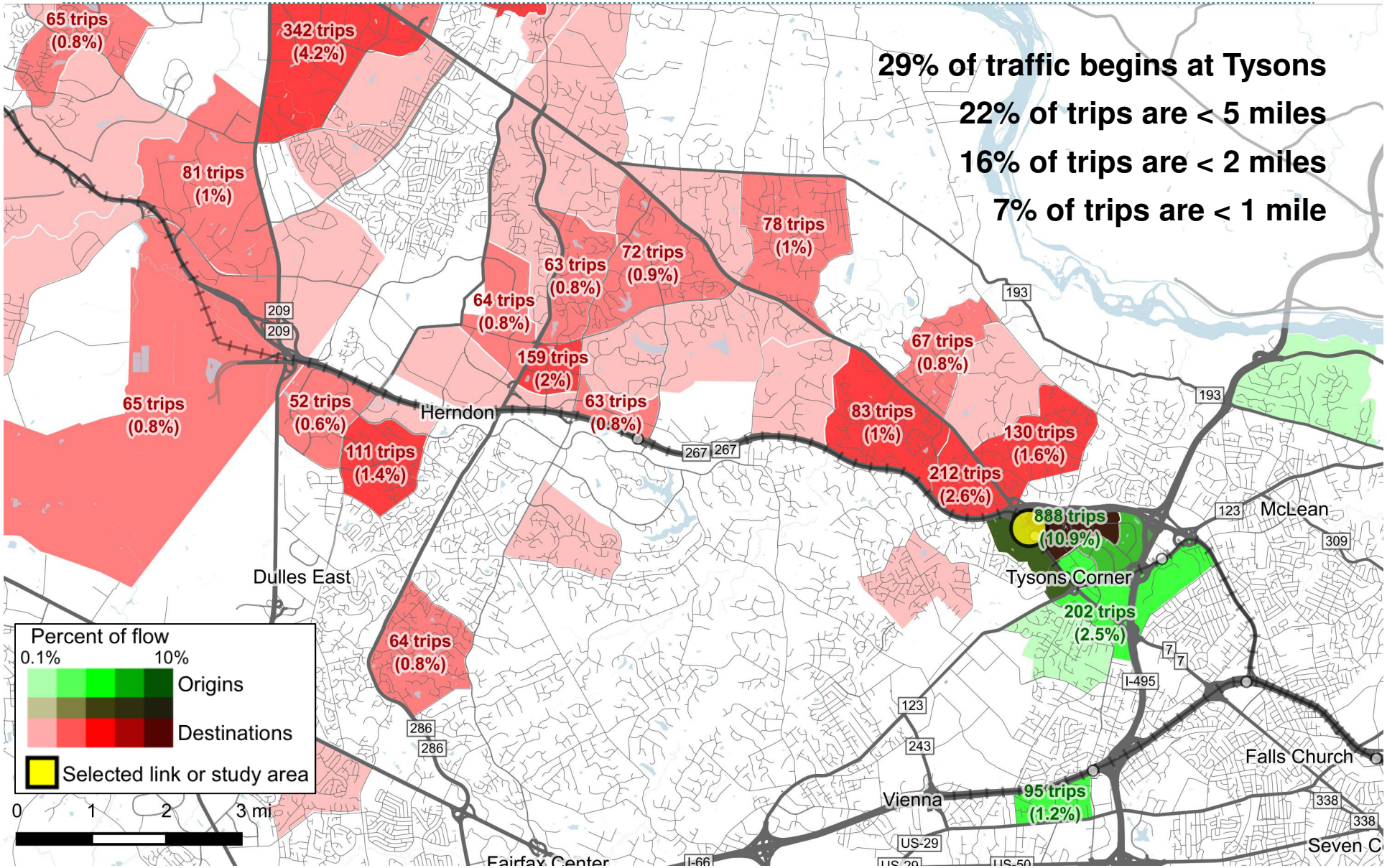
1. Tysons Corner
2. George Mason University
3. Fort Belvoir
4. Van Dorn Metro
5. Rippon VRE
6. Bull Run
7. Fairfax Center / Fair Oaks Mall
8. Merrifield /Dunn Loring
9. Inova Fairfax Hospital
10. Manassas Area
11. Van Dorn – South
12. Inside the Beltway
13. Dulles Town Center
14. Bailey's Crossroads
15. Goose Creek
16. Dulles Area North
17. Dulles Area West



Example case study: Tysons Corner



Traffic on Rt. 7 westbound (PM) beginning at Tysons



Tysons Corner

Opportunities

- Bicycle and pedestrian improvements
- Parking Management
- Street and parcel connections
- Other local transportation options

Tysons Corner

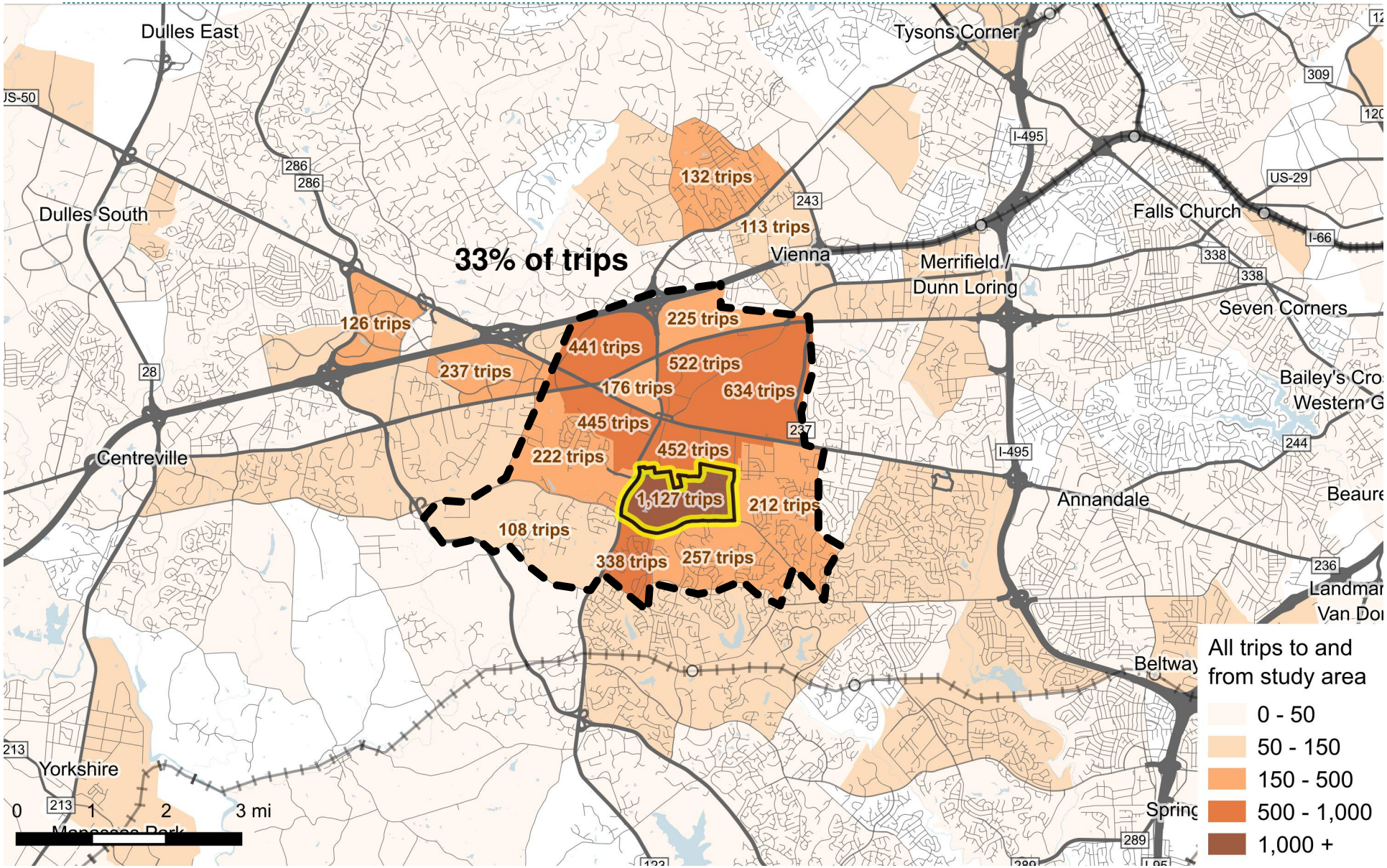
Benefits

- Enable walkable, transit-oriented development
- Remove 2.0 - 3.8 million vehicle trips per year (up to 1 million hours)
- Save $11.5 million in traveler costs per year
- Eliminate 8,400 tons of carbon emissions per year

Costs

- $12-14 Million capital ($3M transit, $9-10M Road/Bike/Ped)
- $1.8M Annual Operating for Transit/TDM
- Includes:
  - Circulator shuttle
  - Street improvements and connections
  - Bike share
  - TDM and parking management

George Mason University



George Mason University

Opportunities

- Off campus connections by foot, biking and transit
- Parking management
- Walkable development in surrounding area

George Mason University

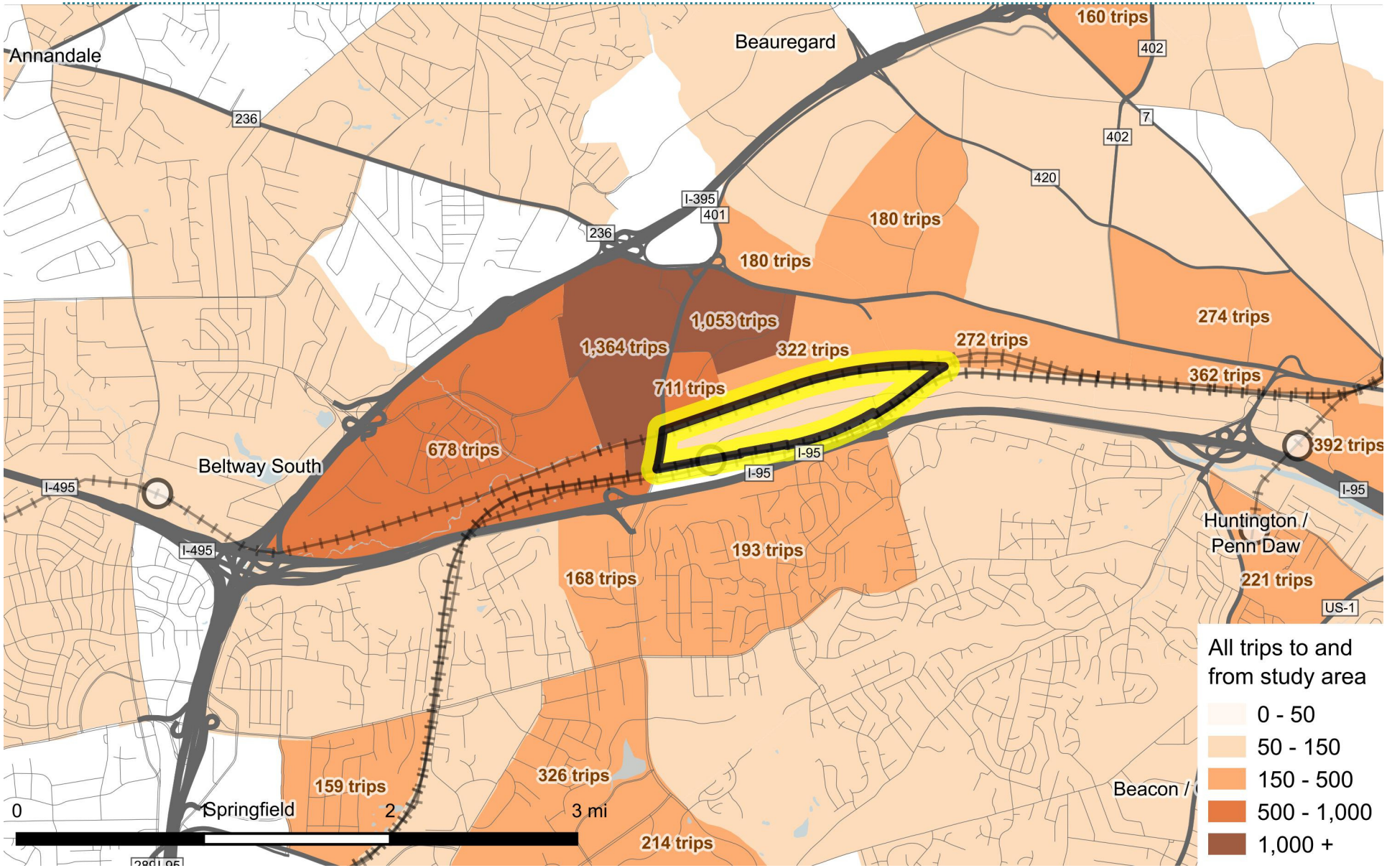
Benefits

- Improve multimodal access to campus
- Remove 250K to 460K vehicle trips per year (up to 82,000 hours)
- Save $500,000 in traveler costs per year
- Eliminate 390 tons of carbon emissions per year

Costs

- $6 Million capital ($1M transit, $5M Road/Bike/Ped)
- $0.8M Annual Operating for Transit/TDM
- Includes:
  - Bike and pedestrian improvements
  - Local shuttle/transit service
  - TDM and parking management

Van Dorn Street Metro



Van Dorn Street Metro

Van Dorn Street Metro

Opportunities

- Address accessibility needs without adding local traffic
- Limited-use crossings (bikes, pedestrians, etc.)

Van Dorn Street Metro

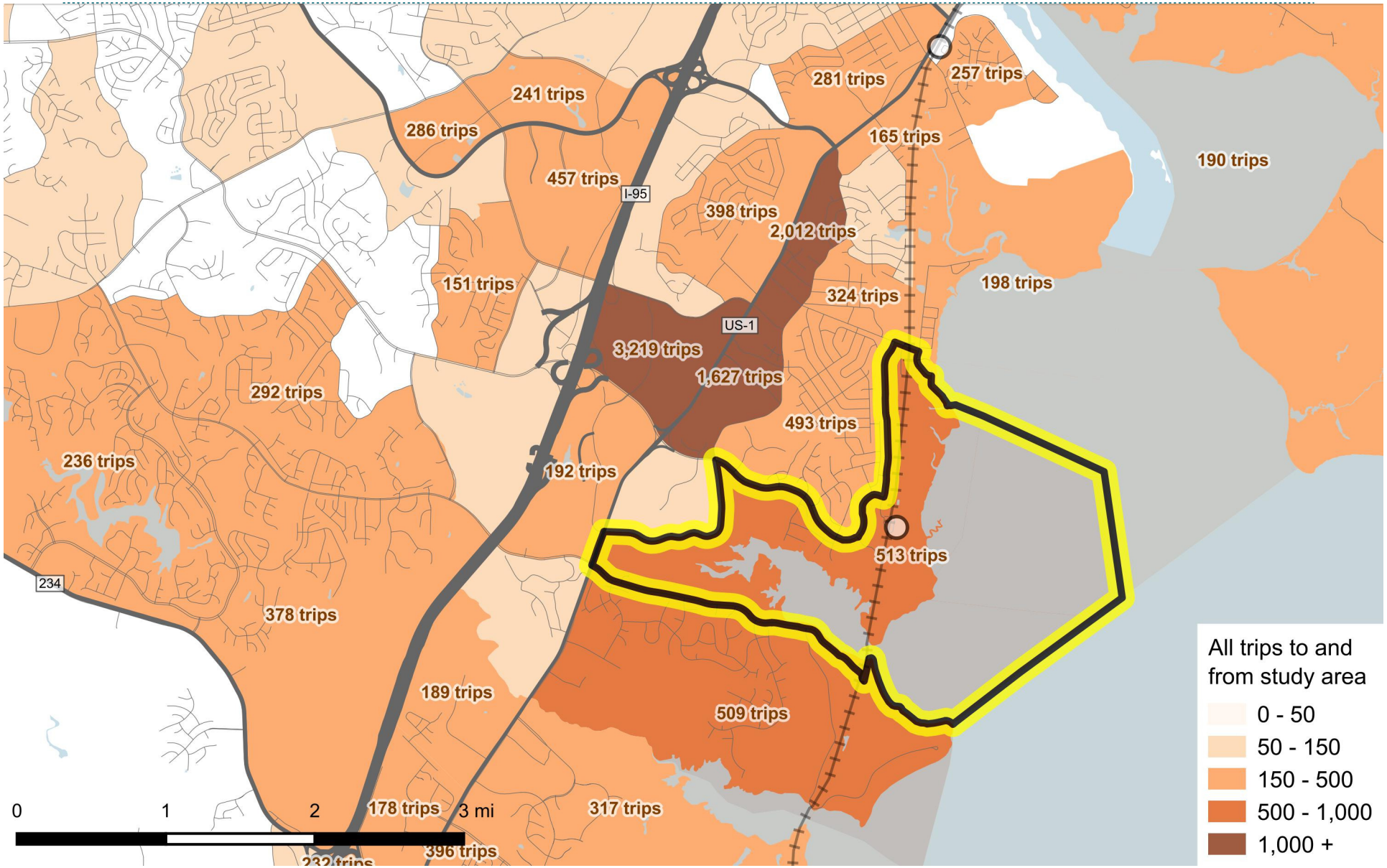
Benefits

- Improve multimodal access to station
- Remove 100K to152K vehicle trips per year (up to 24,500 hours)
- Save $155,000 in traveler costs per year
- Eliminate 113 tons of carbon emissions per year

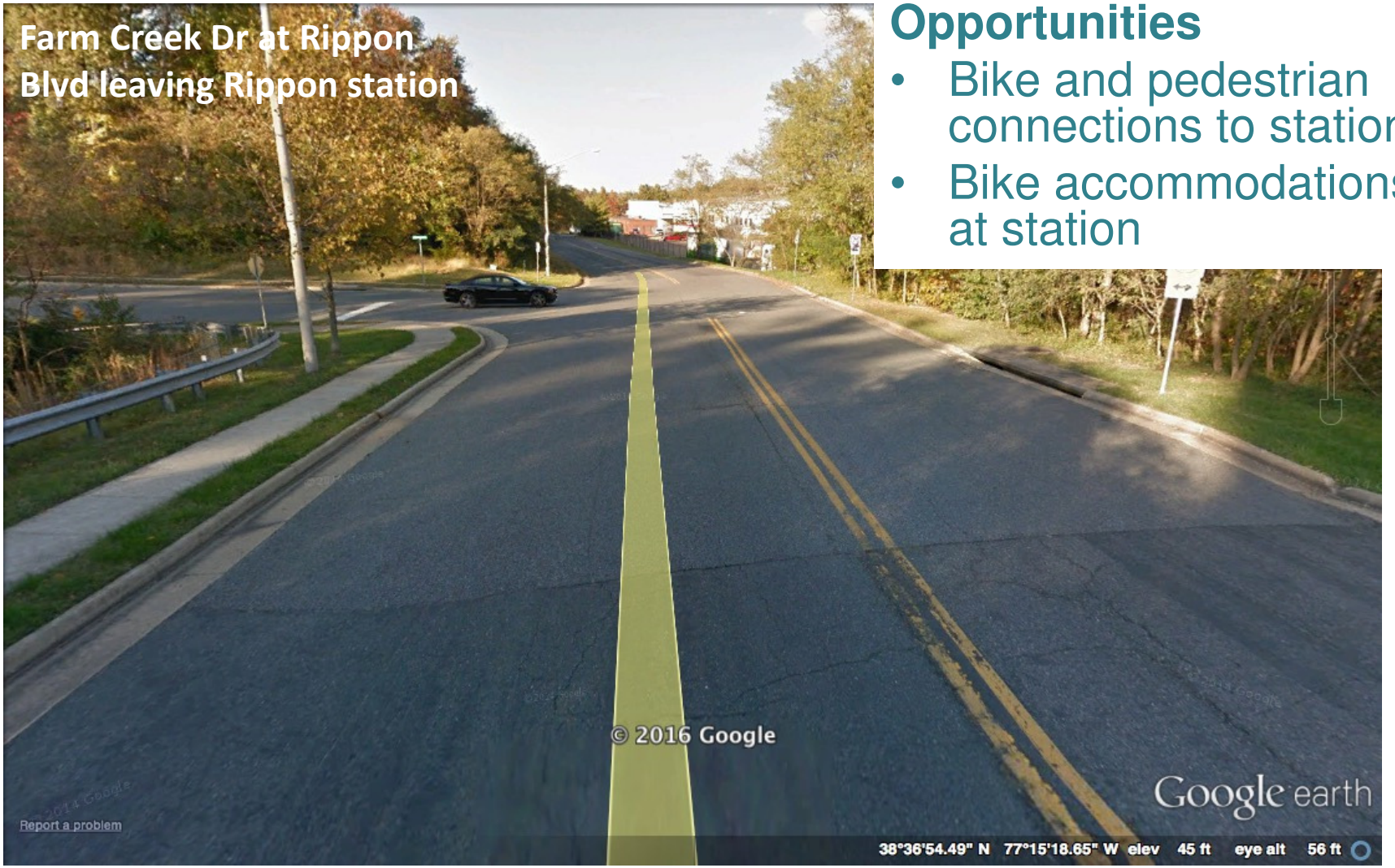
Costs

- $28-38 Million capital (bridge + connections)
- $30K Annual Operating for TDM
- Includes:
  - New infrastructure
  - Modest increase in TDM

Rippon VRE Station



Rippon VRE Station



Opportunities

- Bike and pedestrian connections to station
- Bike accommodations at station

Rippon VRE Station

Opportunities

- Bike and pedestrian connections to station
- Bike accommodations at station

Rippon VRE Station

Benefits

- Improve station access and spur transit-oriented development
- Remove 155,000 vehicle trips per year (36,000 hours)
- Save $235,000 in traveler costs per year
- Eliminate 172 tons of carbon emissions per year

Costs

- $3 Million capital (Road/Bike/Ped)
- $7K Annual Operating for TDM
- Includes:
  - Bicycle and pedestrian improvements
  - Street connections
  - Modest increase in TDM

Additional case studies

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