



# Dulles Corridor Special Study Transportation Analysis of Current Comprehensive Plan

Presented to:

Route 28 Station – South Study Group

Presented by:

Fairfax County Department of Transportation

October 18, 2010



## Presentation Outline

- Purpose of Analysis
- Assumptions in Model
- Travel Trends and Transit Usage
- Road Network Performance
- General Mitigation Strategies
- Next Steps



## Purpose of Analysis

- To Evaluate Forecasted Conditions for 2030
  - Travel Trends
  - Transit Usage
  - Road Performance



## What is the Model?

- Regional Travel Demand Forecasting Model
  - Used by MWCOG and all other MPO's in US
- Land Use is Divided into Zones (TAZ's)
- Supply of Transportation is represented by the highway and transit network
- Demand for Travel Developed Using a Series of Mathematical Models
- Provides information such as vehicle miles traveled (VMT) and mode choice/use

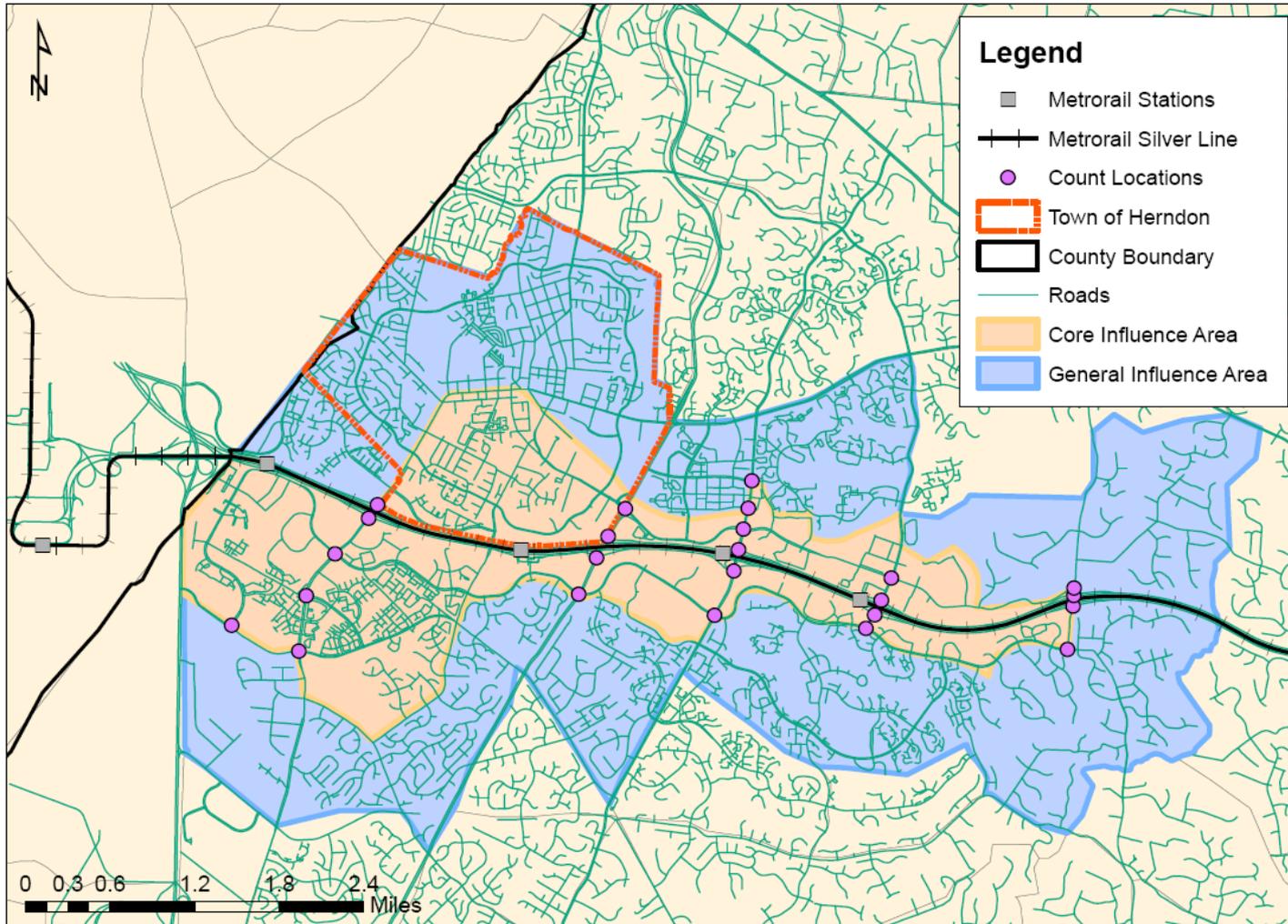


## Model Assumptions

- Study Area (Core Area and Influence Area)
- Land Use – MWCOG Round 7.2
- Road network improvements for 2030
- Transit – Stations along Phase II are open and bus service is reoriented to serve rail stations and local area

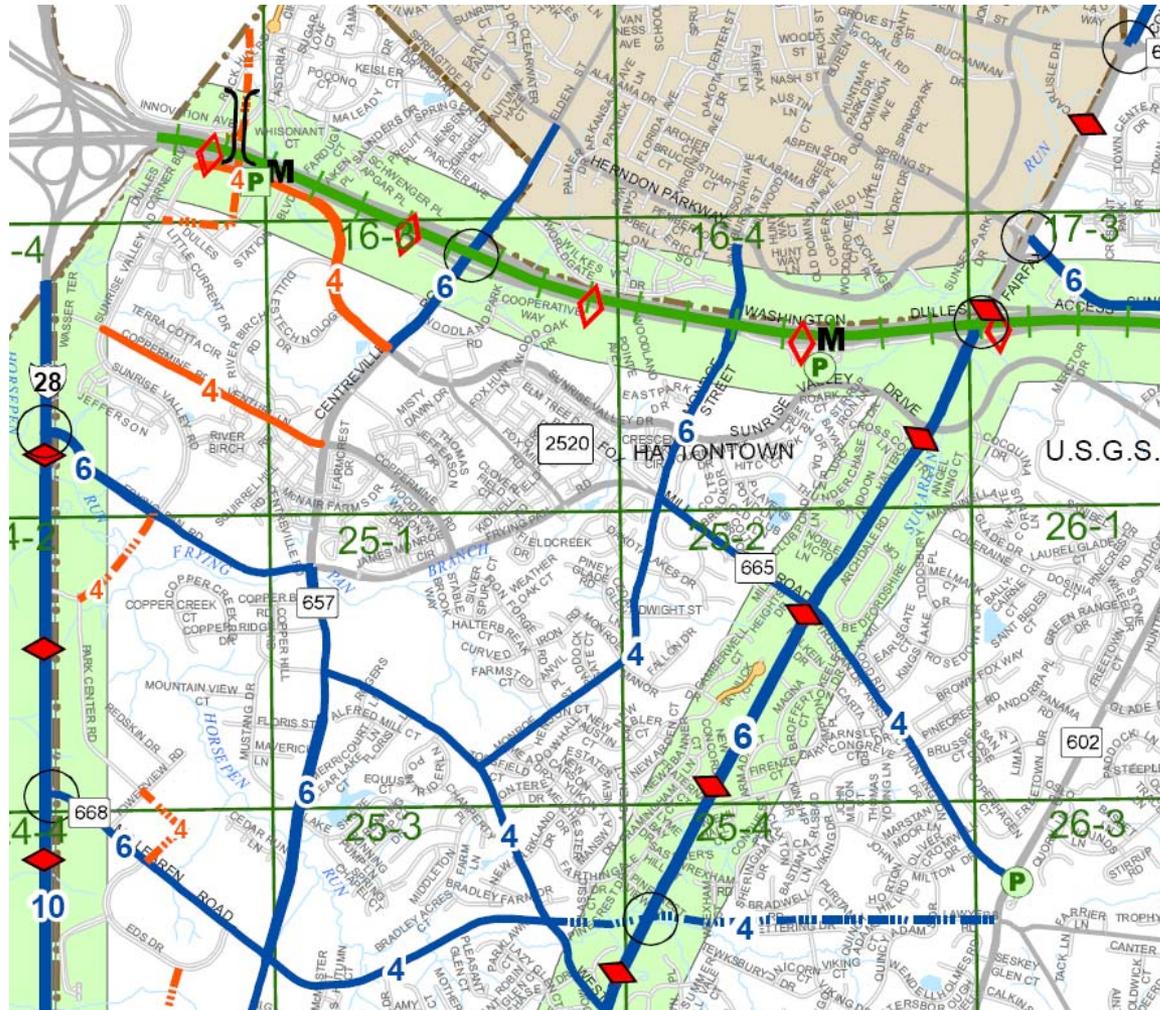


# Study Area





# Road Network Assumed



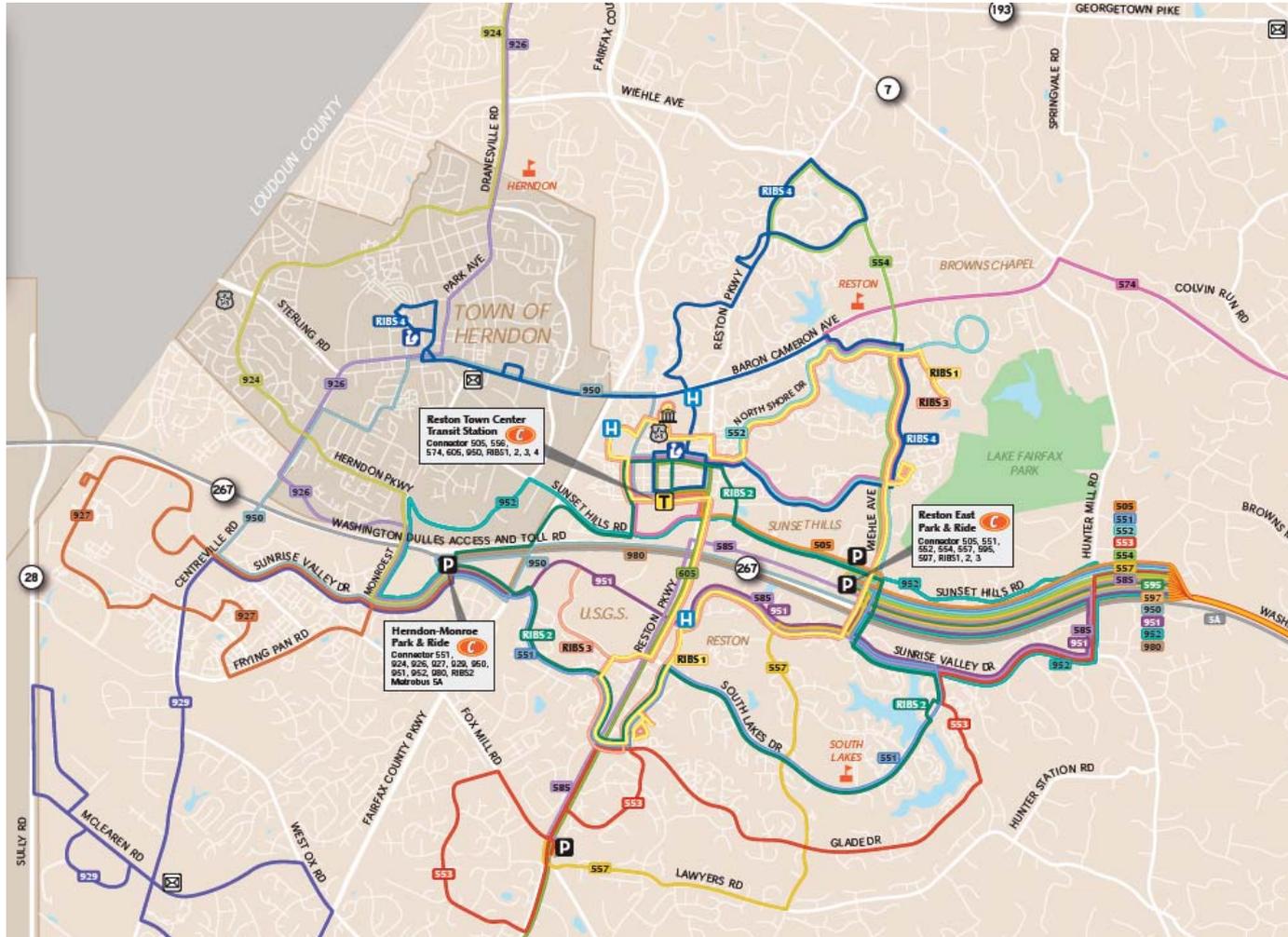


## Road Improvements Assumed in 2030 Base

- Widening of Route 28 to ten lanes including an HOV lane in each direction
- Widening of the Fairfax County Parkway to six lanes including an HOV lane in each direction
- An overpass across the Dulles Toll Road near the County line (Rock Hill Road Overpass)
- An overpass across the Dulles Toll Road west of Wiehle Avenue (Soapstone Overpass)
- Widening of Centreville Road to six lanes per County Transportation Plan
- The extension of Sunrise Valley Drive south of Frying Pan Road, completion of improvements to West Ox Road, Coppermine Road, and Reston Parkway, and widening/improvement of Fox Mill Road, Monroe Street, and Frying Pan Road

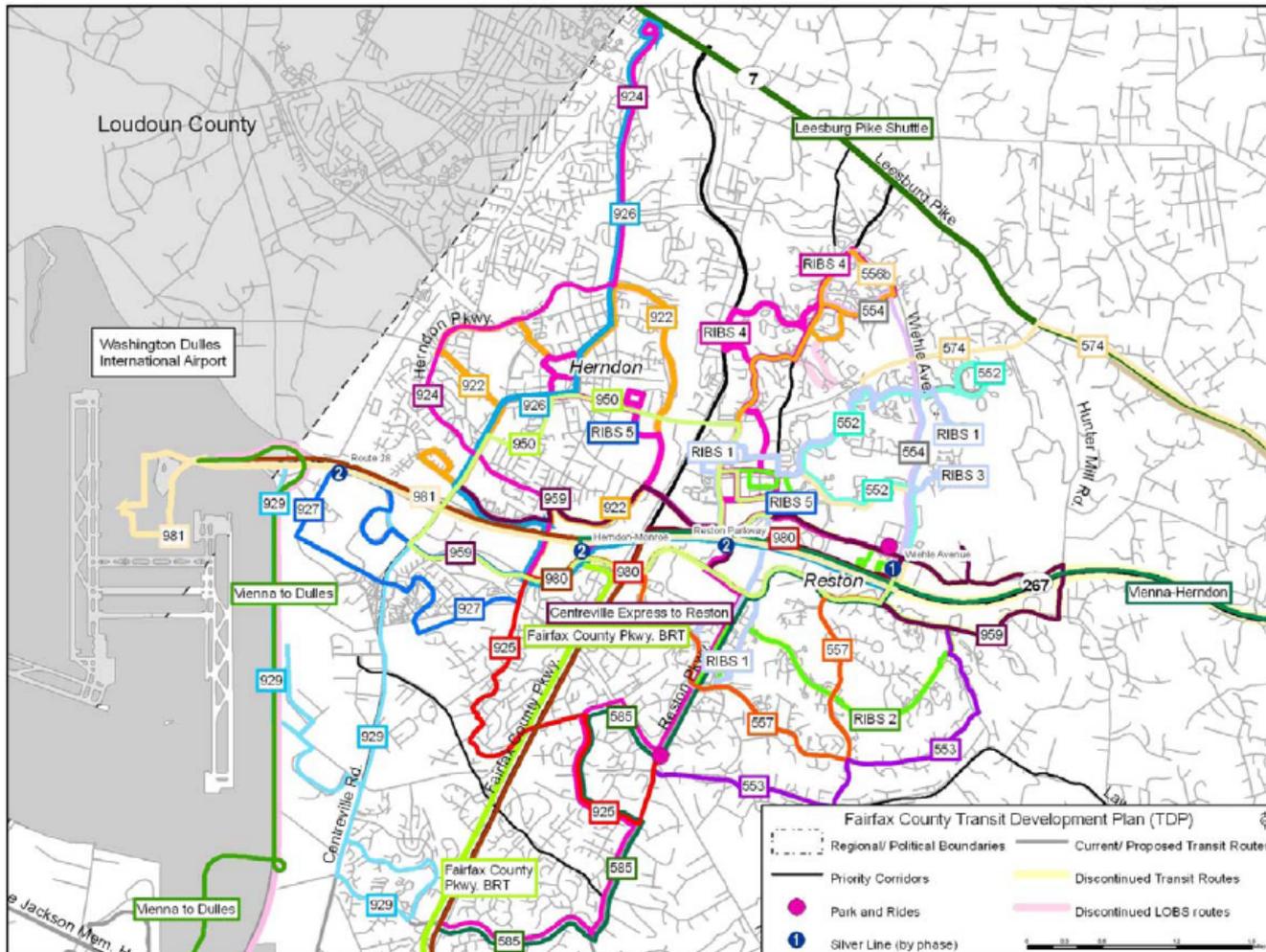


# Existing Transit (Bus Only)





# Future Transit (Bus and Rail)



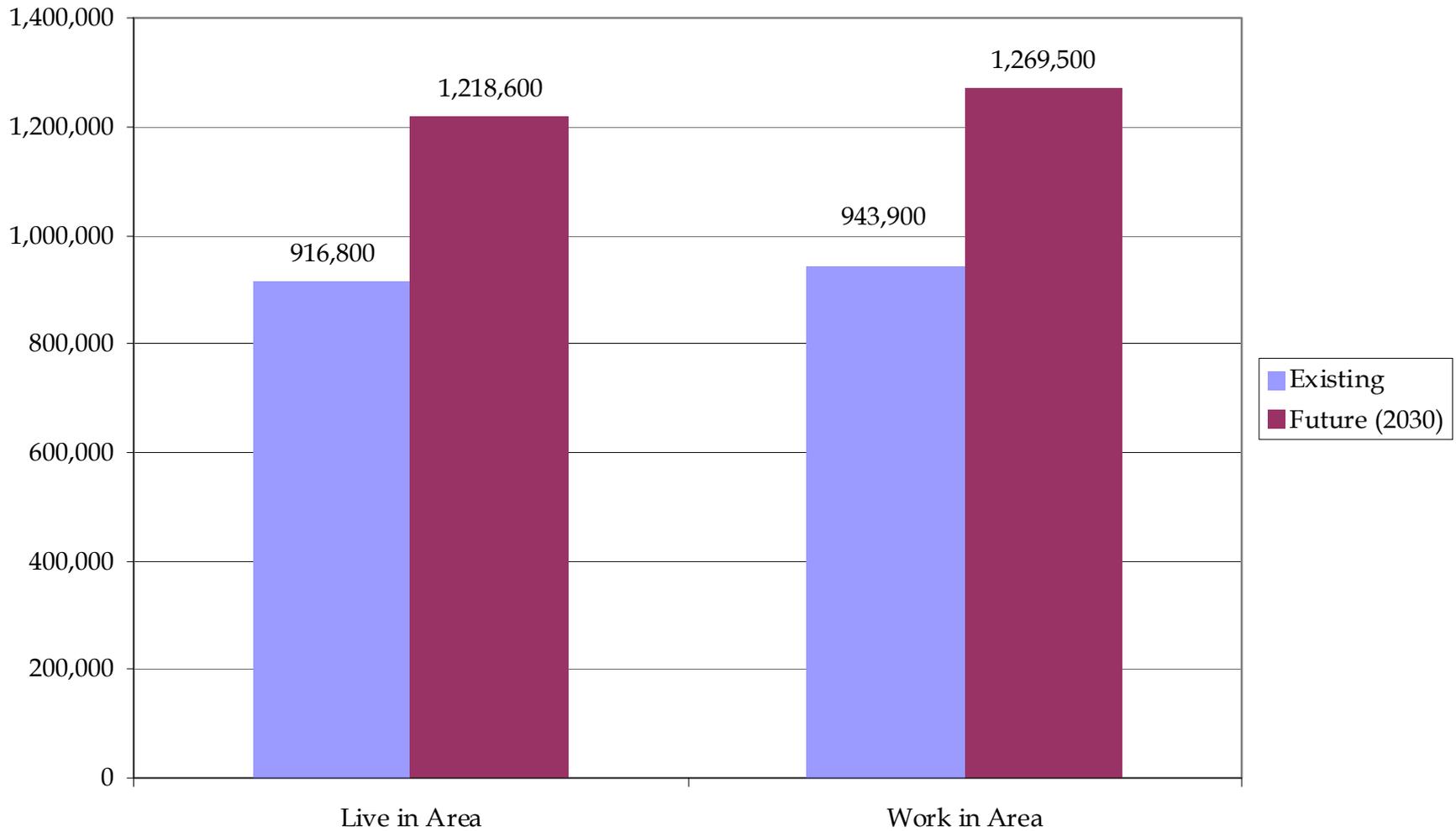


# Travel Trends and Transit Usage



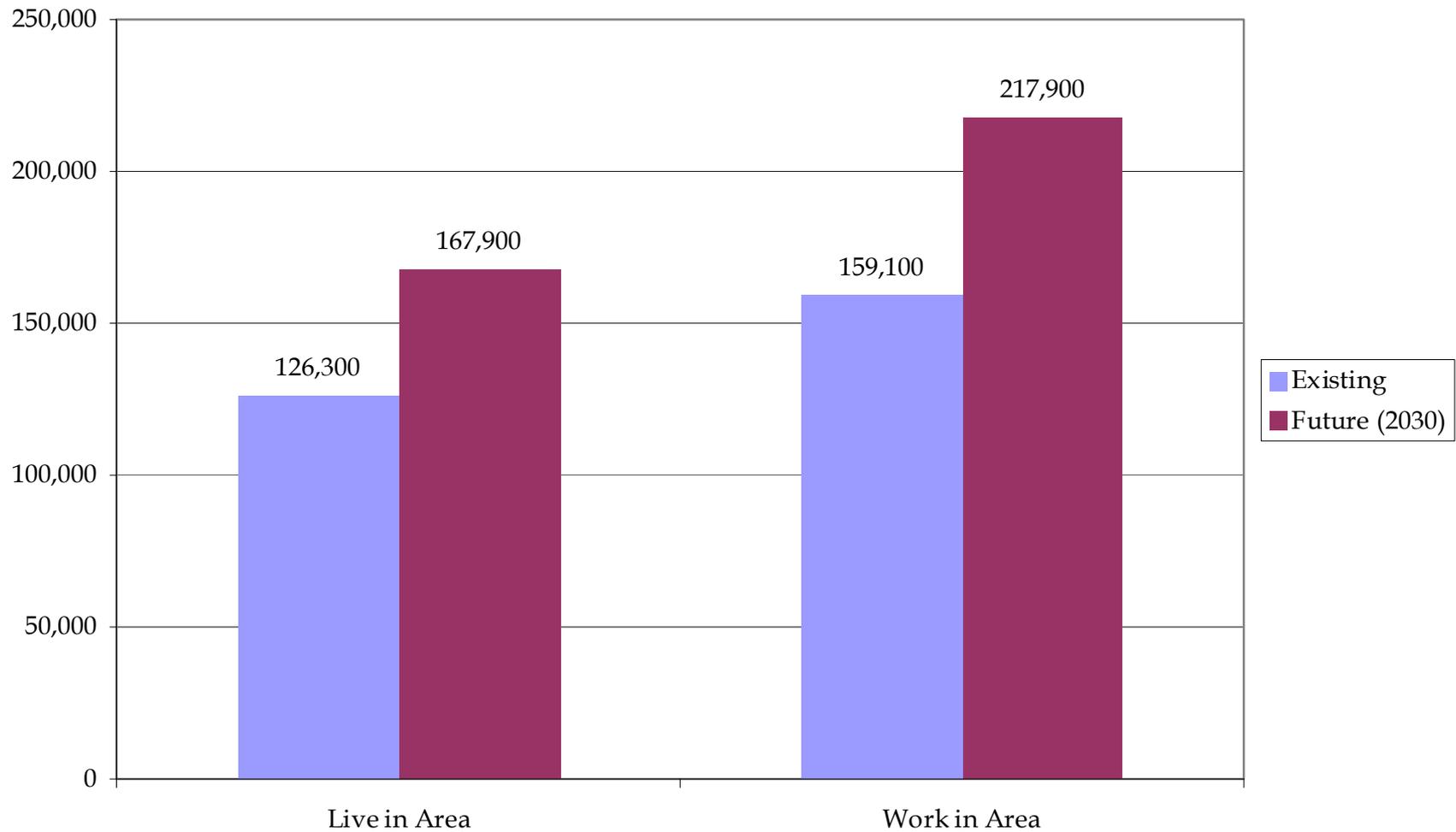
# County of Fairfax, Virginia

## All Trips in the Study Area





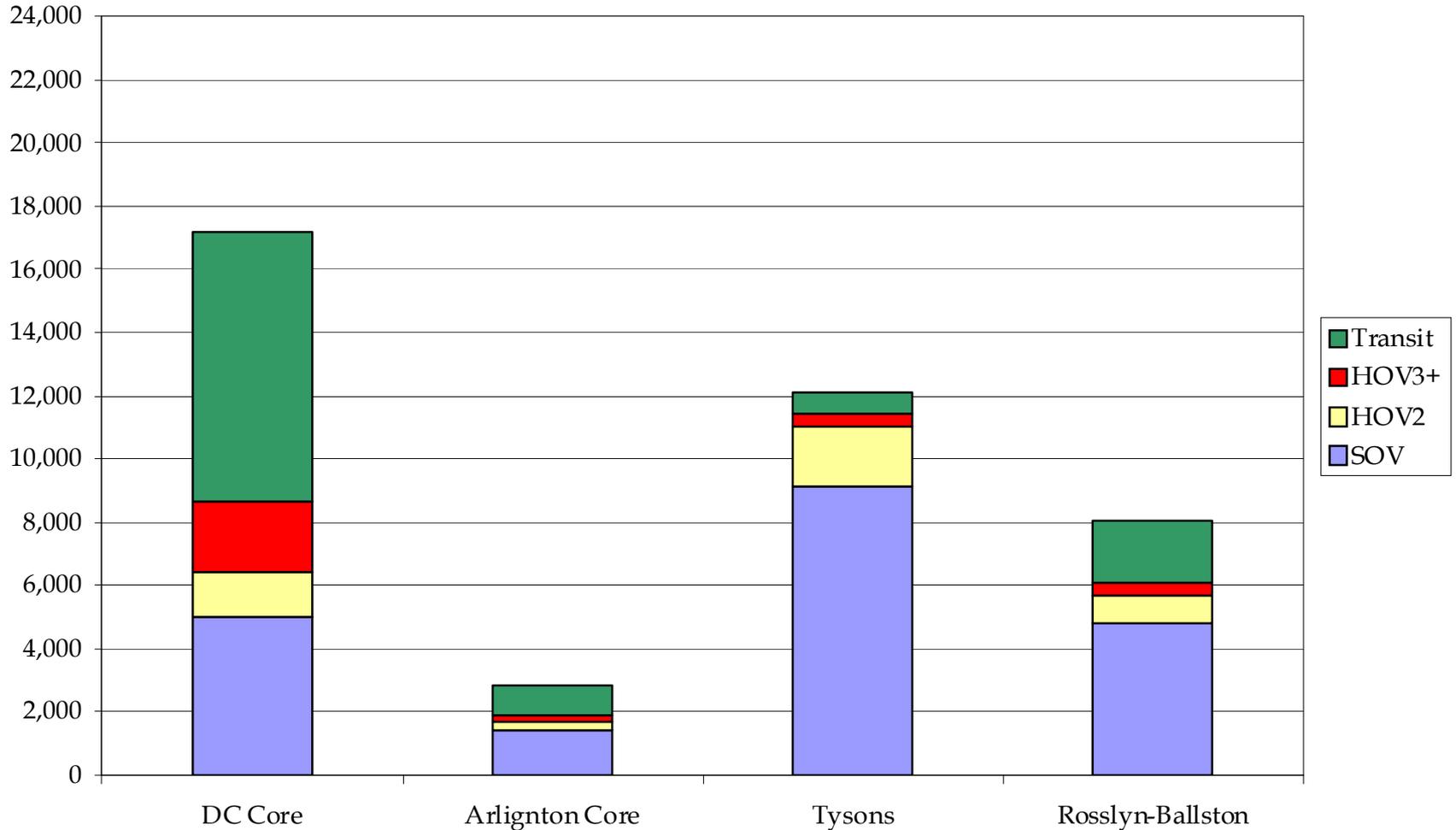
## Commuter Trips in Study Area





# County of Fairfax, Virginia

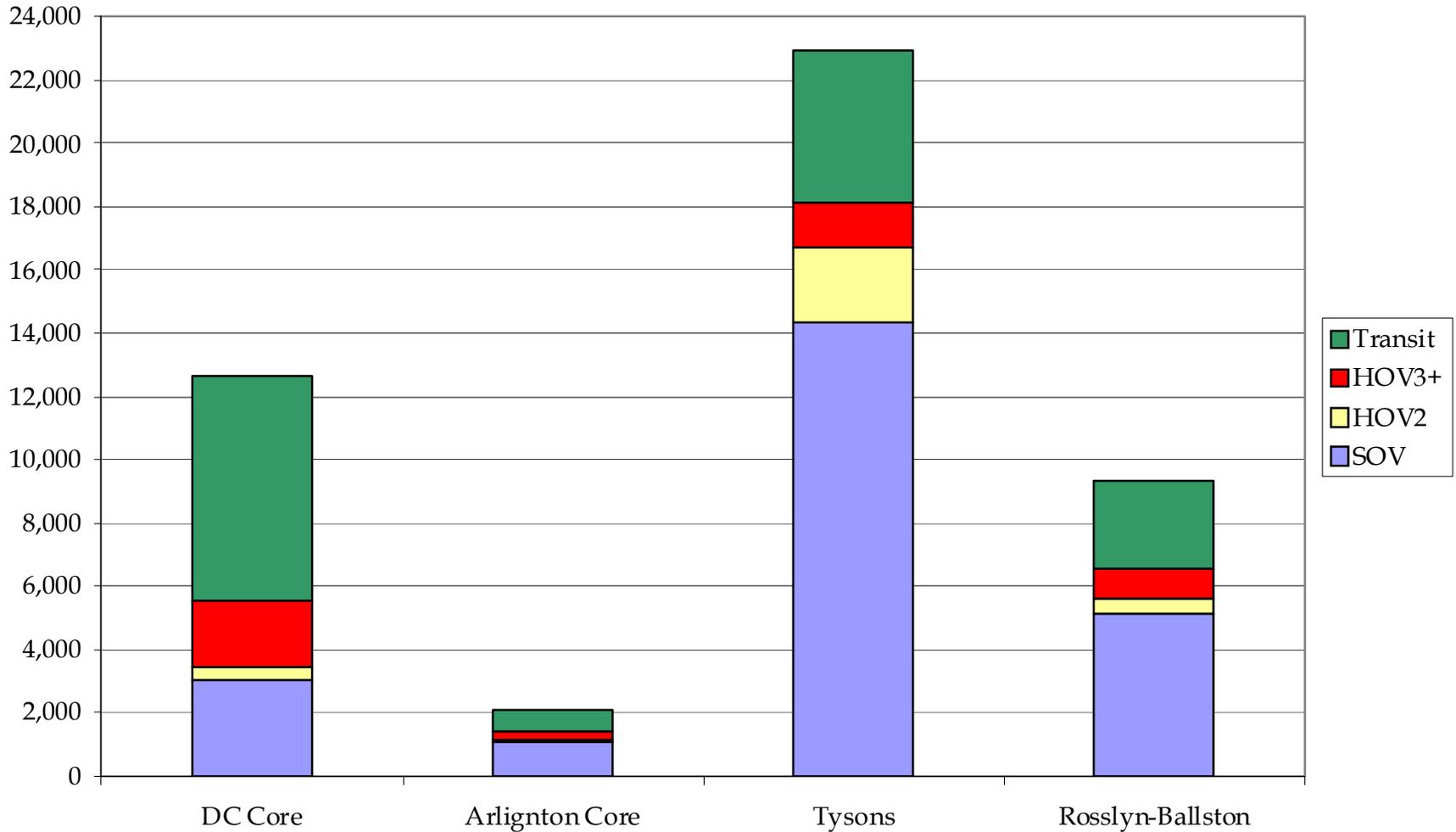
## Existing Mode of Choice for Commuters that Live in Study Area





# County of Fairfax, Virginia

## Future Mode of Choice for Commuters that Live in Study Area





## TRAVEL TRENDS

### From Study Area:

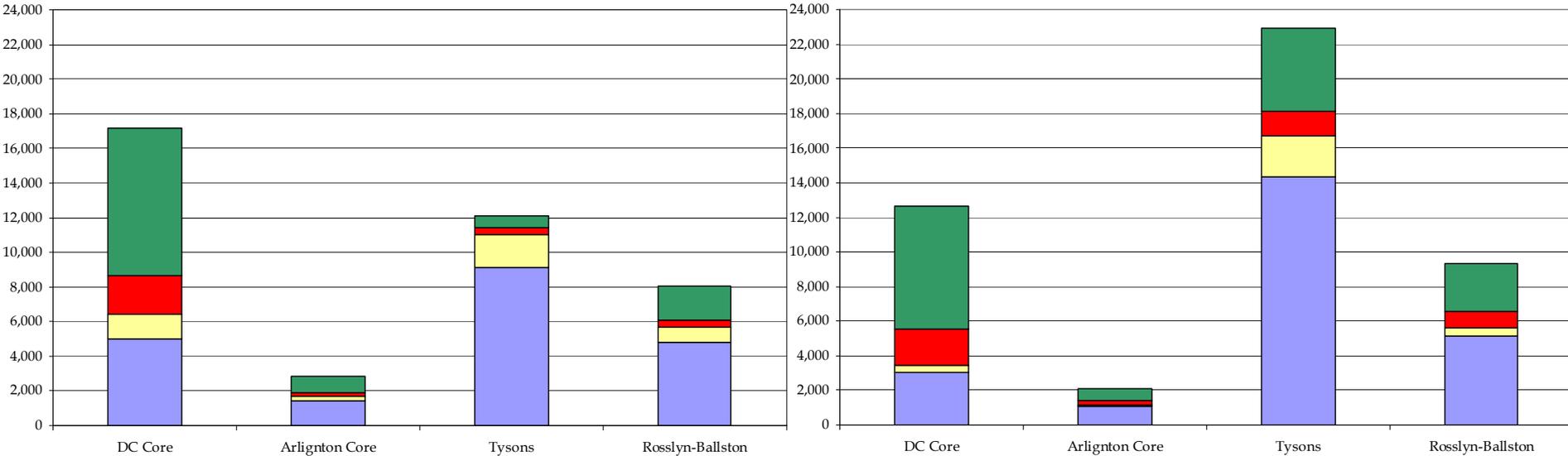
- Commuting to “Silver Line” locations and Internal Commuting Increases from 48% to 57% of Commuting Trips
  - Fewer commuters to Downtown Washington
    - Greater Percentage Will Use Transit
  - Commuting to Tysons Nearly Doubles
    - Transit Use Increases by factor of 7
  - Commuting to Arlington increases only 9%
    - Transit Use Increases from 27% to 30%
  - Internal Commuting Trips Increase From 22% to 29%



# County of Fairfax, Virginia

Existing Mode of Choice for Commuters that Live in Study Area

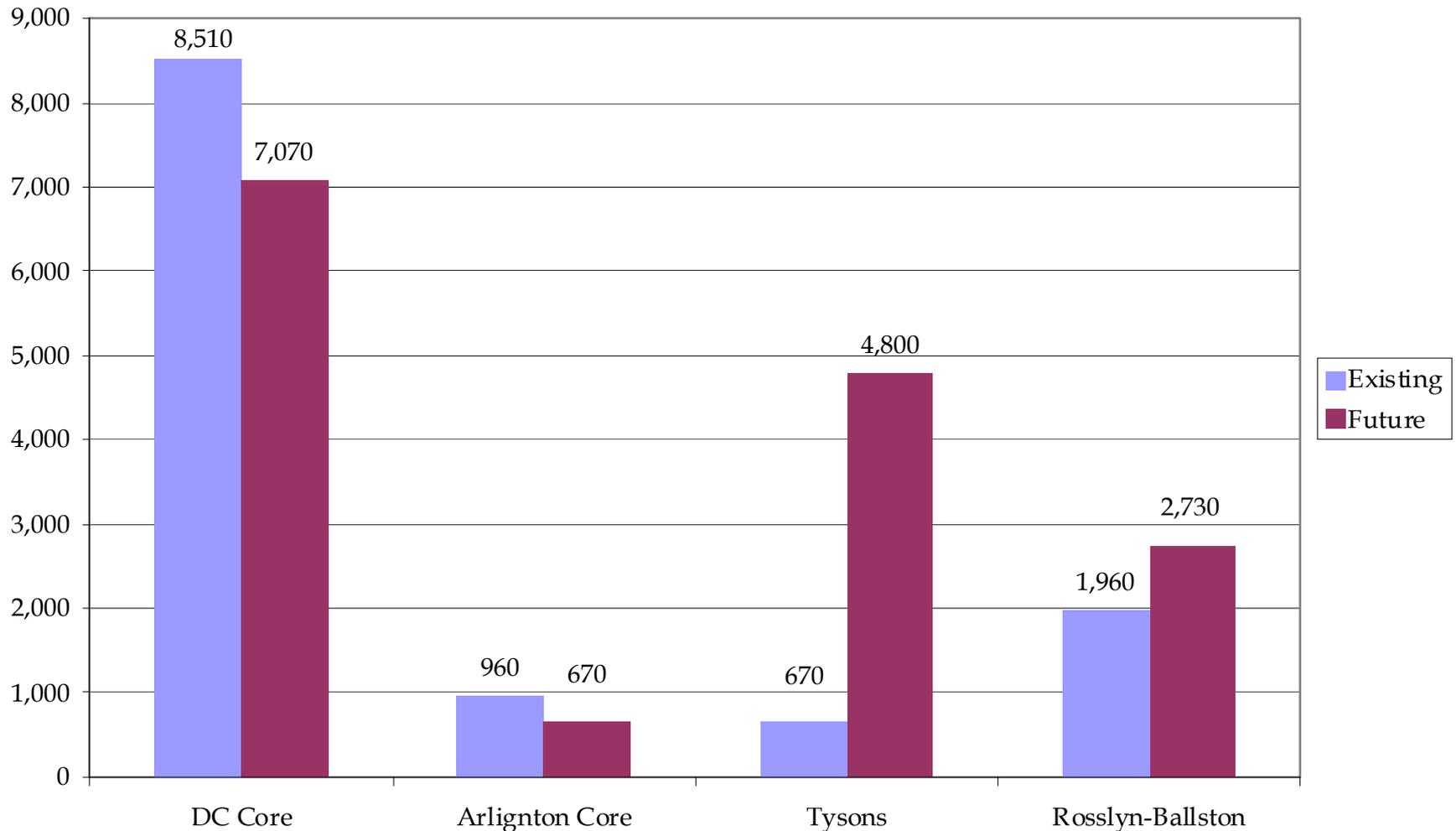
Future Mode of Choice for Commuters that Live in Study Area





# County of Fairfax, Virginia

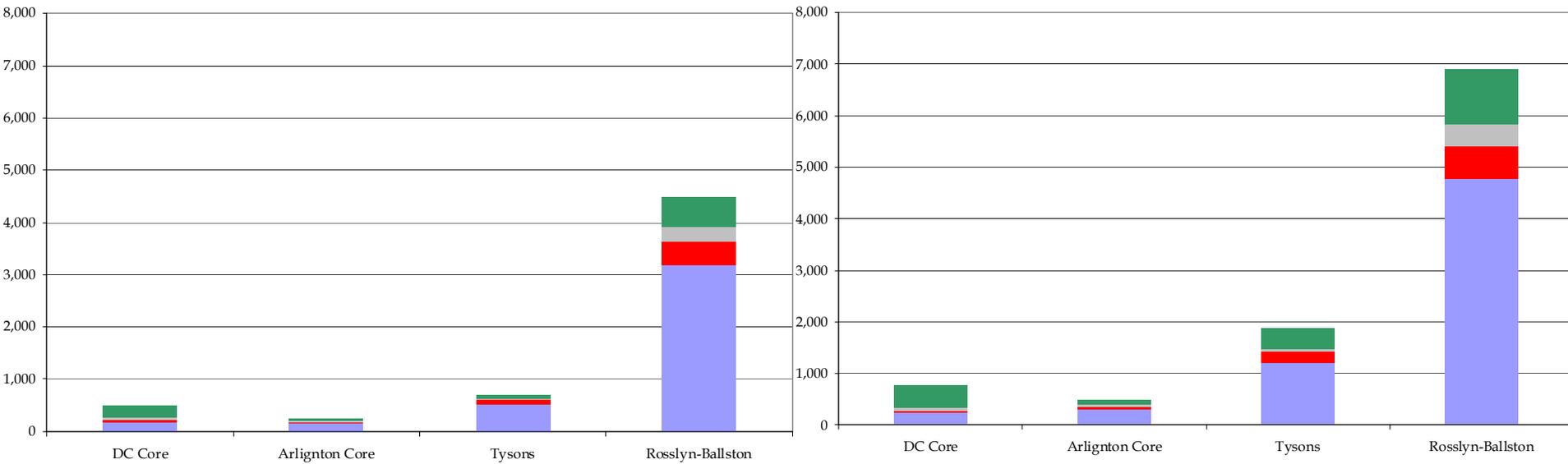
## Transit Usage for Commuters that Live in the Study Area





Existing Mode of Choice for Commuters that Work in Study Area

Future Mode of Choice for Commuters that Work in the Study Area





# Road Network Performance



L.O.S.

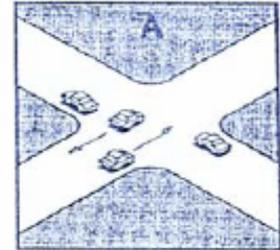
**Roadway Segments or  
Controlled Access Highways**

Intersections

**A**

Free flow, low traffic density.

No vehicle waits longer than one signal indication.



**B**

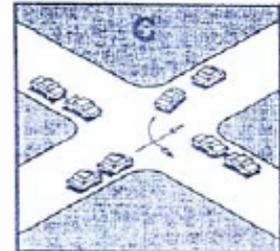
Delay is not unreasonable, stable traffic flow.

On a rare occasion motorists wait through more than one signal indication.

**C**

Stable condition, movements somewhat restricted due to higher volumes, but not objectionable for motorists.

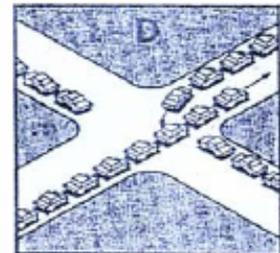
Intermittently drivers wait through more than one signal indication, and occasionally backups may develop behind left turning vehicles, traffic flow still stable and acceptable.



**D**

Movements more restricted, queues and delays may occur during short peaks, but lower demands occur often enough to permit clearing, thus preventing excessive backups.

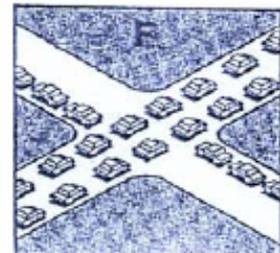
**Delays at intersections may become extensive with some, especially left-turning vehicles waiting two or more signal indications, but enough cycles with lower demand occur to permit periodic clearance, thus preventing excessive back-ups.**



**E**

Actual capacity of the roadway involves delay to all motorists due to congestion.

Very long queues may create lengthy delays, especially for left turning vehicles.



**F**

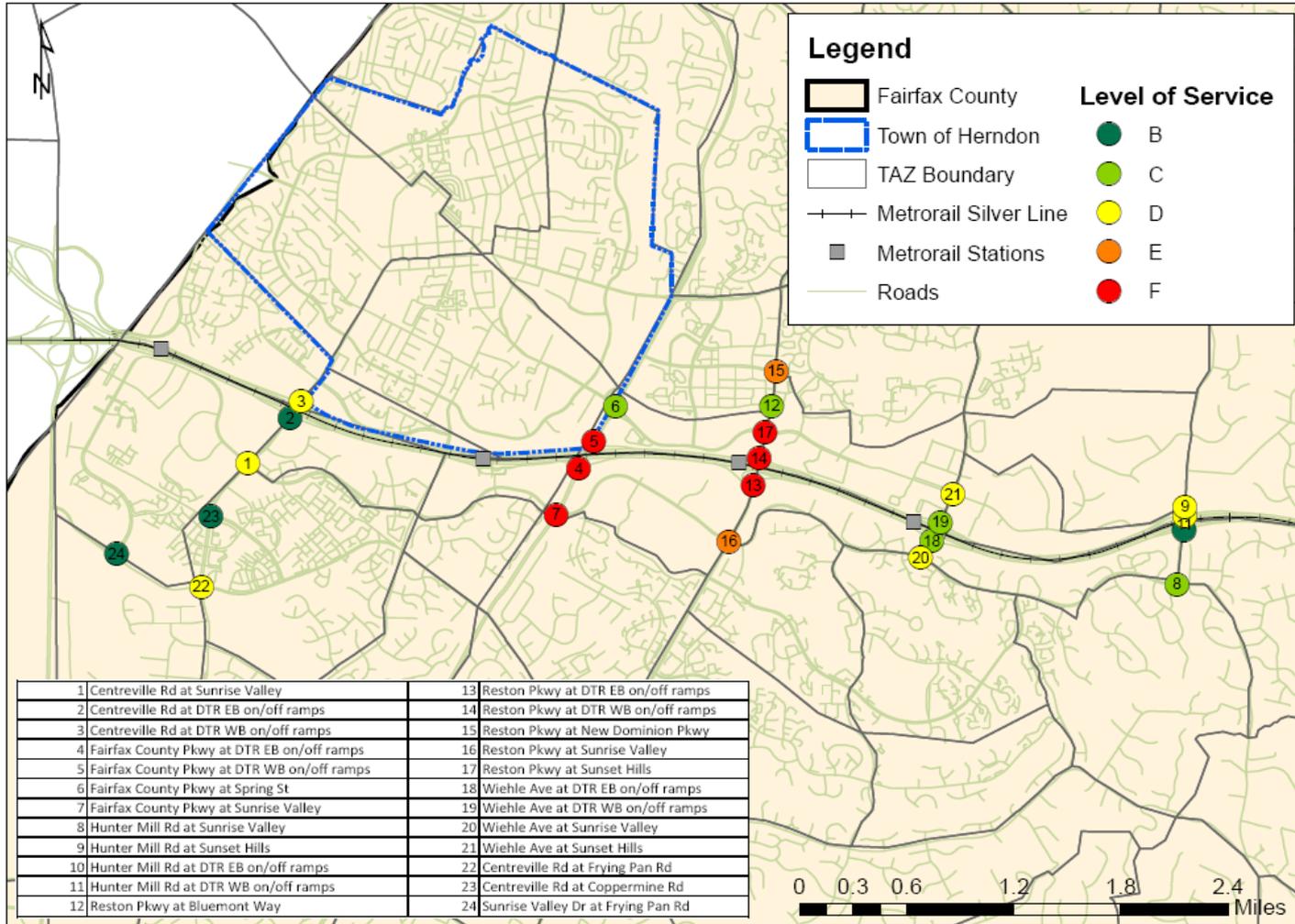
Forced flow with demand volumes greater than capacity resulting in complete congestion. Volumes drop to zero in extreme cases.

Backups from locations downstream restrict or prevent movement of vehicles out of approach creating a storage area during part or all of an hour.



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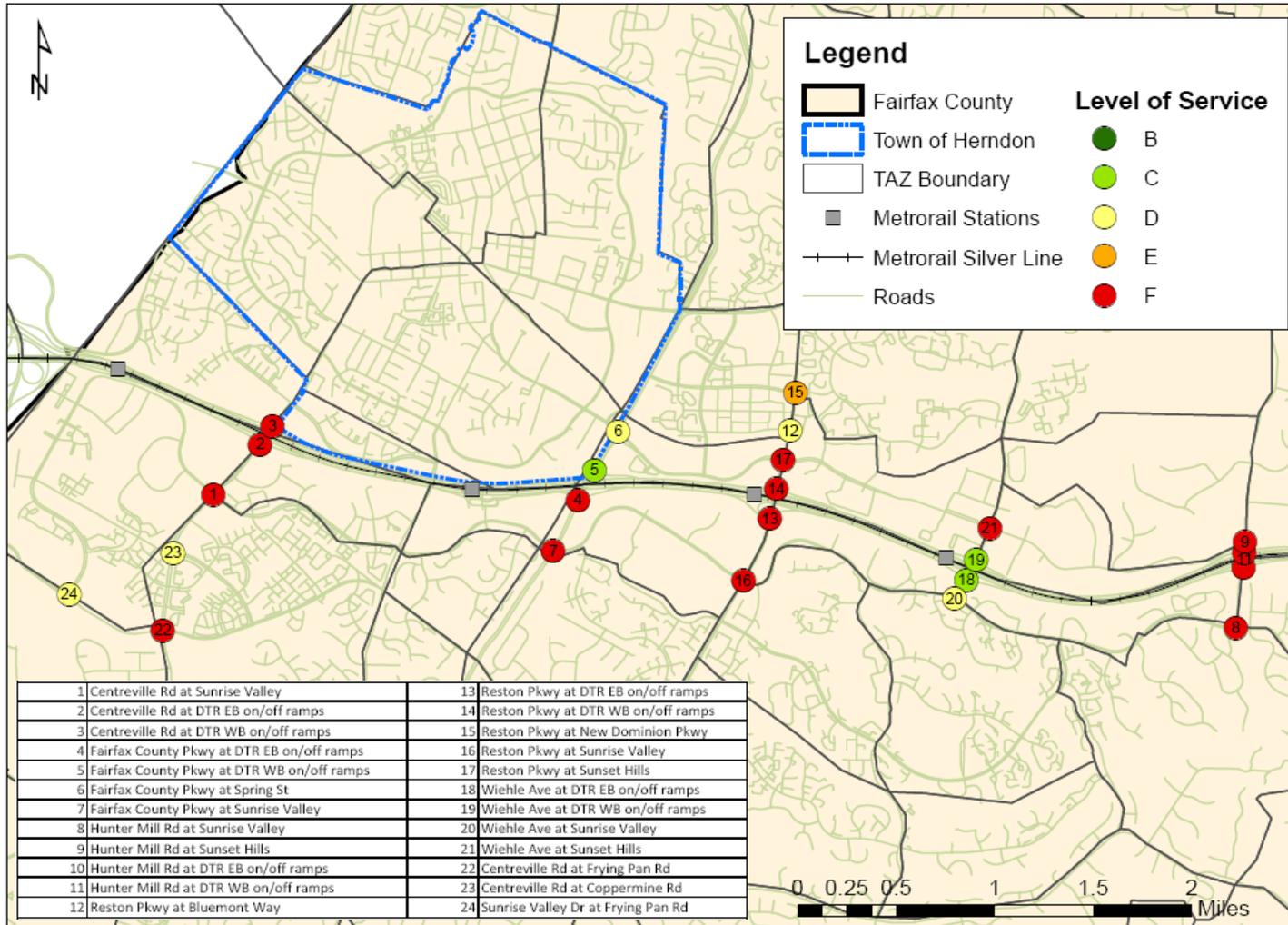
## Existing Morning Peak Hour Level of Service





# County of Fairfax, Virginia

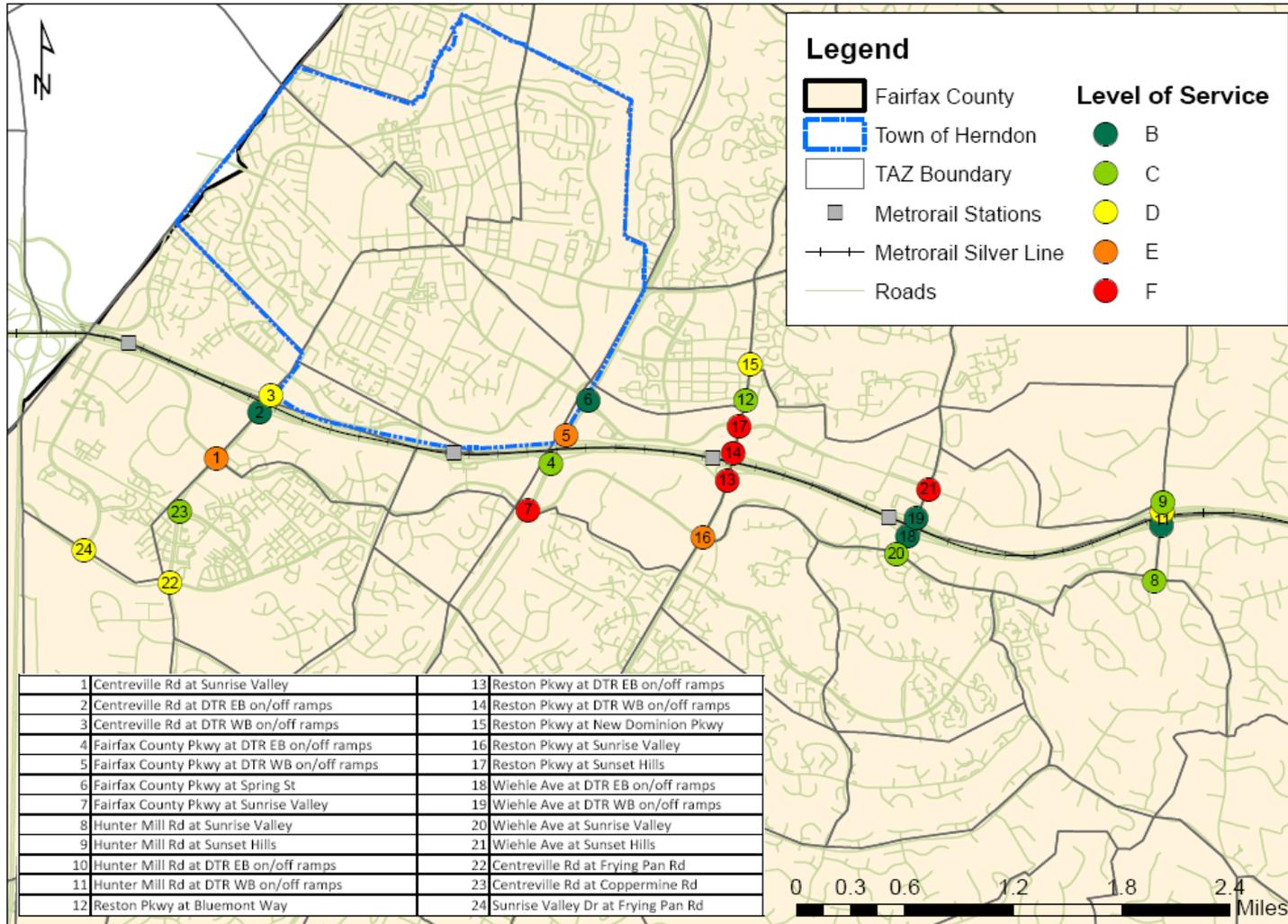
## Future Morning Peak Hour Level of Service





# County of Fairfax, Virginia

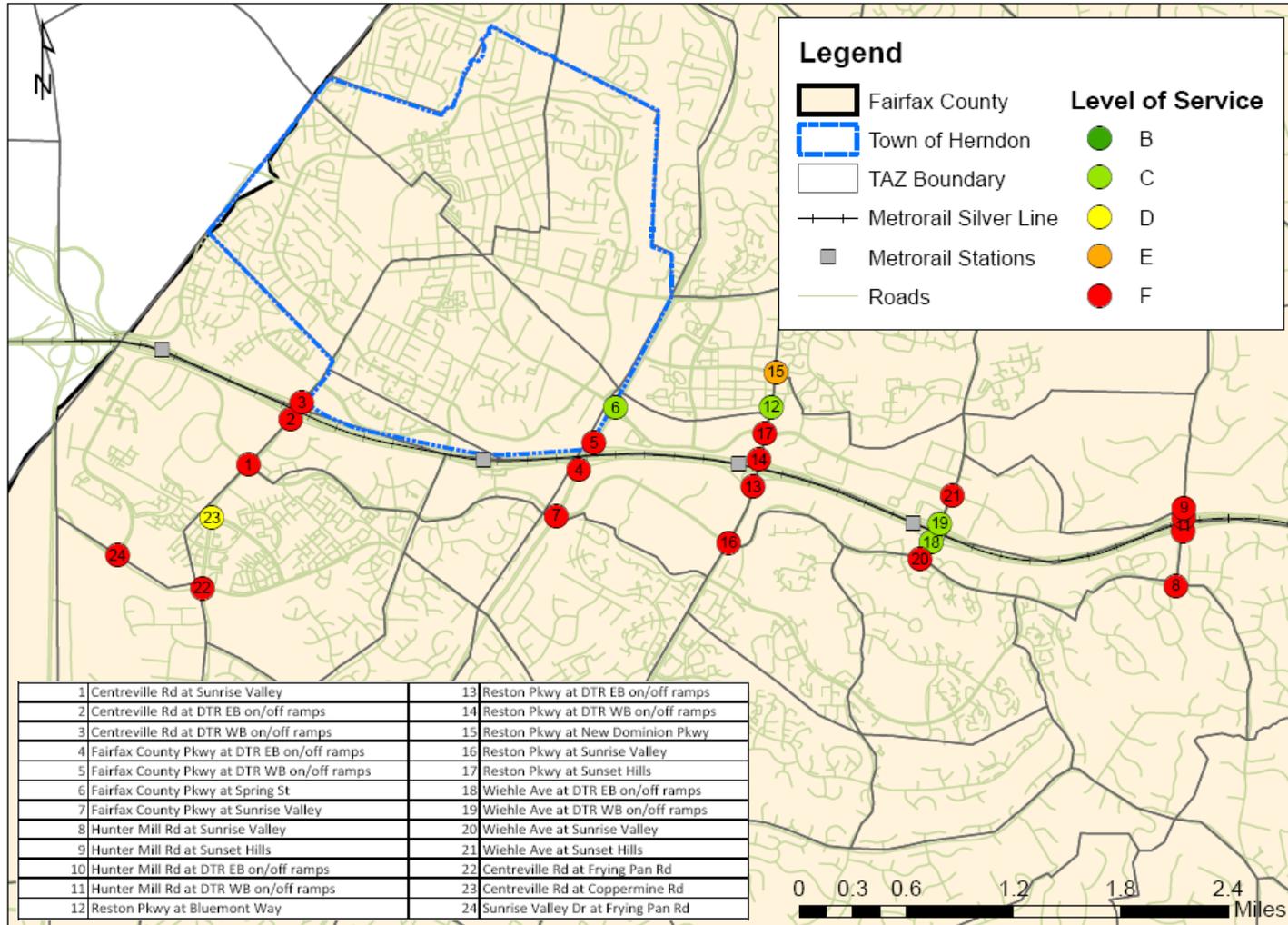
## Existing Evening Peak Hour Level of Service





# County of Fairfax, Virginia

## Future Evening Peak Hour Level of Service





## General Mitigation Strategies

- Strategic Land Use (TOD)
  - Mixed –Use, Location, Type
- Increase Use of Transit
- Enhanced TDM
- Signal Optimization
- Turn Lanes
- Local Connections



# Questions/Discussion