

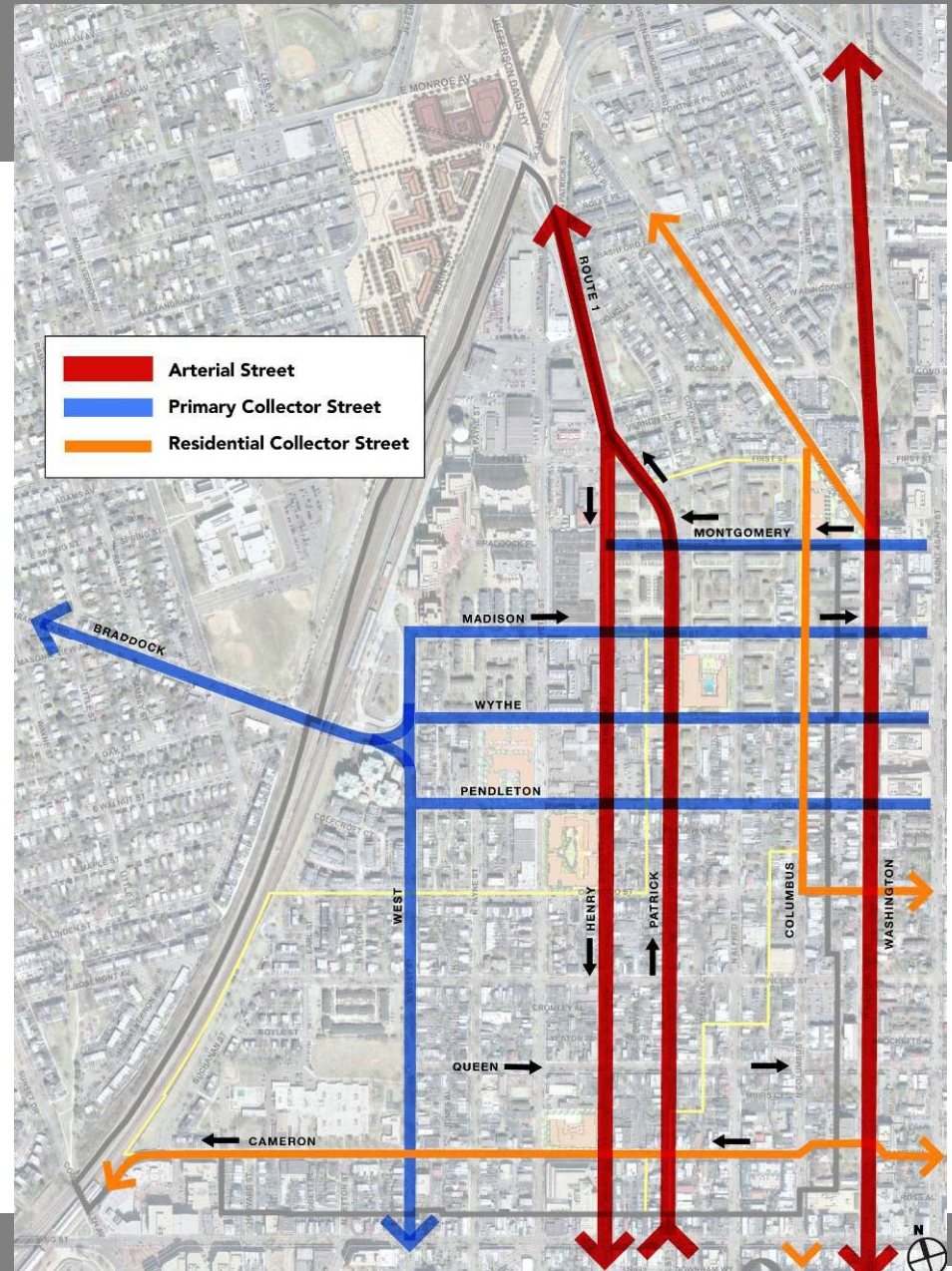
Braddock Metro Neighborhood Plan Transportation Worksession #4

January 07, 2008



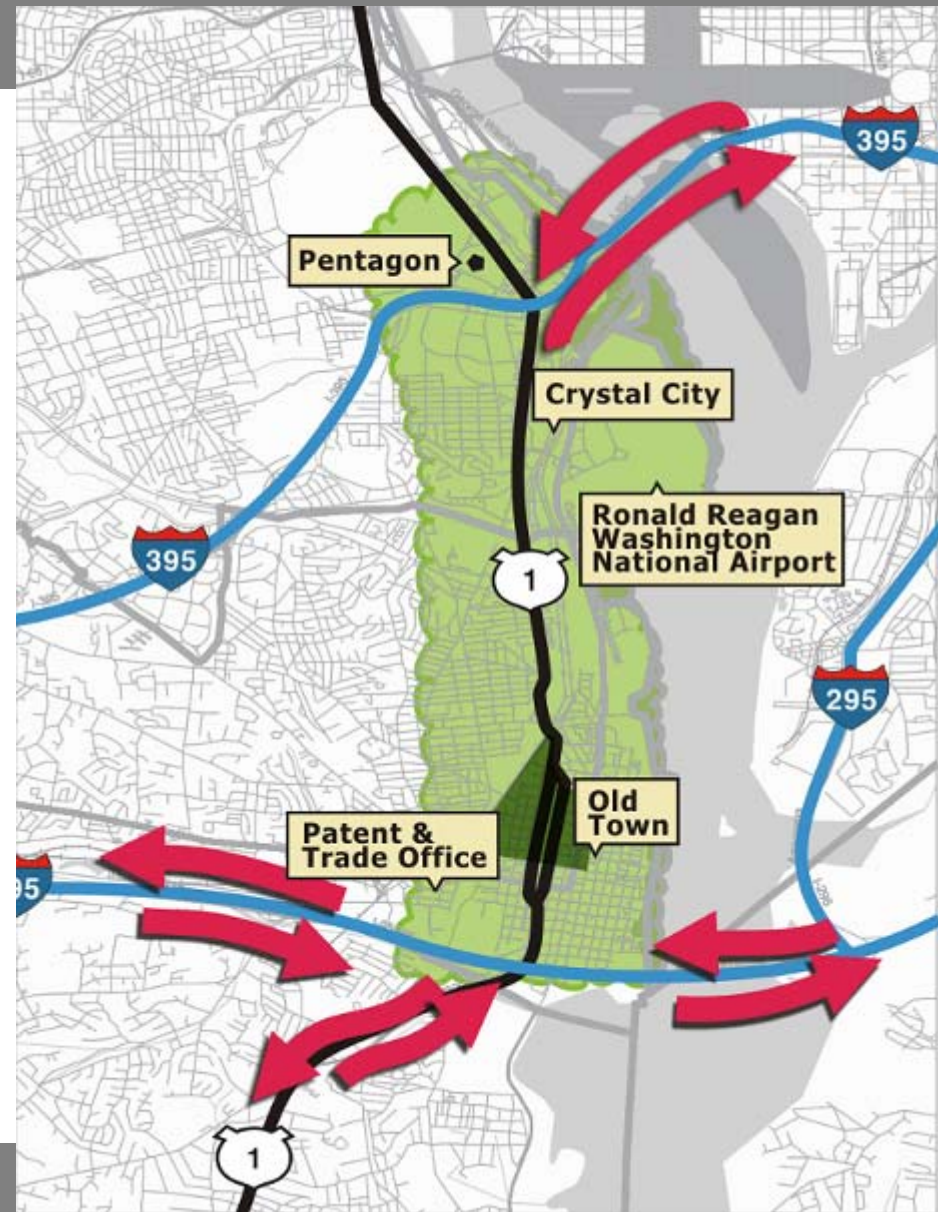
Roadway Network

- Route 1 is a “workhorse”
- Grid pattern of local/collector streets
- One-way and two-way street patterns



Regional Conditions

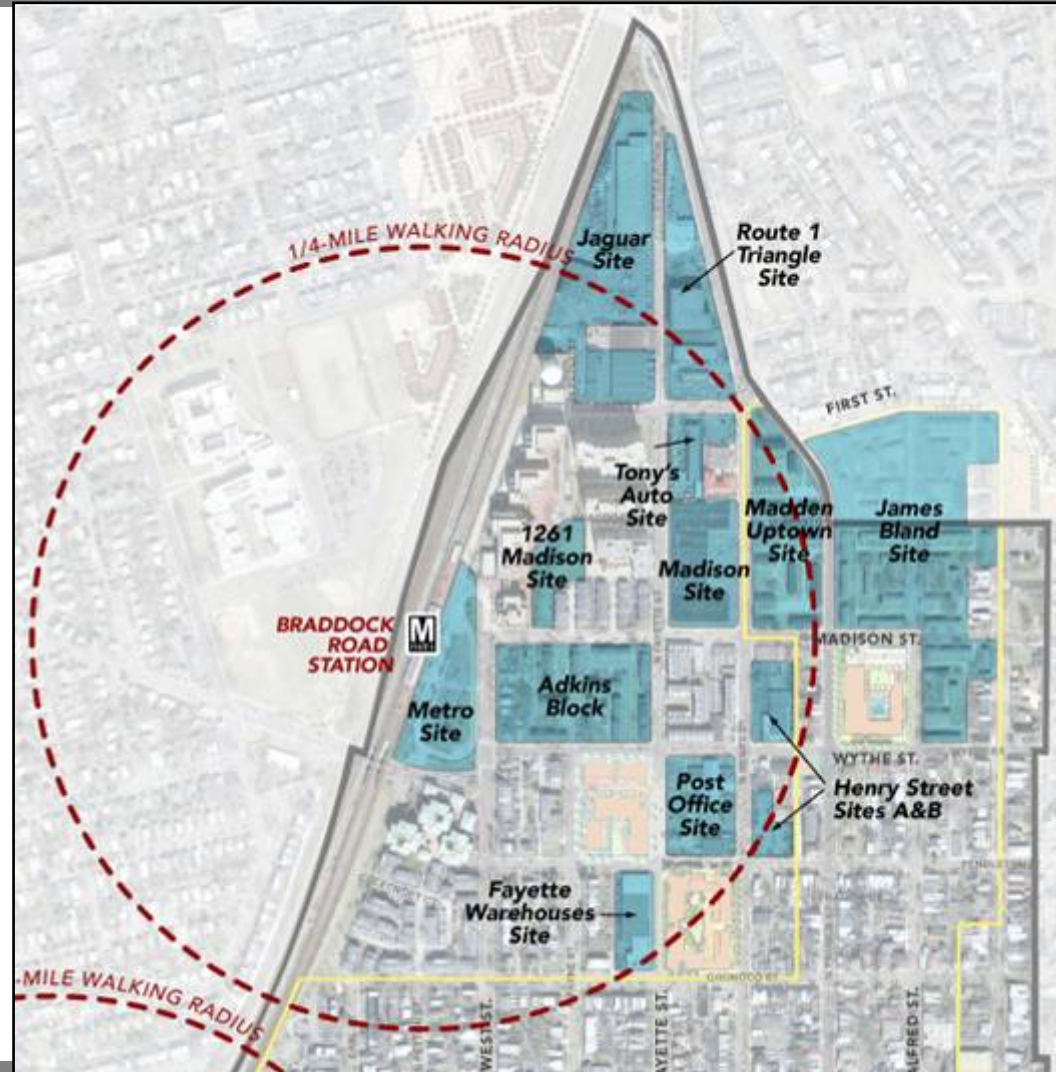
- Natural and physical barriers constrain travel options
- Major destinations along Route 1
- Beltway heavily influences traffic conditions along Route 1



20 Year Buildout

Assumptions (rounded):

- **Townhouse: 300 units**
- **Multifamily: 2,100 units**
- **Office: 260,000 sf**
- **Retail: 80,000 sf**



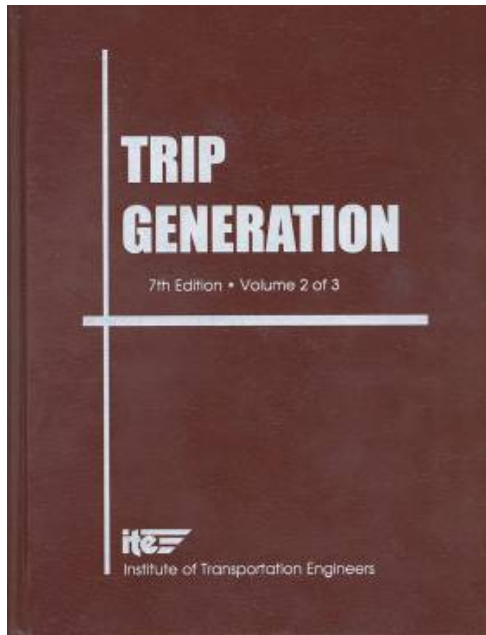
Traffic Impact Assessment Methodology

- **Planning level assessment to estimate impact at the roadway link level**
- **Assumes full buildout of future development**
 - 20 year time frame
- **Four basic steps**
 - How many trips will new development produce?
 - How many of those trips will occur as new auto trips?
 - Where will the new auto traffic travel to/from?
 - What is the impact of development traffic as a percentage of existing volumes?



Trip Generation Sources

- Institute of Transportation Engineers (ITE) *Trip Generation Manual***
 - Nationally recognized database



Single-Family Detached Housing (210)

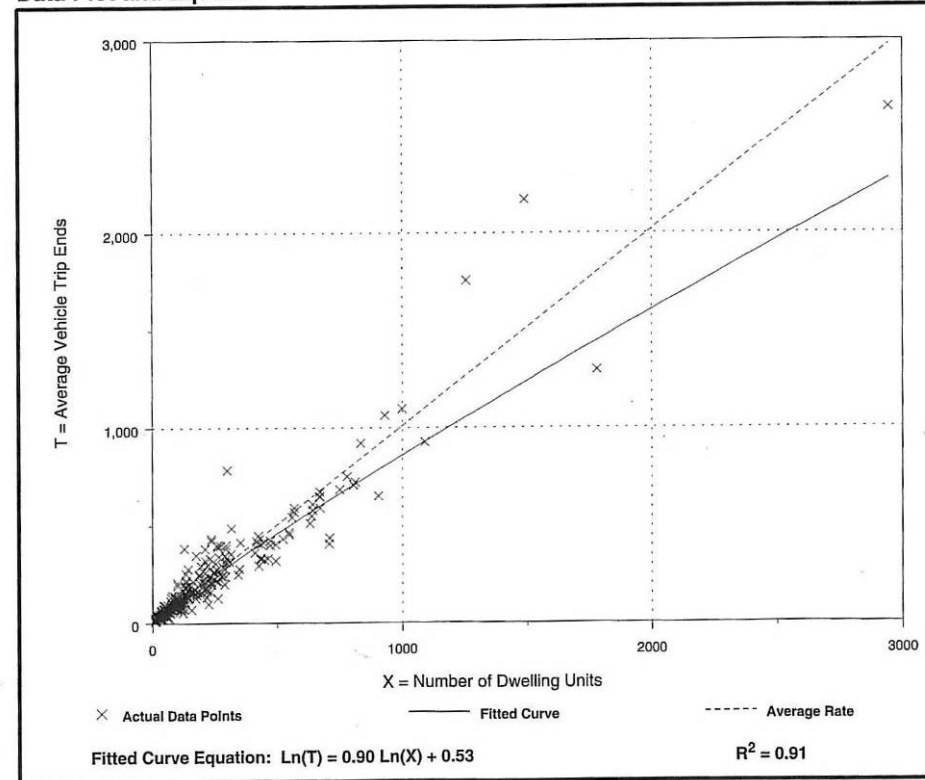
Average Vehicle Trip Ends vs: Dwelling Units
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.

Number of Studies: 302
 Avg. Number of Dwelling Units: 214
 Directional Distribution: 63% entering, 37% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
1.01	0.42 - 2.98	1.05

Data Plot and Equation



Baseline Trips (all trip types, all modes)

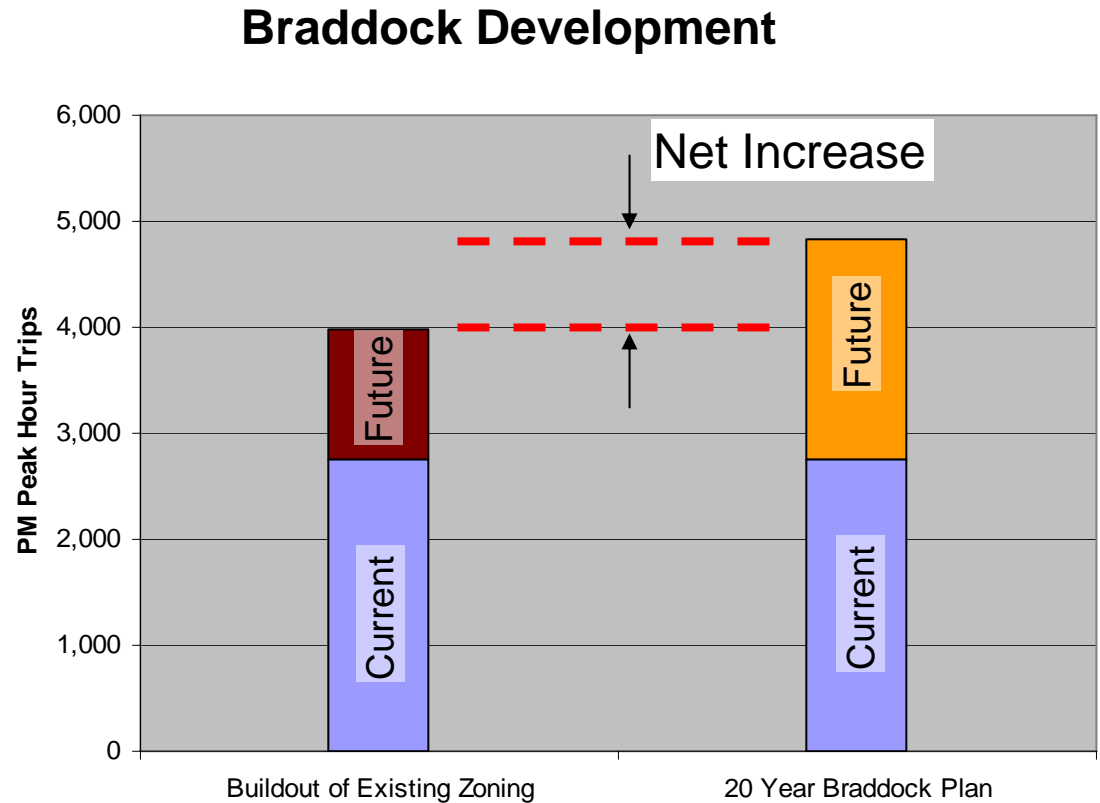
Braddock Plan 20 Year Buildout

Land Use	ITE Land Use Code	Size	AM Peak Hour		PM Peak Hour	
			Rate	Trips	Rate	Trips
Townhouse	230	300 units	0.44 trips/unit	130	0.52 trips/unit	155
Multi family	220	2,100 units	0.51 trips/unit	1,070	0.62 trips/unit	1,305
Office	710	260,000 sf	1.55 trips/ksf	405	1.49 trips/ksf	385
Specialty Retail	814	80,000 sf	0.74 trips/ksf	60	2.71 trips/ksf	215
Total				1,665		2,060

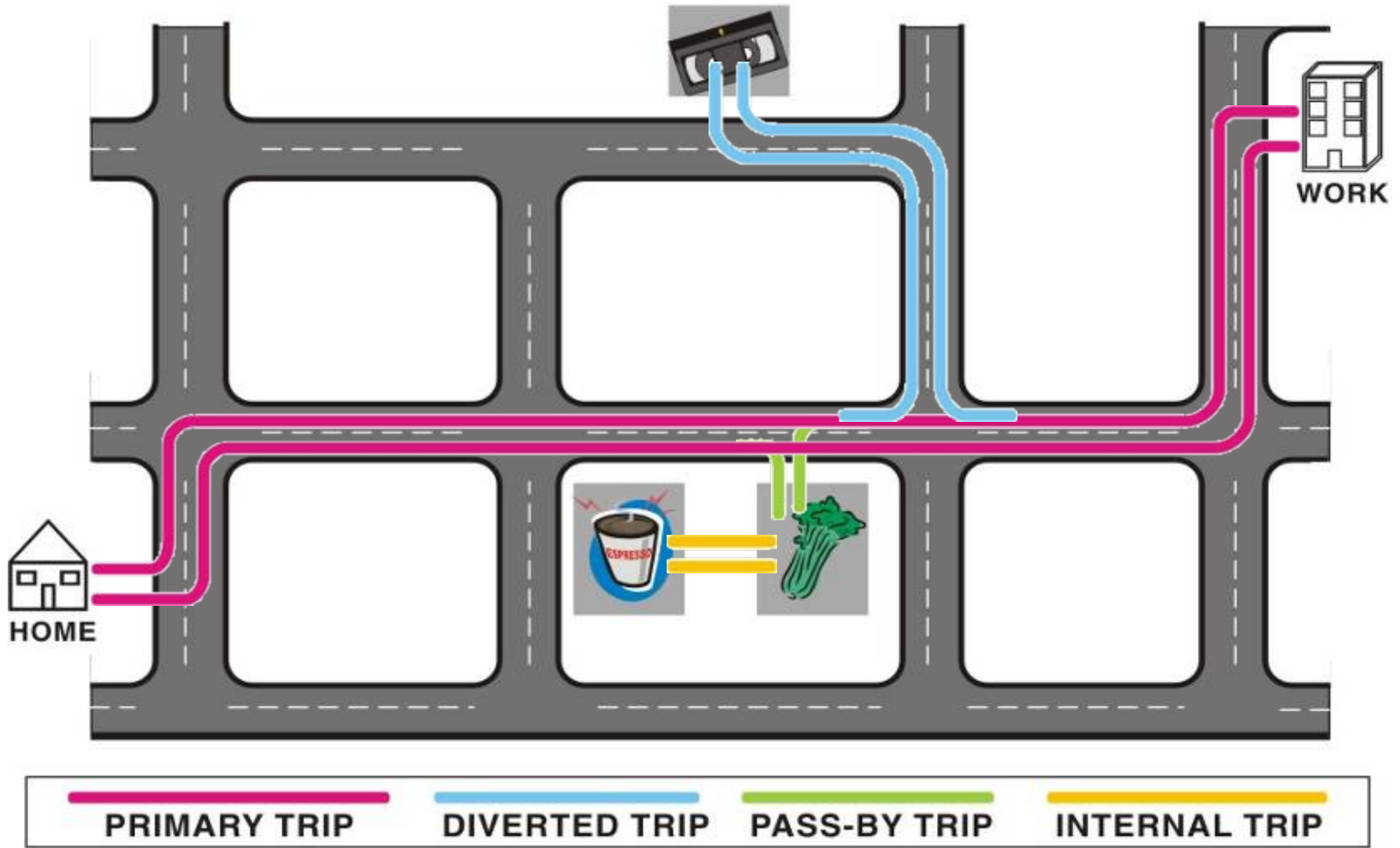


How Does this Compare?

- **20% increase in all trip making within Braddock**
 - Includes both auto and non-auto trips



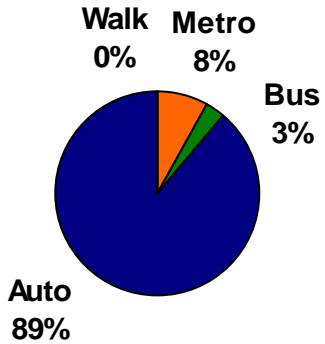
Trip Types



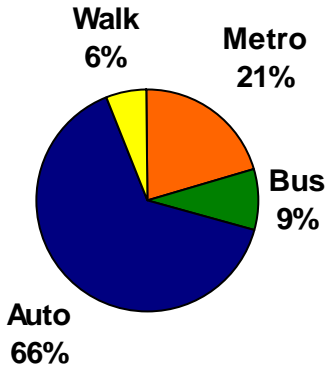
Mode Share Commuter Trips to Office

DC Metro Area

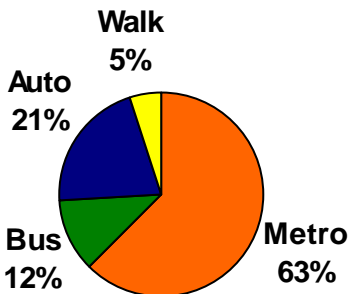
Outside Beltway



Inside Beltway

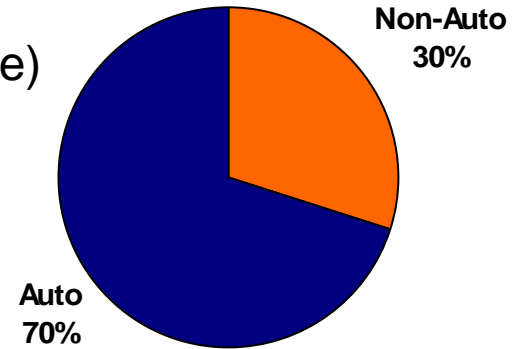


Central Business District

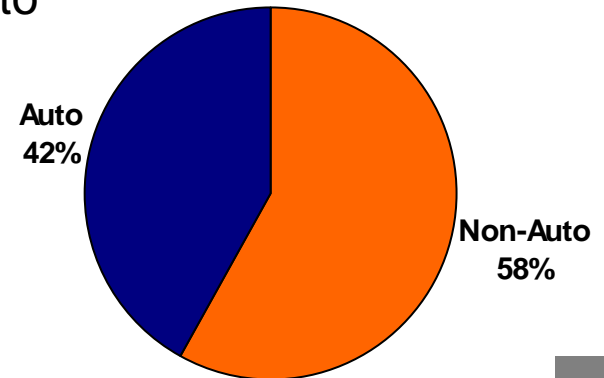


Braddock

Today (Existing Auto Mode Share)



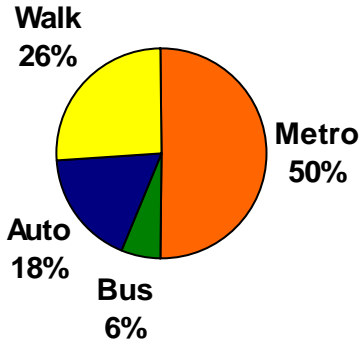
Future (Reduced Auto Mode Share)



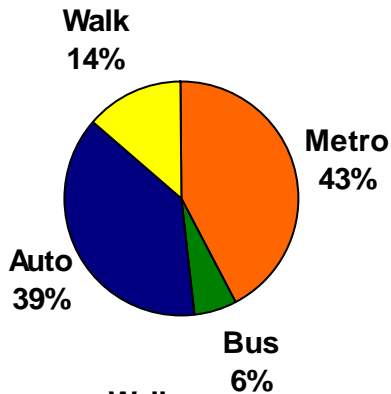
Mode Share Residential Trips

DC Metro Area

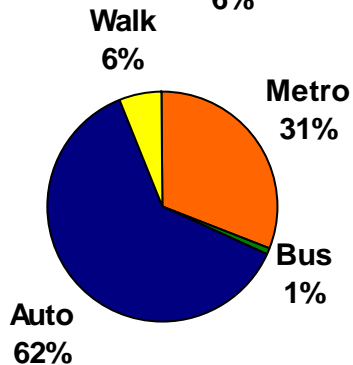
Outside Beltway



Inside Beltway

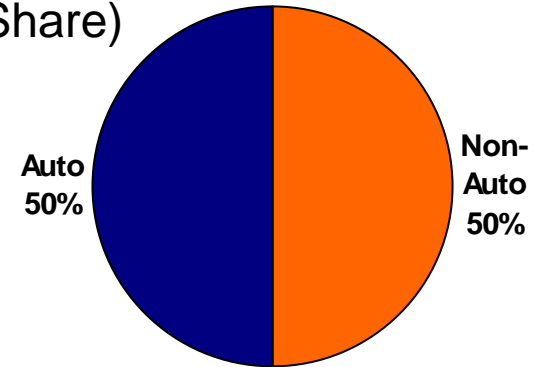


Central Business District

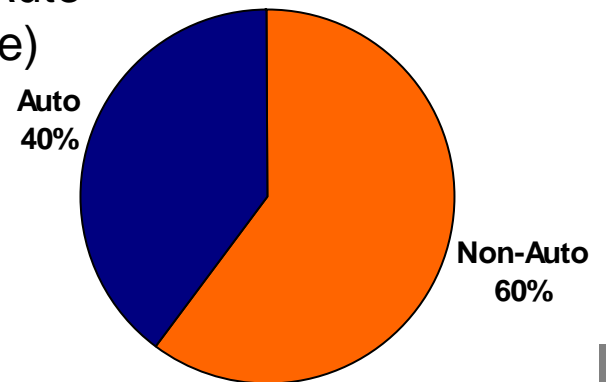


Braddock

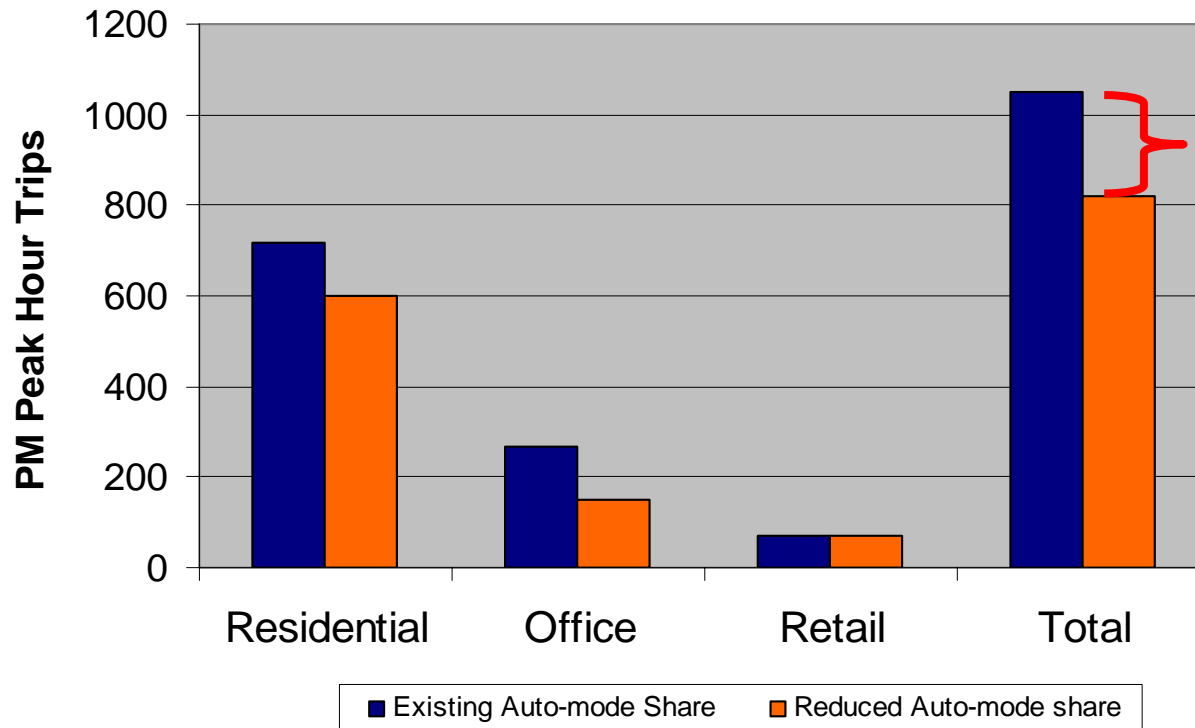
Today (Existing Auto Mode Share)



Future (Reduced Auto Mode Share)



Auto Impacts from Future Braddock Development



- Net reduction = 230 trips
- Reflective of successful TDM

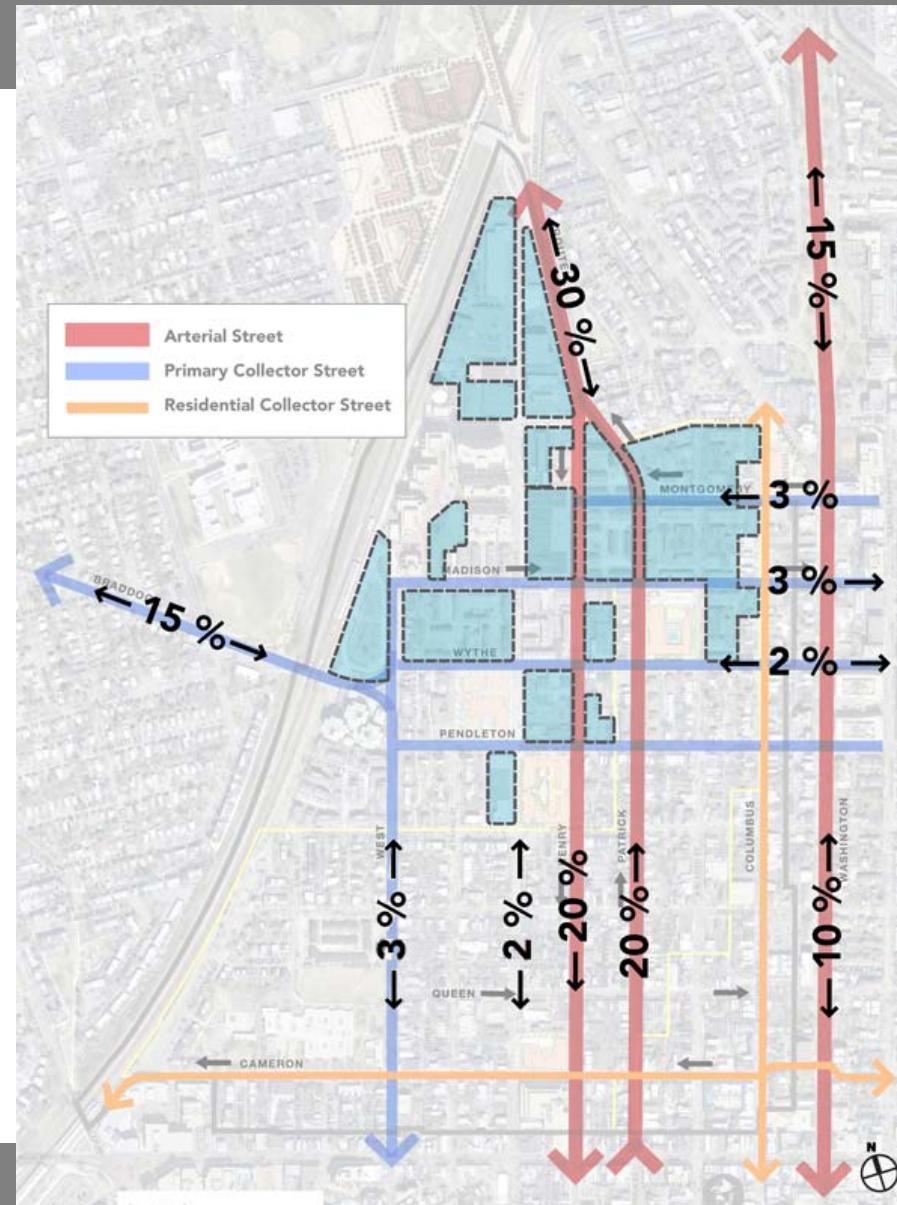
Assumptions (rounded):

- Townhouse: 300 units
- Multifamily: 2,100 units
- Office: 260,000 sf
- Retail: 80,000 sf

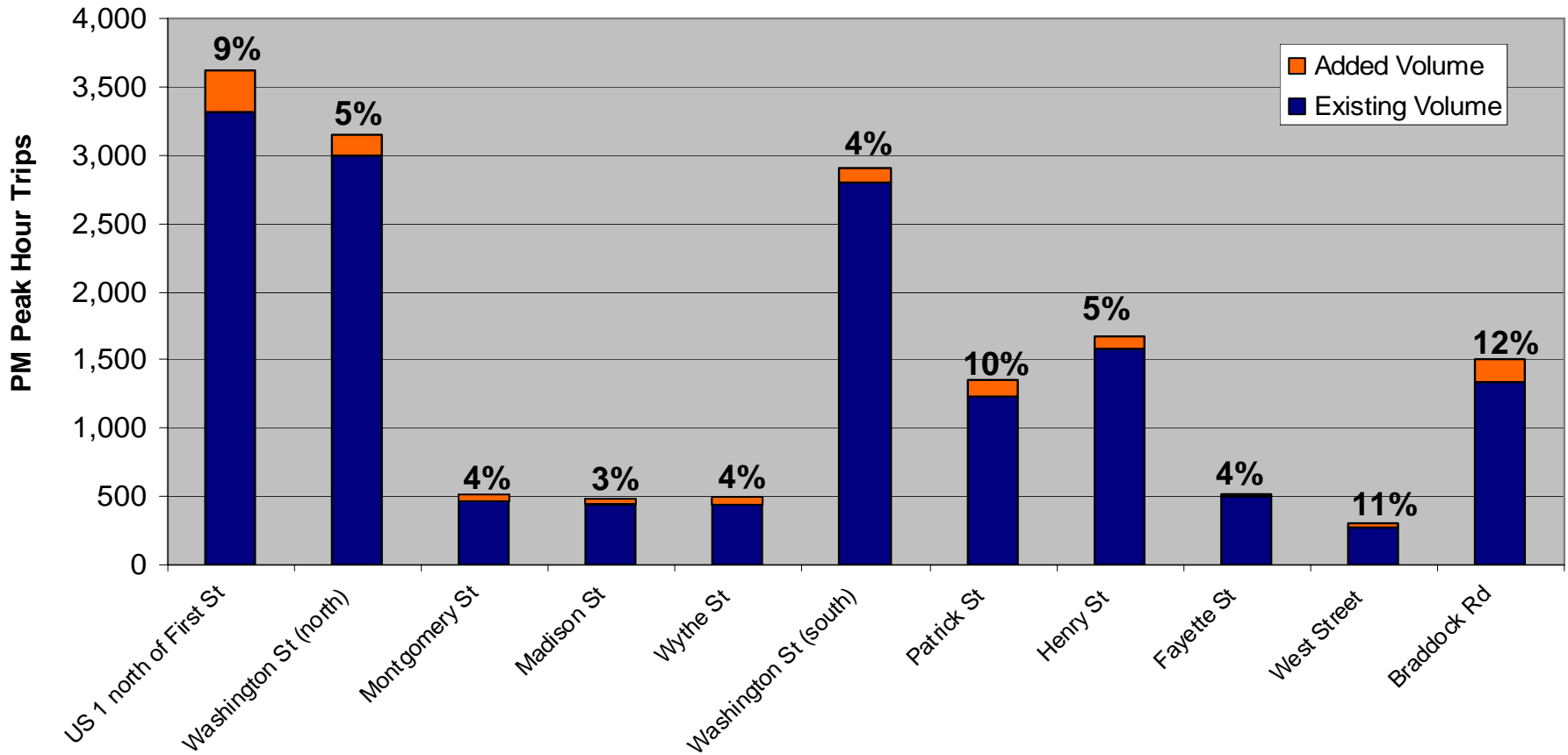


Trip Distribution Patterns for Traffic Generated by Future Development

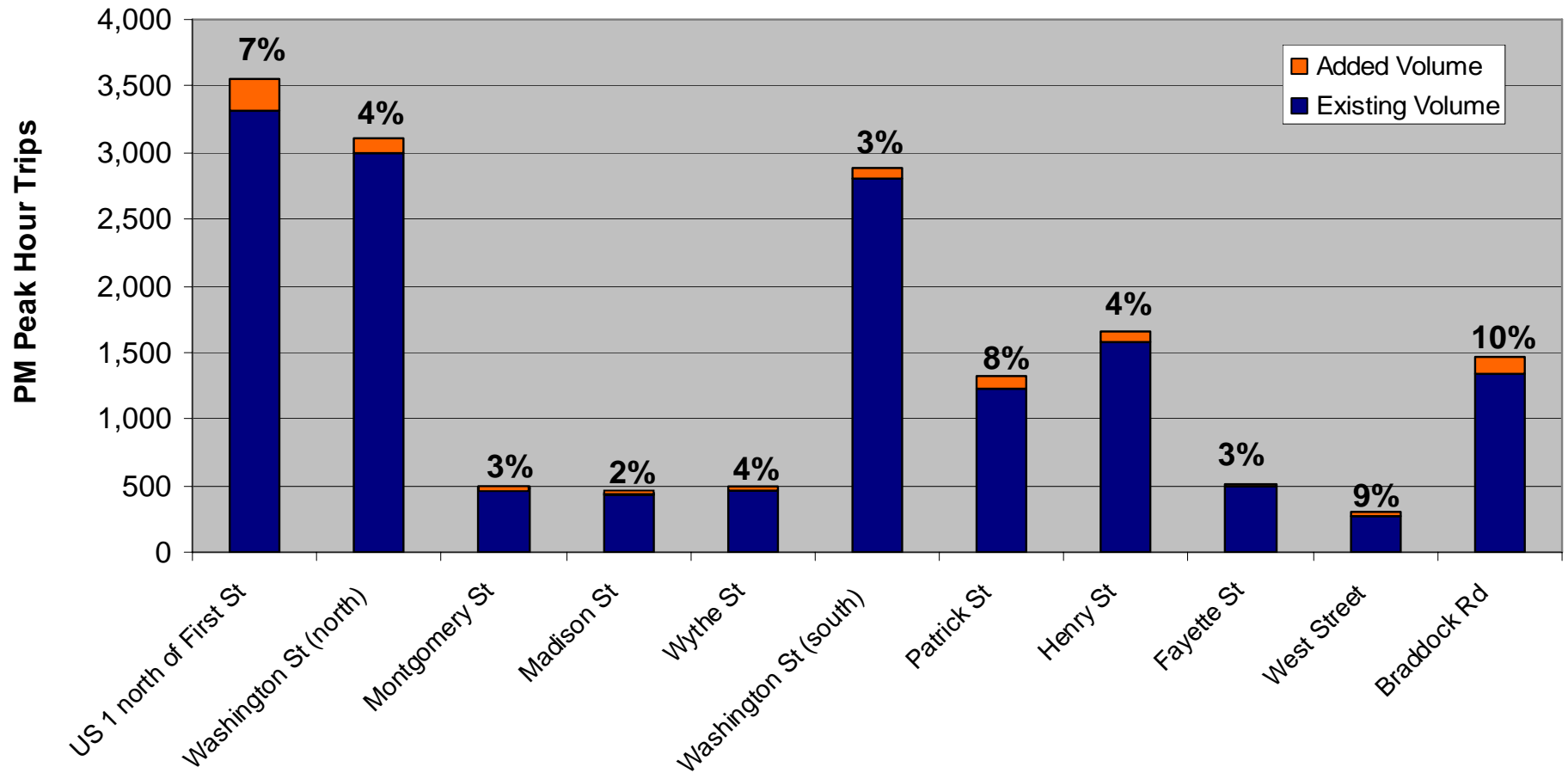
- **Relatively even distribution in all directions**
- **One-half of all trips oriented toward US 1**
 - 30% north
 - 20% south



Braddock Plan Traffic Impacts With Existing Auto-mode Share

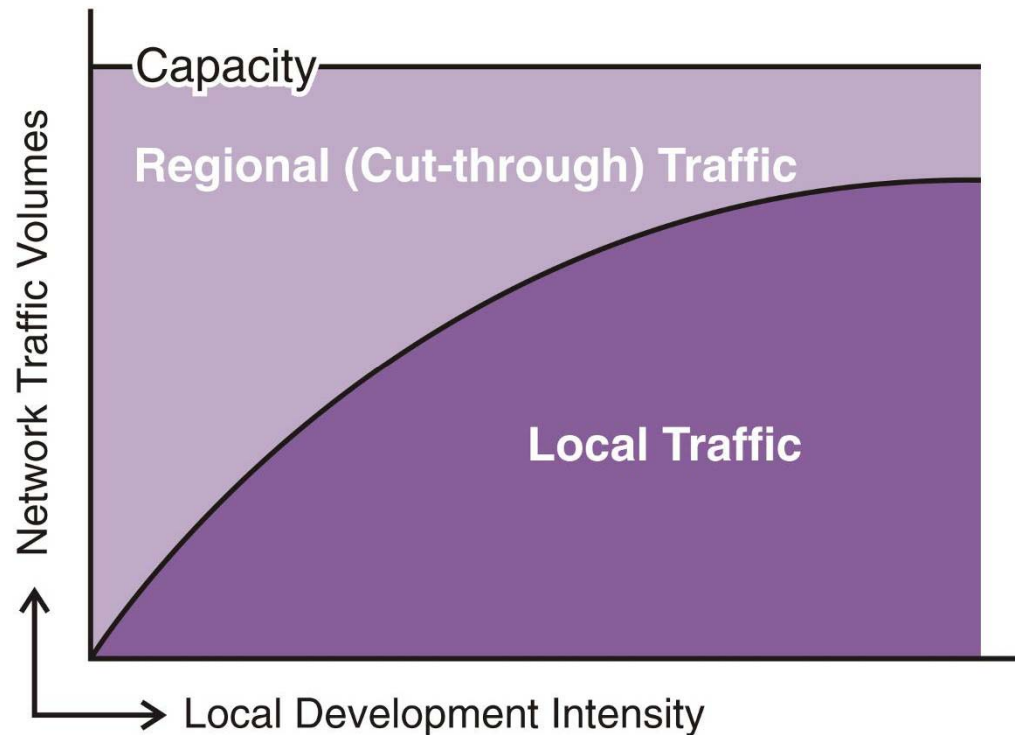


Braddock Plan Traffic Impacts With Reduced Auto-mode Share



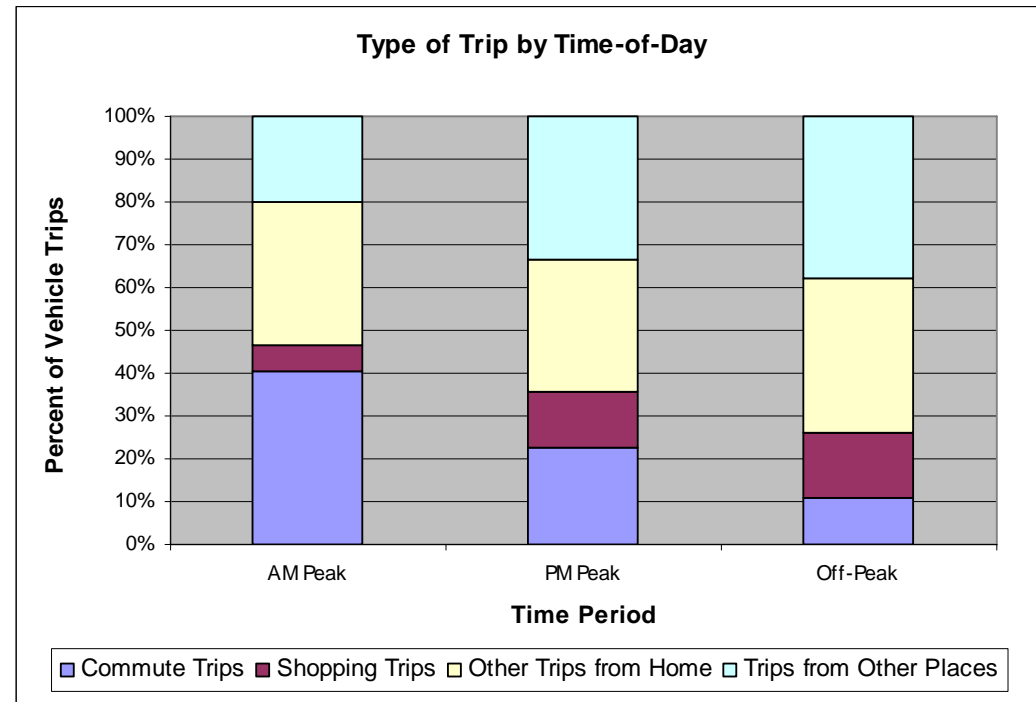
What does this assessment tell us?

- **Congestion on US 1 will continue**
- **20 year buildout of Braddock expected to increase traffic volumes on Route 1 by 7-10%**
 - Less than what is expected from background growth (.5 - 3% *per year*)
- **Local growth in a constrained network results in:**
 - “squeezing out” of regional trips
 - Peak hour spreading (extended duration of congestion)



How Can Transportation Demand Management Help?

- **Low-cost approach to maintaining mobility**
- **Promotes more efficient use of the transportation system & delays widening streets by:**
 - Encouraging carpooling/carsharing
 - Enhancing alternate modes
 - Mixing land uses for shorter trips
 - Managing the parking system
 - Encouraging off-peak travel
- **TDM should address all trip types with:**
 - Infrastructure & services
 - Programs & promotions
- **Over time, TDM results in people changing travel behaviors**
 - Portland, OR
 - Arlington, VA
 - Boulder, CO offer relevant examples of success



Based on 1995 NPTS Survey Data for Washington, D.C Region

Common TDM Infrastructure & Programs

■ Infrastructure

- High Occupancy Vehicle lanes
- Transit (Metrorail, Metrobus, DASH)
- Pedestrian facilities
- Bicycle facilities
- Shower, locker, storage facilities
- Vans
- “Flex Cars”

■ Programs

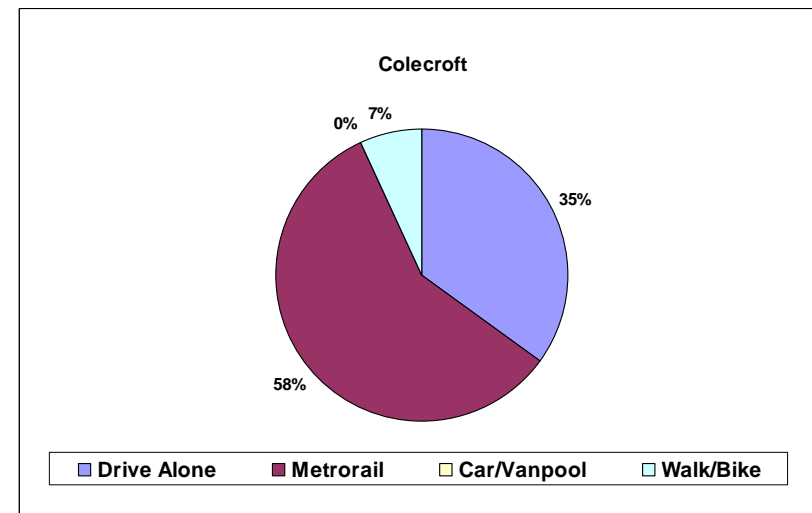
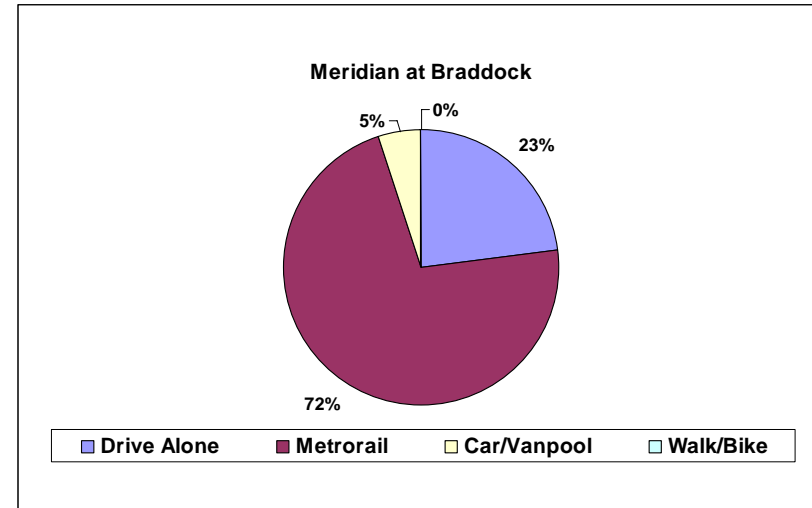
- Carpool / Vanpool matching
- Transit incentives
- Guaranteed ride home for non-auto commuters
- Parking Management (shared, unbundled, limited access)
- Car sharing access

■ Initially focused on employee commutes, must be expanded



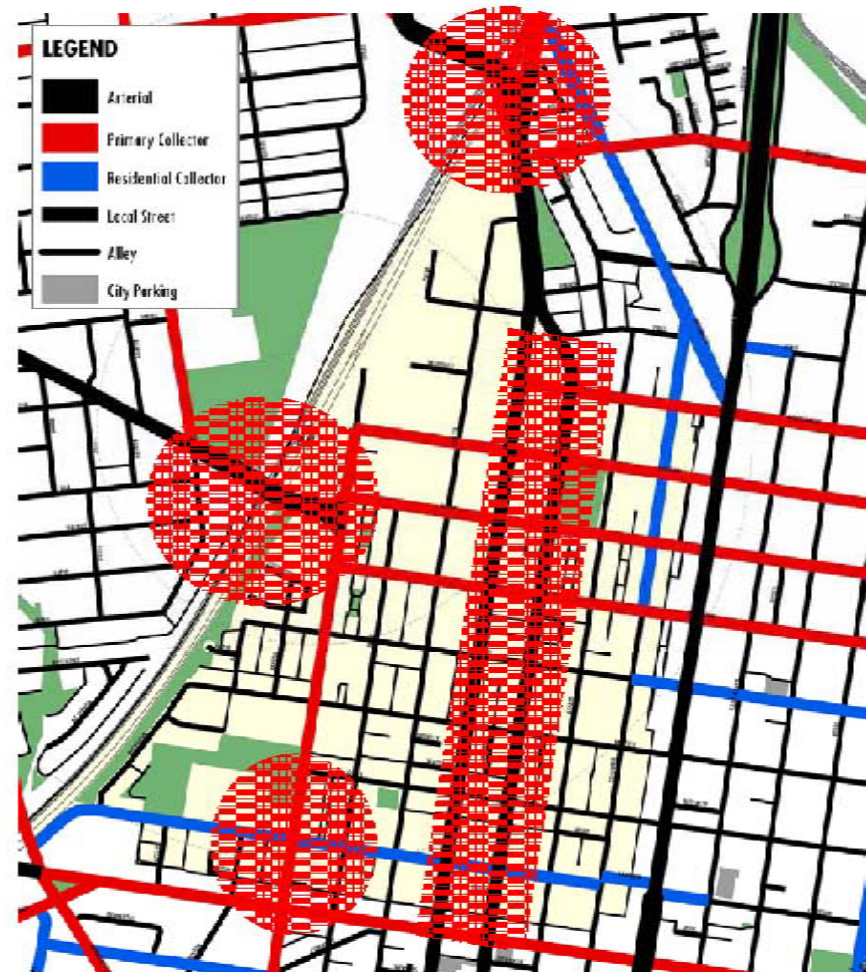
Alexandria's Current TDM Toolbox of Programs

- **Transportation Management Plans (TMP)**
 - Required for large-scale projects
 - Development-specific TDM program & funding
- **Program Assistance**
 - “Carshare Alexandria!”
 - 39% reduction in car ownership
 - Public Transportation Subsidy Program
 - Commuter Connections
 - Old Town Transit Shop
 - Telework Assistance
 - Bicycle Commuter Assistance & Bike Parking Improvements
 - Trip Planning Services
 - Local Motion web page & eNewsletter
- **Results**
 - 58% drive alone to work (national avg. @ 80%)
 - Increasing walking & bicycling to Metrorail
 - Decreasing parking & drop-off rates since 2002



Braddock Road Transportation Challenges

- Congestion on commuter routes
- Neighborhood impacts from congestion & cut-through traffic
- Mixed pattern of 1-way / 2-way streets
- Bottlenecks and constraint points for access
- Neighborhood parking constraints
- Barriers to pedestrian mobility & transit access
- Basic retail needs not met within the area
- Local and regional growth may add to impacts



Addressing the Challenges

- **Lloyd District in Portland, Oregon**

- **Constraints:**

- Limited points of access
- Commuters using key corridors
- Inability to widen roads
- Mix of one-way / two-way streets
- Limited transit
- Limited parking
- Anticipated local and regional growth

- **Conditions:**

- Transit commute mode split @ 10%
- Accessory parking provided at 3.5 stalls/1,000 SF
- No bike lanes or end-of-trip facilities
- Only transit investments anticipated

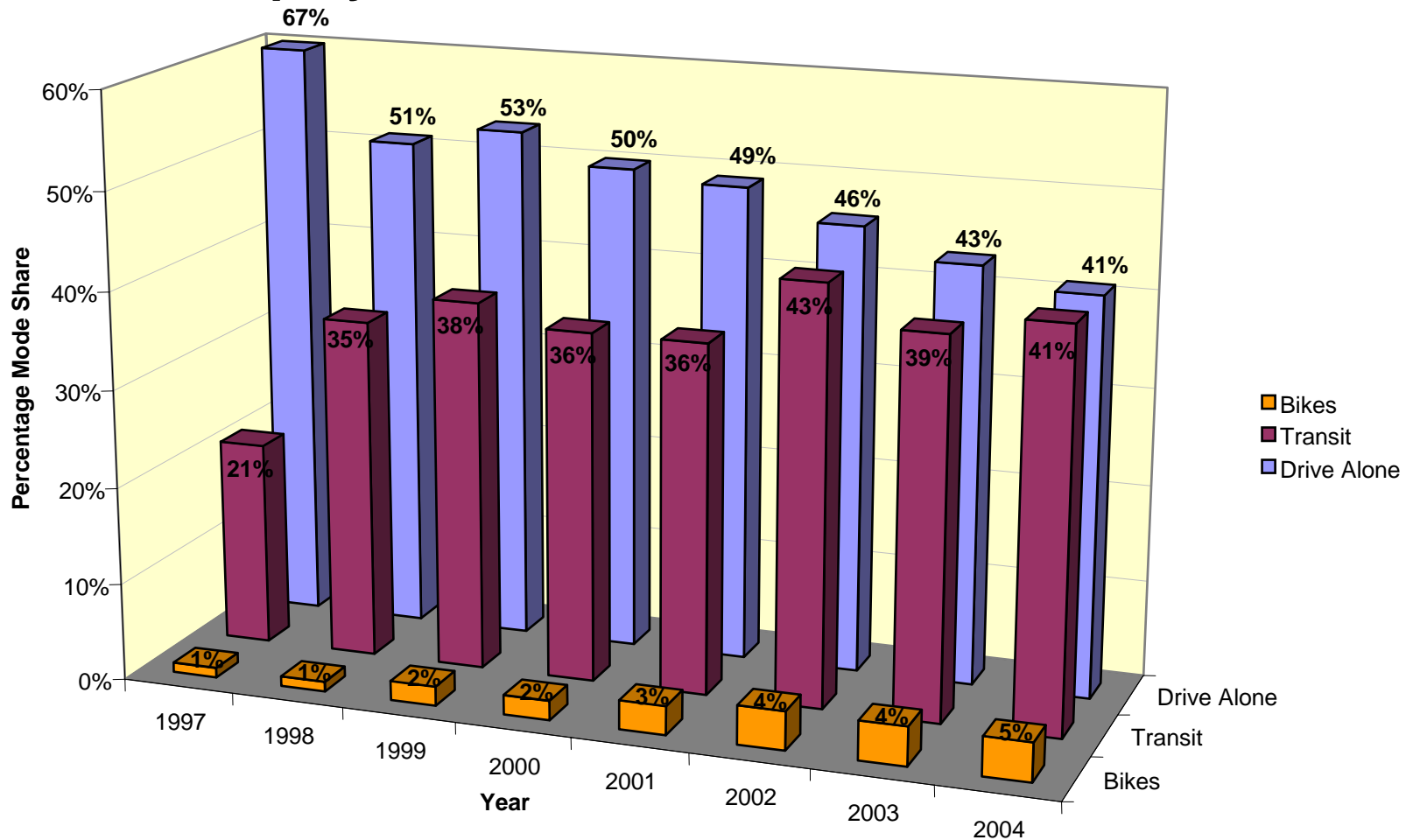
- **Expected Growth in District:**

- Near doubling of employment
- 200% increase in residential



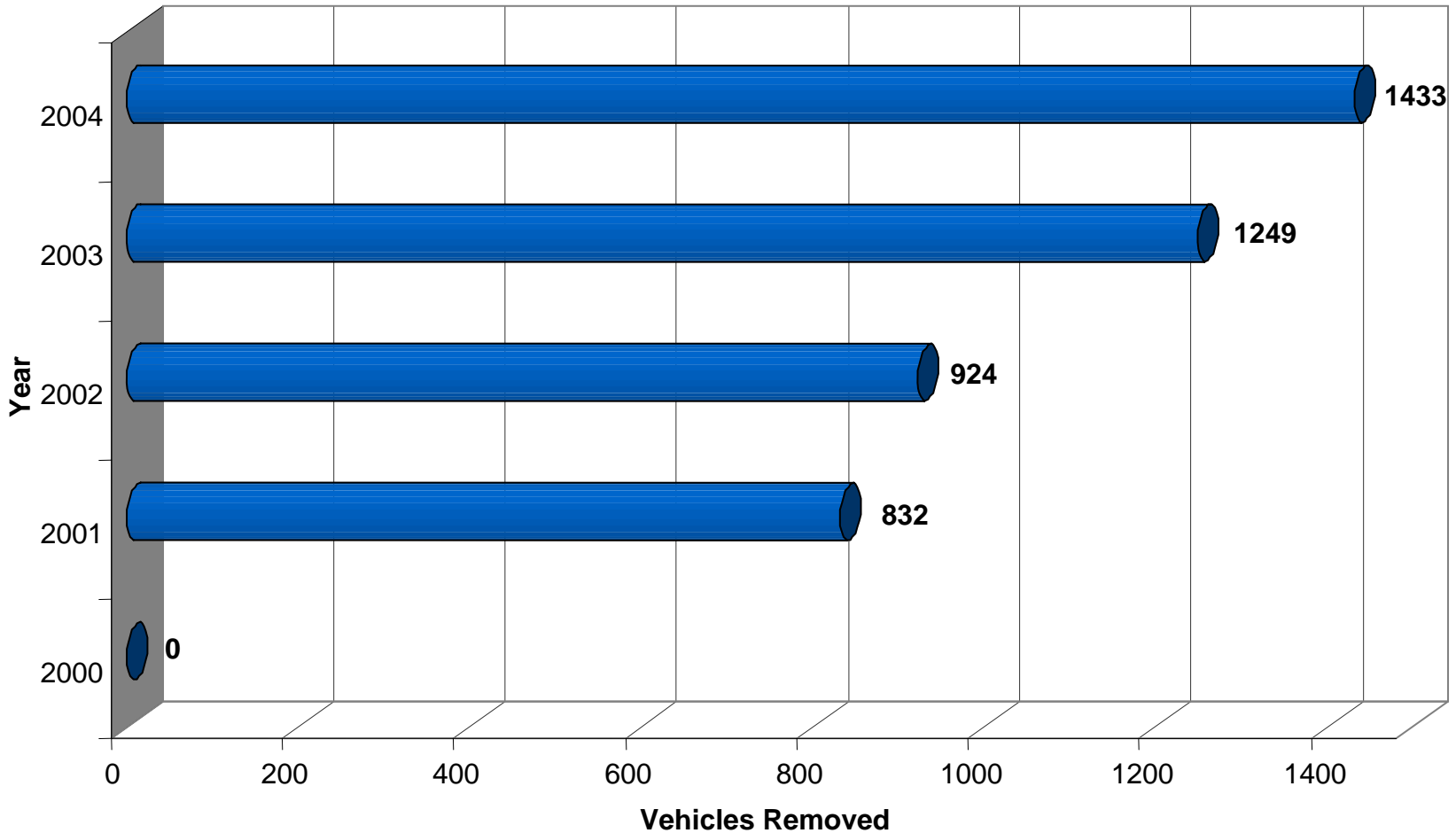
Lloyd District TDM Successes

- Resident/Employee commute modes since 1997:



Lloyd District TDM Successes

- **Vehicles removed during commuter peak hour**



The Organizational Structure

- **Established a Transportation Management Association (TMA)**
 - All stakeholders included
 - Initially staffed and subsidized by City
 - Vision, Goals, & Leadership provided by District representatives
- **Partnership Goals for Transportation Providers:**
 - Expand District access through transit
 - Provide aggressive TDM to make transit work
 - Invest in ped/bike improvements to complement transit access

come visit the
ONE-STOP
Transportation Shop

Transit Passes
SmartMeter cards
FlexCar registration
carpool registration

TRIP Planning + MaPS
A Place to Browse
Fun stuff

Pedestrian information
Bike locker rentals
Bike accessories

YES! At the
Commuter Connection

Store hours: Tue-Fri 11-4
700 NE Multnomah, Ste 340
www.tdma.com

You mean I can get all that in one place?

The Major TDM Tools Used

■ Transit Investments & Incentives

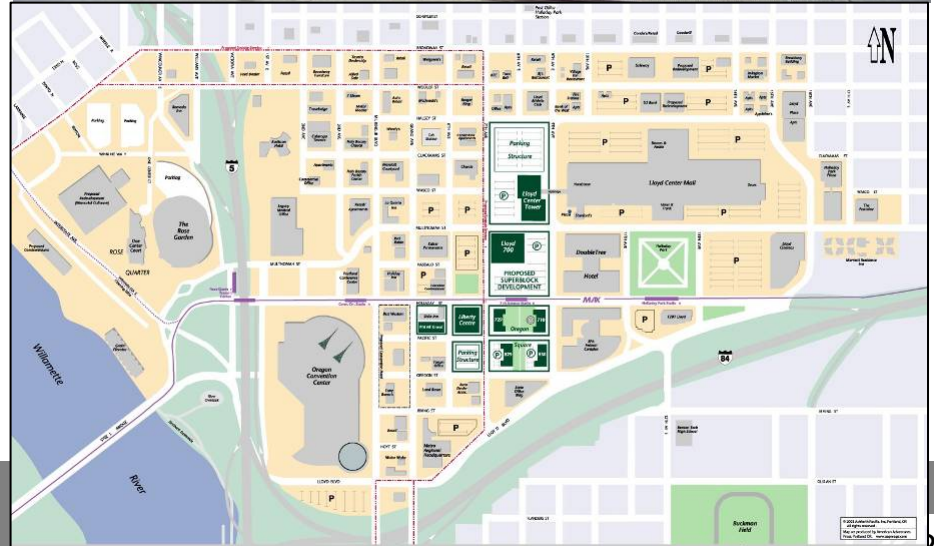
- Lightrail, stations, bus circulators
- Extension of “Fareless Square” from Downtown to Lloyd District
- Resident/Employee geo-coding for targeted bus routing
- Guaranteed ride home
- Volume discounts for monthly/annual transit passes

■ Pedestrian/Bicycle Improvements

- Bike lanes/boulevards, bike parking, shower/locker facilities, transit bike racks
- Streetscaping, illumination, crosswalk improvements, traffic calming

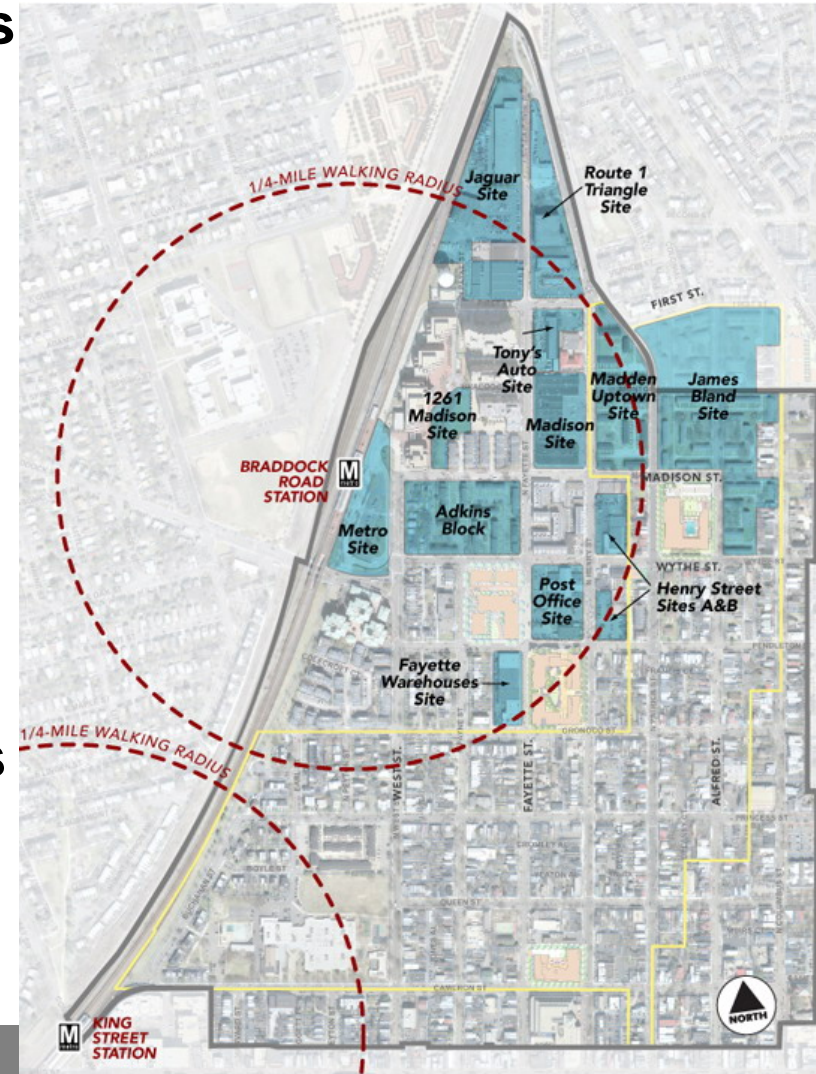
■ Parking

- Metered on-street system for better management
- Promoted shared-parking agreements among existing uses
- Converted to parking maximums from parking minimums
- Flexible standards to accommodate unique conditions



Using a TMA to Strengthen TDM in Braddock

- Puts local residents and businesses in the lead
- Emphasizes the importance of partnerships
 - Public-Private
 - Resident-Business
 - Developer-Tenant
- Provides strength in numbers
- Produces tailored programs & services
- More responsive to changing needs



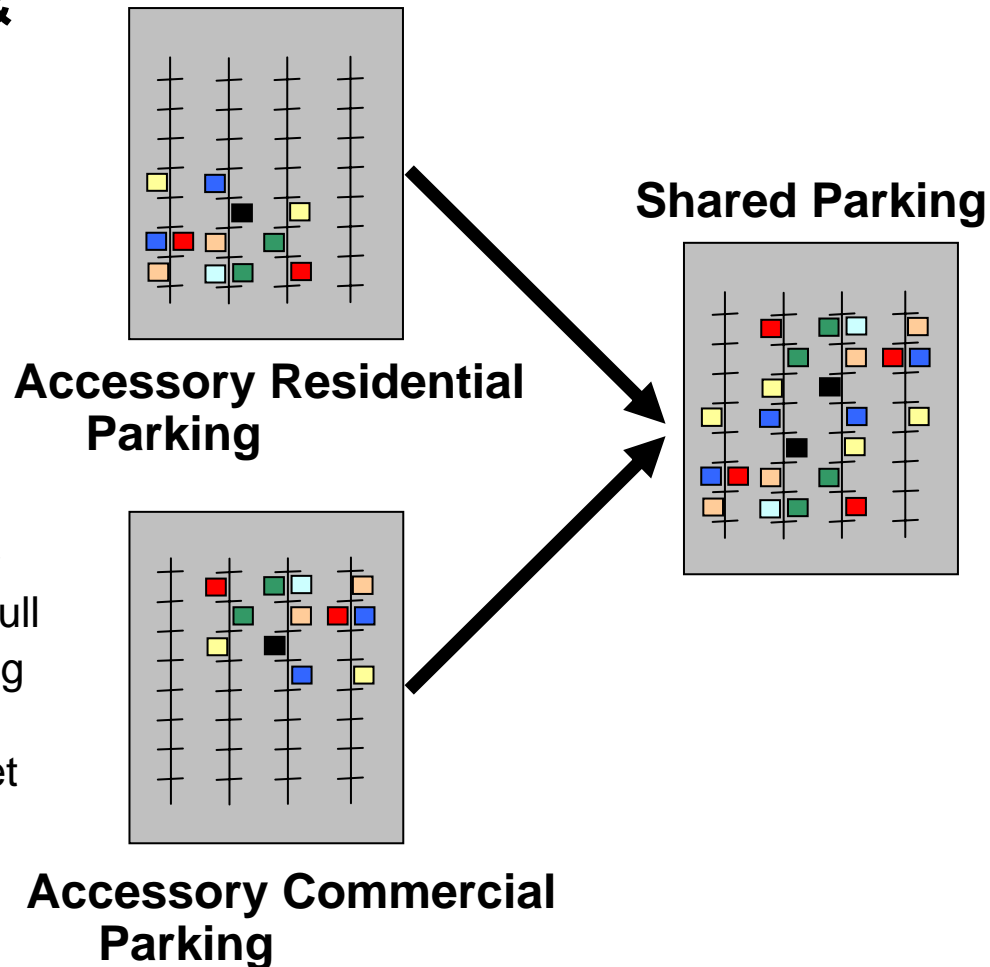
Suggested Additions to Existing TDM Programs

- **Expand Federal Public Transportation Subsidy (PTS) program to private sector**
 - Offers \$115/month in commute benefits
- **Revise Alexandria Transportation Management Plan (TMP)**
 - Manage funds and programs through district-wide TMA
 - Enhance residential participation
 - Finance strategies to achieve Association goals:
 - Discounted transit fare programs
 - Targeted shuttle bus service
 - Car sharing programs
 - Pedestrian facility improvements
 - Bicycle lockers and parking facilities
 - Administrative costs
- **Have TMP Consultant develop specific Braddock strategy**

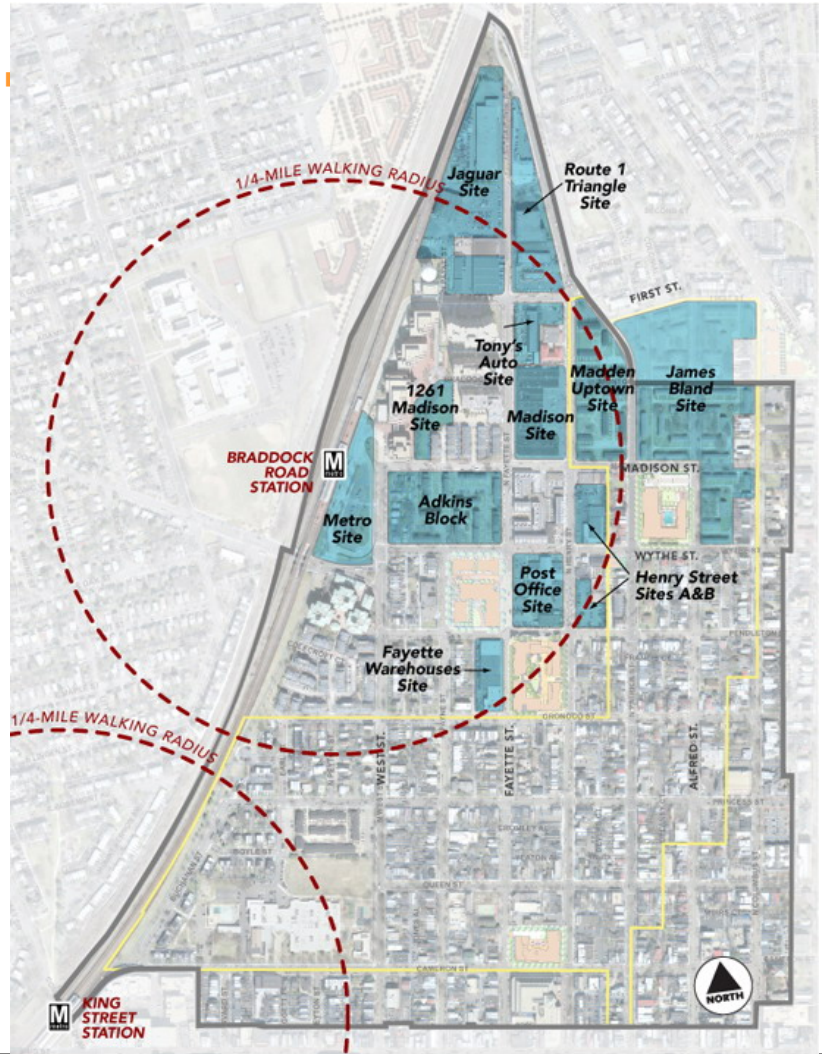


Right-Sizing Parking

- **On-street Spaces for residents & retail customers when needed**
- **Avoid over-supply**
- **Tailor supply to existing conditions**
 - Potomac Yards
 - Braddock Condos
 - Arlington
- **Results of Parking Studies**
 - Parker Gray Neighborhood with supply problems at some times of day - 85% full
 - Oversupply in on-site accessory parking
 - On-street restrictions are oriented to Metro riders and vary widely from street to street



Easy, Efficient, Reliable Transit

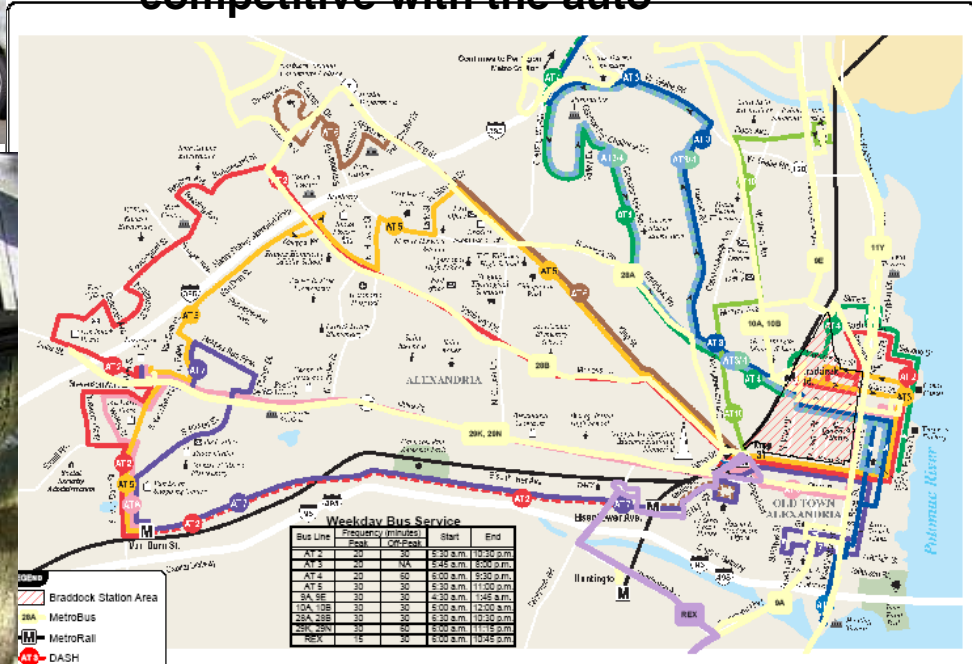


- Metrorail ridership up in Alexandria 11.74% since 2002, 2nd highest (behind DC at 17.14%) for all Metro Washington
- Improve efficiency and frequency of connections to rail system and area destinations

Easy to Understand & Convenient Transit Options



- **Transit ridership is steadily increasing**
 - Metrobus up 30%
 - Dash reached 3,743,499 in FY2007
- **Frequent and convenient “loop” service for neighborhood trips**
- **Predictable, direct & fast for longer trips**
- **Good information and time/cost competitive with the auto**



Rosslyn-Ballston Corridor, Arlington, VA Pedestrian Route Plan

WALKArlington Proposed Pedestrian Routes

The WALKArlington report identifies several different kinds of pedestrian routes in order to respond to the diverse development conditions in the Rosslyn-Ballston Corridor and "to the many reasons people walk there."



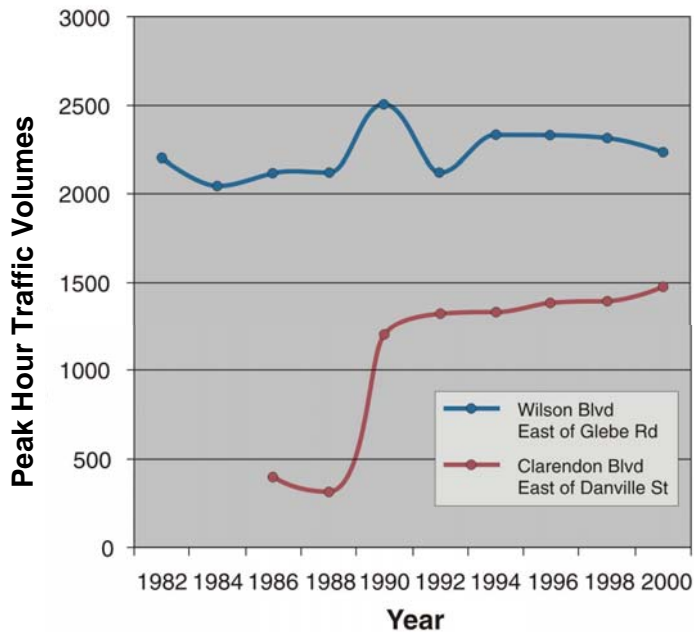
Rosslyn-Ballston Corridor, Arlington, VA Results

- **TDM Policy implemented in 1990**

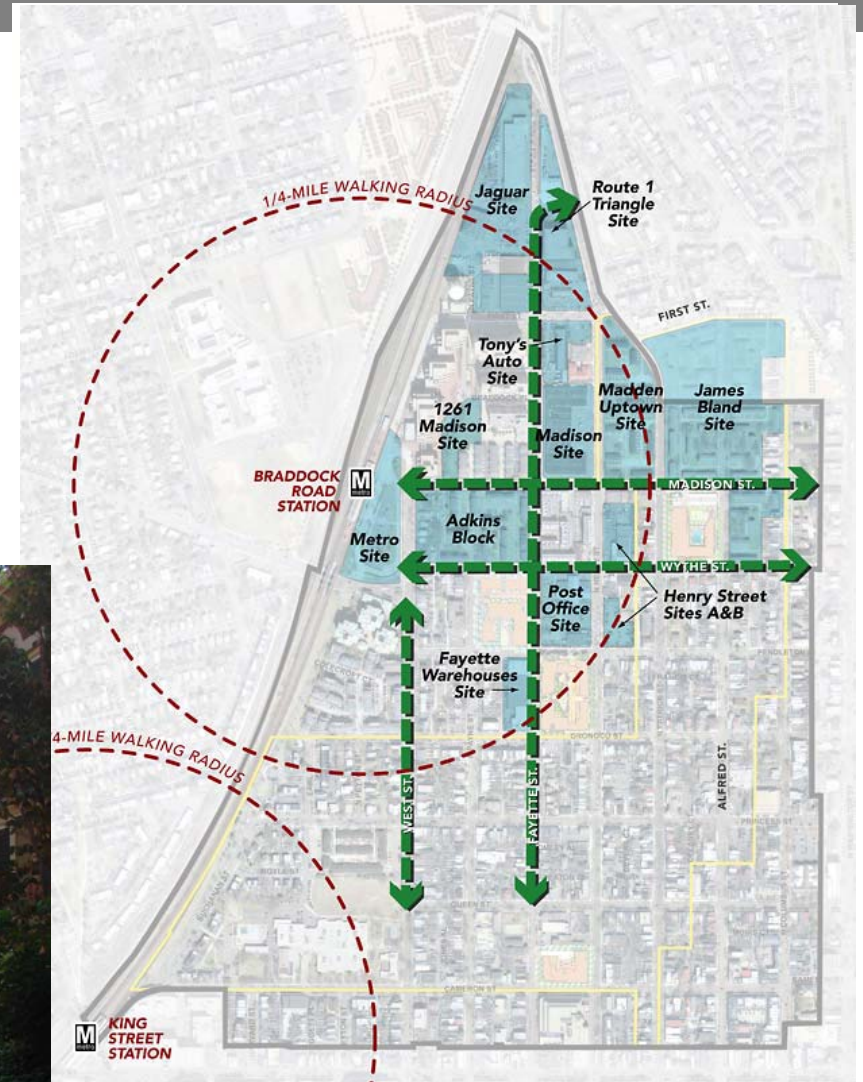
- Requires developers to implement and fund TDM

- **Non-auto mode share 60%**

- **Flat daily traffic growth on major streets**



Expanding Braddock's Walkable Street Network



Enhancing street safety and "walkability"



Pedestrian & Bicycle Mobility Plan

Boulder, CO TDM Tools & Results



- **City-wide program began 1989**

- Welcoming public realm
- Ubiquitous bike accommodation
- Frequent, comfortable transit service
- Branded & marketed bus routes
- Student Transit Pass

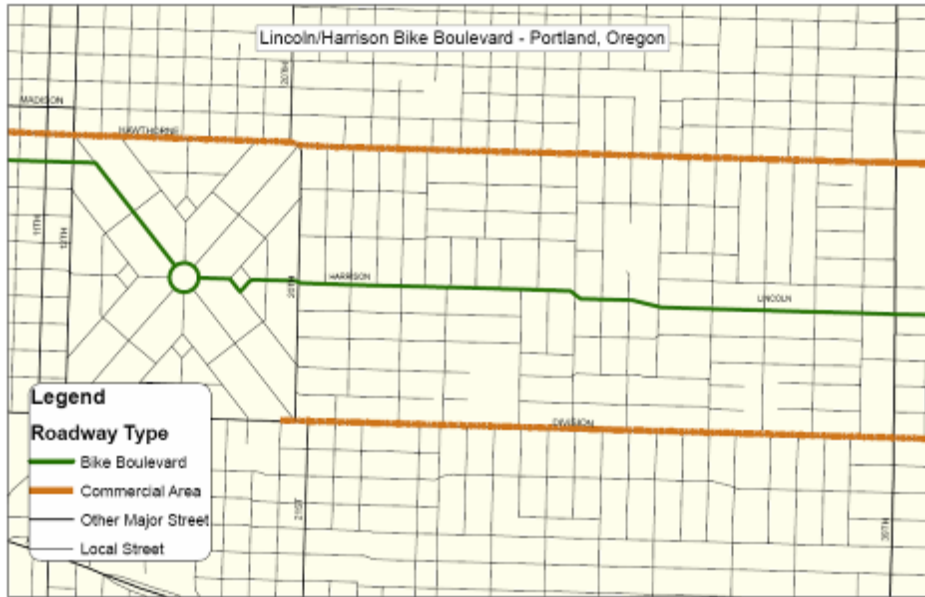
- **32% of all trips are non-motorized**

- **60% of residents own bus passes**

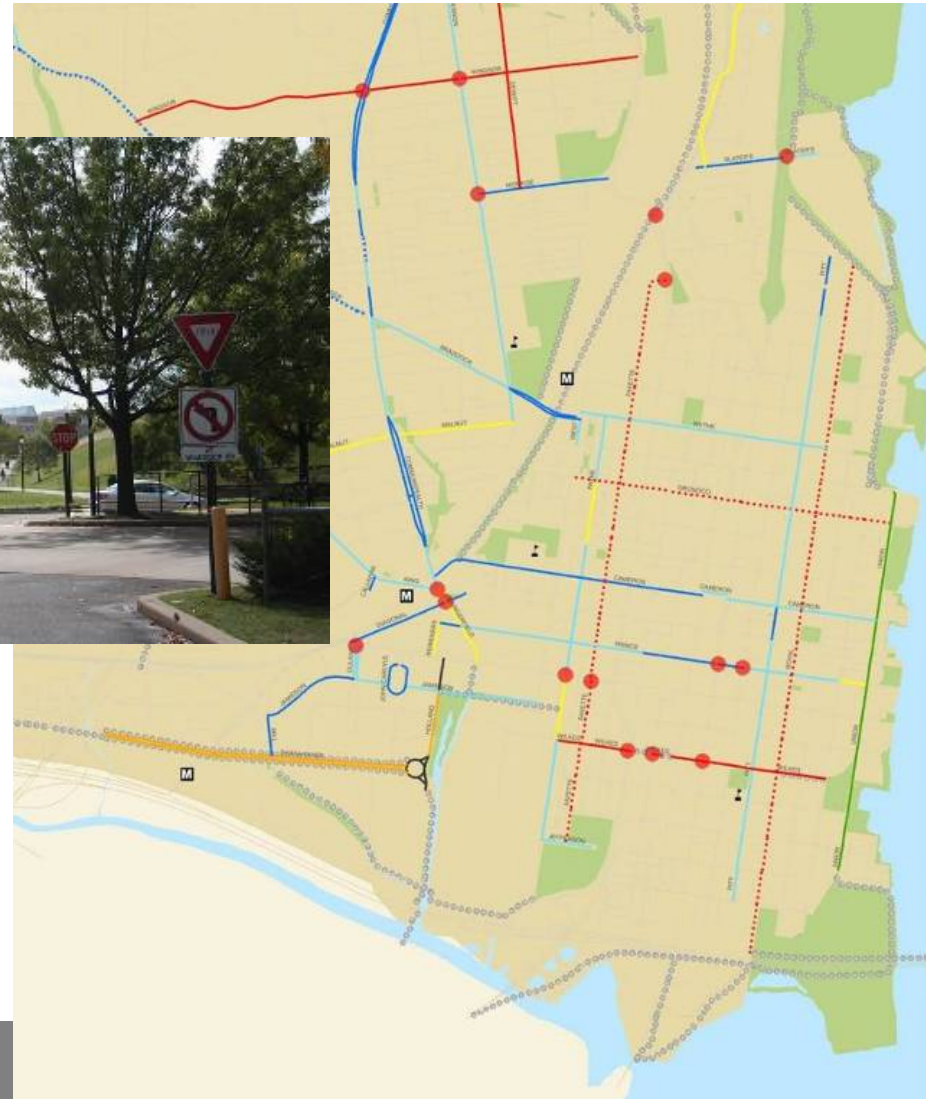
- **SOV trips down 17%**



Bicycle Routing and Network Building



Expanding Bicycling Accommodation in Braddock



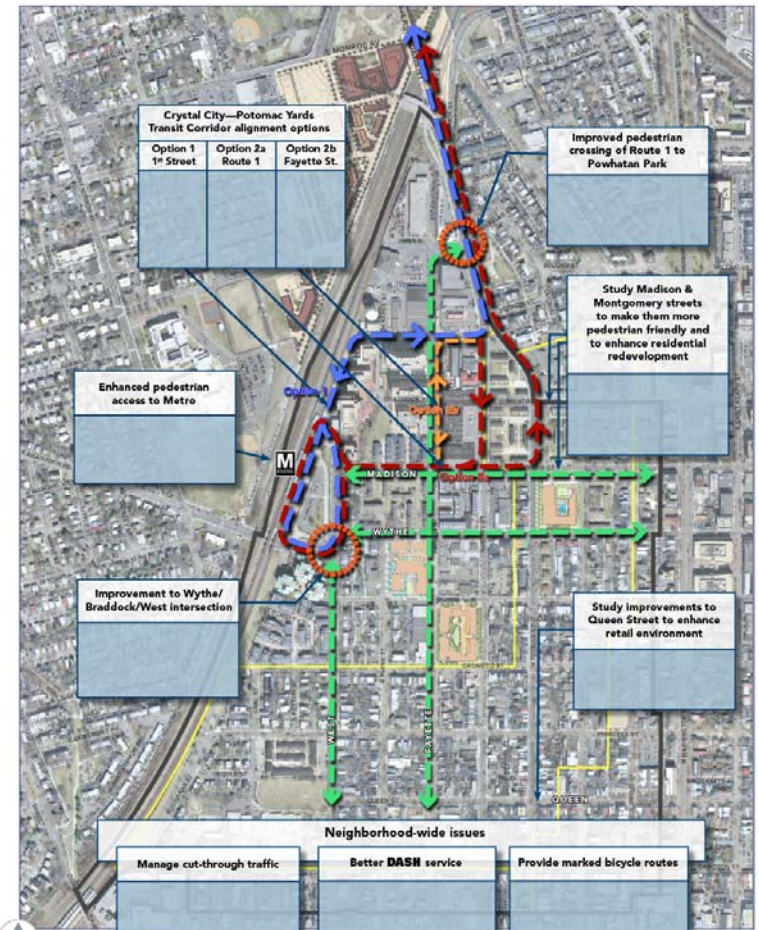
Transportation Improvement Opportunities



Transportation Improvement Options



Transportation Improvement Priorities



Braddock Metro Neighborhood Plan

City of Alexandria, Department of Planning & Zoning
www.alexandriava.gov/planningandzoning 703.838.4666