Braddock Metro Neighborhood Study
Transportation Education

October 29, 2007

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Presentation Overview

- **Travel Trends**
- **Basics of a Complete System**
- **Travel Characteristics in Braddock, Parker-Gray, Rosemont, & Del Ray, Old Town, Northeast Neighborhoods**
- **Traffic Conditions & Planned Improvements**
- **Transportation Resources & Their Management**
  - Parking Pricing & Regulations
  - Offering Travel Options: Transit, Bicycle, Pedestrian
  - User Communication & Incentives
  - Design for Pedestrians

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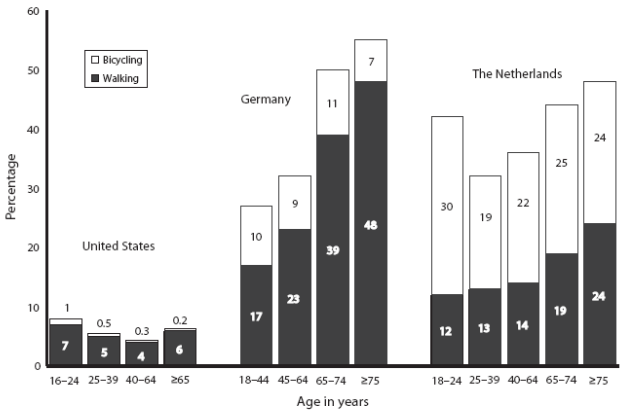
Non-Motorized Travel by Country



Source. US Department of Transportation,[11] German Ministry of Transport,[14,15] and Statistics Netherlands.[19]

FIGURE 2—Percentage of trips in urban areas made by walking and bicycling in the United States, Germany, and The Netherlands, by age group, 1995.

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National Trip Purpose Data

Trip Statistics by Trip Purpose, 2001 NHTS

Trip purpose	Share of Trips	Share of Vehicle-Miles Traveled	Trip Length (miles)	Trip Duration (minutes)
To/from work	**22.1%**	**27.0%**	**12.1**	**22.3**
Work-related business	**4.1%**	**8.4%**	**20.3**	**30.9**
Shopping	**21.1%**	**14.5%**	**6.7**	**14.4**
Other family/personal business	**24.7%**	**18.7%**	**7.5**	**15.2**
School/church	**4.9%**	**3.7%**	**7.5**	**15.8**
Medical/dental	**2.2%**	**2.2%**	**9.9**	**20.7**
Vacation	**0.4%**	**1.8%**	**47.4**	**59.6**
Visit friends/relatives	**6.3%**	**9.4%**	**14.9**	**24.4**
Other social/recreational	**13.7%**	**13.2%**	**9.6**	**18.2**
Other	**0.5%**	**1.0%**	**18.1**	**31.4**
All	**100.0%**	**100.0%**	**9.9**	**18.7**

Source: **Generated from the National Household Travel Survey website**

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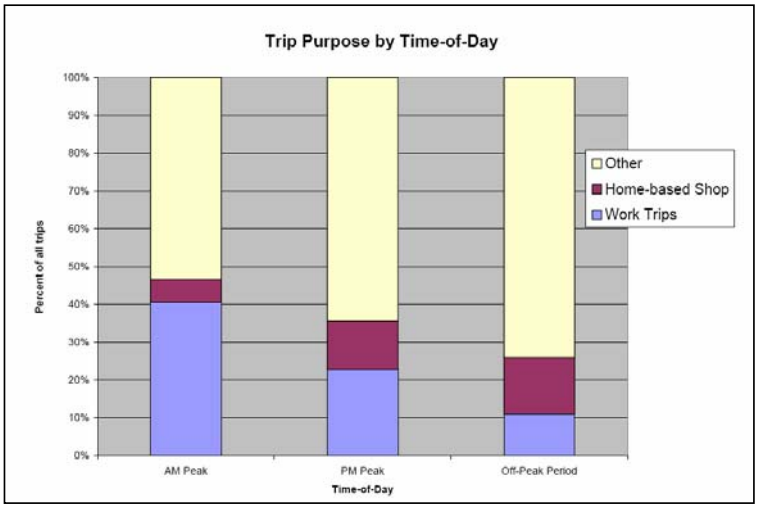
Regional Trip Purpose by Time-of-Day



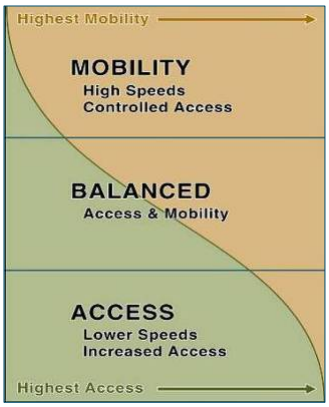
Based on 1995 NPTS Survey Data for Washington, D.C Region

Basics of a Complete System

- **Streets**
- **Transit**
- **Off-road Paths**
- **Parking**
- **Planning & Regulation**
- **Users: Travelers and Neighbors**

Traditional Traffic Engineering Classification

- Guides street design, speed, and access
- Creates hierarchy
- "Level of Service" is based on the automobile and truck modes
- Creates the roadway character
- Only the start of planning



Freeways

Major Arterials

Minor Arterials

Collectors

Minor Collectors

Local Streets

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"Great streets make great places"

- Recognizes a street as a public space…reflects community values

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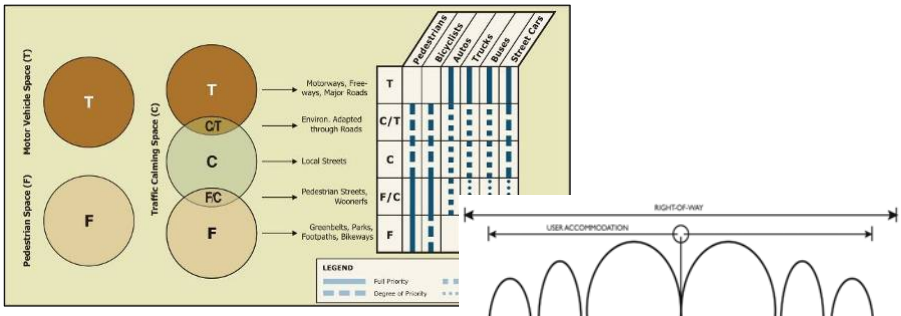
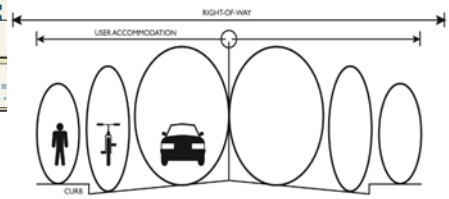
Evolving Street Classifications

- **Understand priority user needs**
- **Recognize neighborhood character or context**





Source: MassHighway

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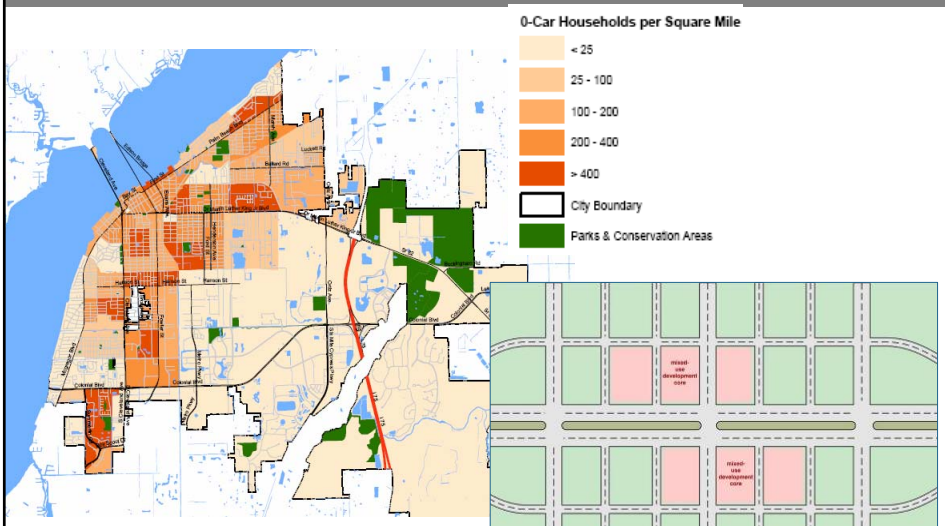
Connected network that keeps local streets local



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Parking in Mixed Use Areas

- **Provides a Form of Access**
  - Integral part of auto system (mode converter)
- **Serves Various of Uses & Users**
  - Priority user type matters in mixed zones
- **Supports Economic Activity**
  - On-street spaces generate $75+ daily retail revenue
- **Affects Livability/Quality of Life**
  - Positively or negatively, depending on management/maintenance/location
- **Affects Trip Making & Mode Choice**
  - Excess parking can promote auto use
  - Park Once: constrained parking can result in more linked trips

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Transit Mode Comparison

	Commuter Rail Transit	Heavy Rail Transit	Light Rail Transit	Modern Streetcar	Heritage Trolley	Dedicated Lane BRT	Express Bus
Projected Costs per Mile	$3-$25 Million*	$50-$250 Million	$20-$60 Million ($56)^	$10-$25 Million	$2-$12 Million	$4-$40 Million	$1-$2 Million
Service Type:	Regional, Intraurban	Regional, Urban	Regional, Urban	Urban Circulator	Urban Circulator	Regional, Urban	Regional, Urban
Operating Speed:	30-60 MPH	50-80 MPH	20-60 MPH	8-12 MPH	8-12 MPH	20-40 MPH	15-19 MPH
Distance Between Stations:	2-5 Miles	Urban Core >1 mile Periphery 1-5 miles	~1 Mile	0.25 Miles	0.25 Miles	0.25-2 Miles	Limited stops along normal bus routes
Service Frequency:	20-30 Minutes	5-10 Minutes (Peak)	5-30 Minutes	8-15 Minutes	8-15 Minutes	8-20 Minutes	10-20 Minutes
Alignment:	Generally built on existing tracks at grade street crossings	Separate Right of Way	Aligned center or side of street corridor on separate ROW	In Street with traffic, no grade separation	In Street with traffic, no grade separation	HOV lanes or separated right of way in median or on curb	In Street with traffic
Right of Way Width:	37+ Feet	25-33 Feet	19-33 Feet (Double Track) 11-13 Feet (Single Track)	19-24 (Double Track) 11-13 (Single Track)	19-24 (Double Track) 11-13 (Single Track)	12 (Pittsburgh Single) 28 (Pittsburgh Double)	Street Width
Turning Radius:	140-460 Feet	330 Feet	50-100 Feet	40-80 Feet	40-50 Feet	40-70 Feet	33-46 Feet
Vehicle Length:	150-500 Feet Engines & Coaches	40-70 Feet per car, up to 10 car trains	50-80 Feet per car and up to 4 car trains	35-60 Feet	35-50 Feet	30 -50 Feet	30-50 Feet
Typical Power Source:	Diesel	Electric	Electric	Electric	Electric	Diesel, Electric	Diesel
FRA Compliant:	Yes	No	No	No	No	N/A	N/A

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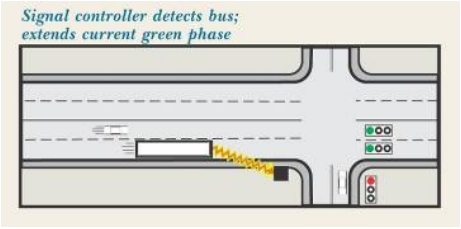
From Reconnecting America's Transit Technologies Worksheet
http://www.reconnectingamerica.org/public/download/transittech/

Urban Transit Street and Traffic Operations

- **Mixed-traffic & Exclusive ROW can fit context**
- **Communications technology improves schedule adherence**



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Attractive, Quiet, Clean Vehicle Types

- **Electricity & natural gas fuels new vehicles to reduce noise and pollution**

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Customer Communication and Comfort

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Life Cycle Mobility

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Bicycle Networks on and off road

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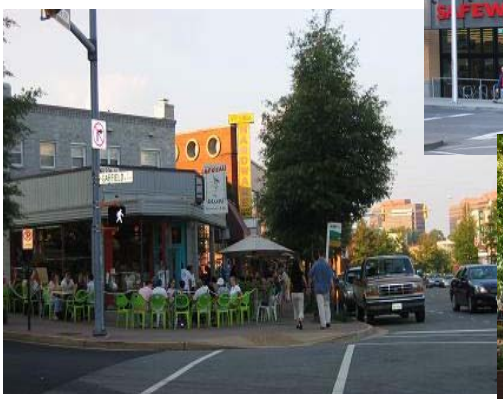
Planning for Walking



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Connections & uses that activate the street

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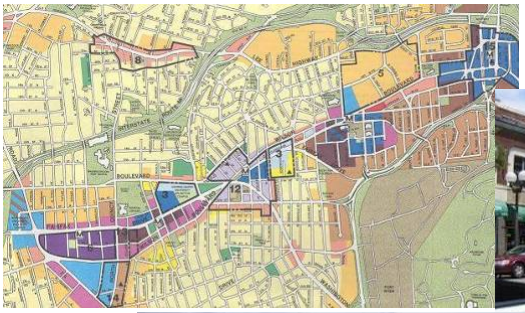
Planned growth with transportation support



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Current Travel Behavior Trends

- **Driving alone and transit has increased**
- **Carpooling is declining**

Alexandria Commute Mode Trends: 1990-2006

	1990	2000	2006
Total	71,809	77,190	82,548
Drive Alone	*59.1%*	*62.8%*	*63.5%*
Carpool	*15.6%*	*13.2%*	*9.2%*
Transit	*17.9%*	*16.4%*	*20.5%*
Other	*7.4%*	*7.6%*	*6.7%*

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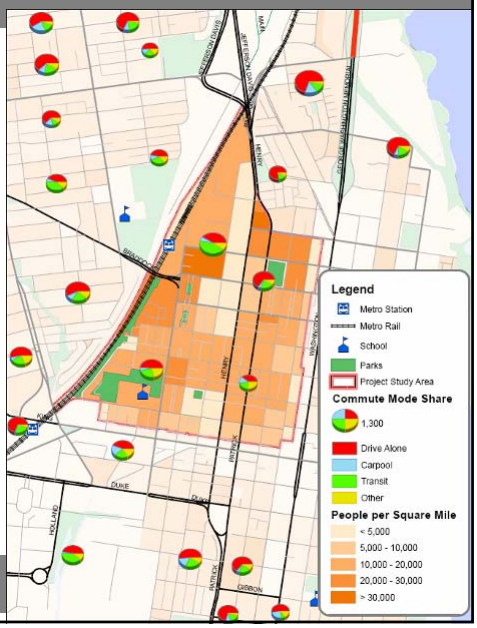
2000 Census Commute Travel Mode

- **Residential Densities are higher east of the station**
- **Driving alone decreases closer to station and on the east side**
- **Transit share is higher there**



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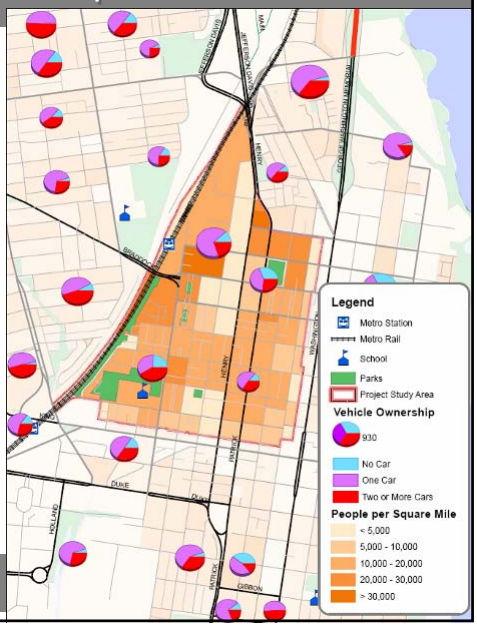
2000 Census Vehicle Ownership

- **Many households are carless, particularly those proximate to the station.**
- **While one car households are significant, many transit accessible households have two or more cars.**
- **Two+ car households are generally lower adjacent to the station.**



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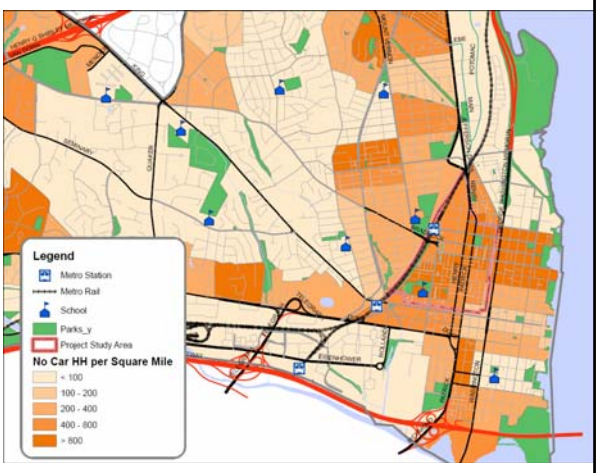
Concentrations of No-Car Households

- **Concentrations of carless households are located east of thes station, in Old Town and North of Duke St.**
- **Some of this may be due to locations of employment zones**



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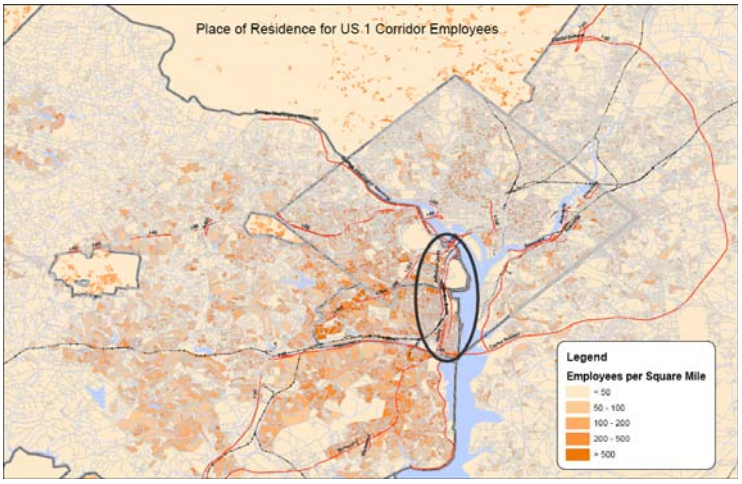
Worker Commute Patterns



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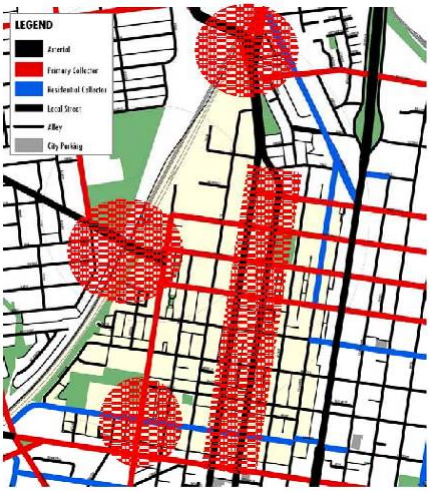
Network Observations

- **Barrier points of entry/exit**
- **Competing needs along US 1**
- **East-west movements less constrained**
- **Grid pattern of local streets**



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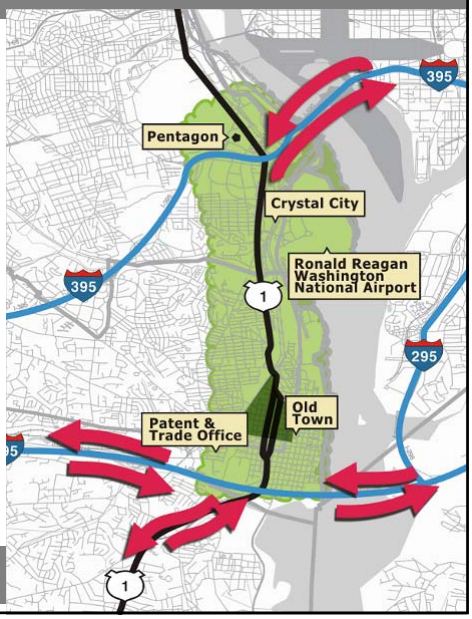
Regional Conditions

- **Natural and physical barriers constrain travel options**
- **Major destinations along Route 1 corridor**
- **Beltway heavily influences traffic conditions along Route 1**
- **No alternatives to US 1 for regional traffic**



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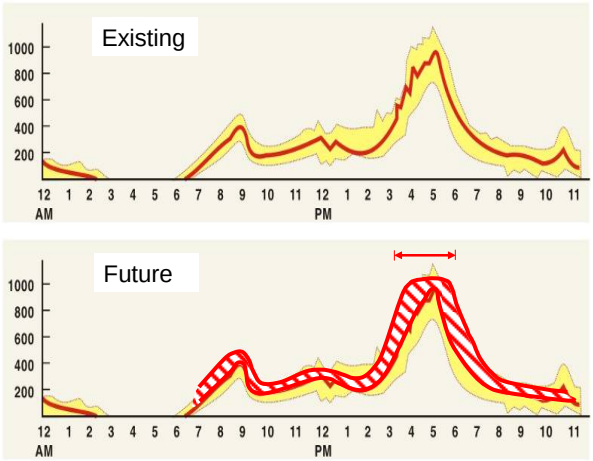
Effects of growth on hourly traffic flow

- **Limited growth in traffic volumes on US 1 in recent years**
- **Increases in demand result in "peak spreading"**
  - Commute periods begin earlier and end later
- **Growth likely will result in a *longer, less reliable* peak period**

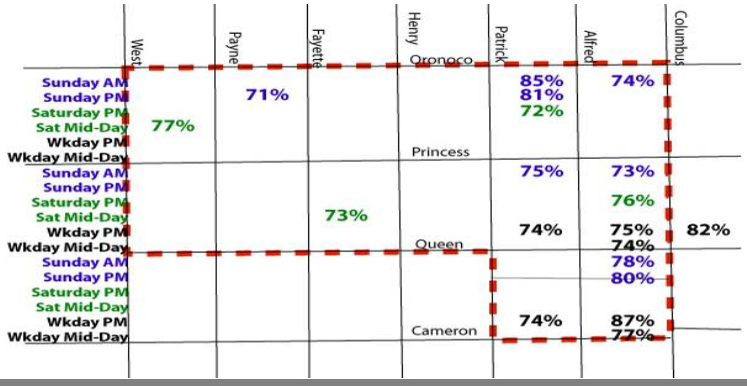


Managing Traffic Impacts of New Development

- **Minimize impacts during peak periods:**
  - Accessible transit
  - Walkable
  - Promote uses that contribute to off-peak or reverse commute patterns
  - Incentives to reduce single-occupancy travel during peak periods
- **Traffic Management Tools:**
  - Signal timing
  - Access management
  - Peak period restrictions
  - Traffic calming measures

Existing Parking Conditions

- **Recent study suggests some on-street parking is approaching its capacity (85% full)**



Providing Adequate Parking & Access

- **Achieve Greater Efficiency of the Existing Supply**
  - Reduce time-stay limits (increases capacity without new spaces)
  - Provide more on-street, where possible
  - Increase meter enforcement
  - Increase permit zone enforcement
  - Promote shared parking opportunities
- **Provide Alternative Means of Access**
  - Increase mix of uses (converts auto trips to walking trips)
  - Increase transit service
  - Improve pedestrian/bicycle facilities

Transportation Demand Management

- **Usually designed to reduce work trip travel by SOV**
  - Employee databases for carpooling
  - Transit incentive programs
  - Guaranteed ride home for non-auto commuters
  - Limits on employee parking availability (Petersburg story)
  - Shower, locker, bike storage facilities for employees
  - Unbundling of parking costs to tenants
  - "FlexCar" access for business-based activities
- **Can also accommodate planned, non-work trips**
  - FlexCar available 24/7
  - Transit passes work 24/7

TDM - Best Policy Practices

- **Development policies to protect & expand access**
  - Flexible standards that promote integration of new and existing uses
  - Code that responds to and reflects existing character
  - Program & project options to enhance alternative modes
- **Land use policies that promote mixed use**
  - Reduce trip length to support ped/bike/transit trip-making
  - Enliven and revitalize – Activates the street, increases safety
- **Transportation policies that optimize multimodal effectiveness**
  - Context-based design parameters
  - Multimodal performance standards
  - Parking standards that complement transit goals

TDM - Existing Conditions

- **Federal Public Transportation Subsidy (PTS) program**
  - Offers $105/month in commute benefits
- **Transportation Management Plan (TMP)**
  - Qualifying development projects contribute to TMP fund
  - Finances strategies to use public transportation, including:
    - **Discounted fare media**
    - **Shuttle bus service**
    - **Registration fees for car sharing**
    - **Bus shelter maintenance**
    - **Bicycle lockers and parking facilities**
    - **Administrative costs**

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TDM - Strategies

- **Expand Public Transportation Subsidy**
  - Private organizations also eligible
- **Strengthen Transportation Management Plan Program**
  - Require monitoring/reporting/refinement
- **Promote "live-where-you-work" programs**
  - TMP financial incentives to residents/employees with non-auto commutes
- **Transportation Management Association**
  - Strong business, residential, public partnership
- **Promote and financially support alternative modes**
  - Build on existing base of walking and bicycling

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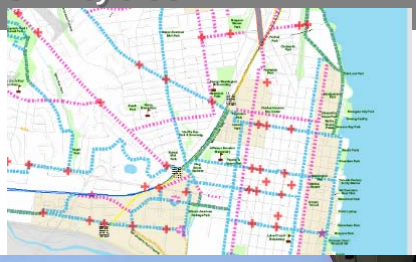
Enhance Non-Auto Systems: Bicycles



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Enhance public transportation investment

- Metrorail service characteristics

- **Metro & Dash transit function and service characteristics**

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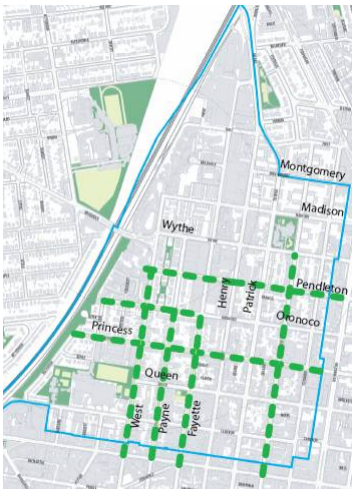
Enhance Walkability



Highly-Walkable Parker Gray Streets

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Build on Alexandria's walking tradition

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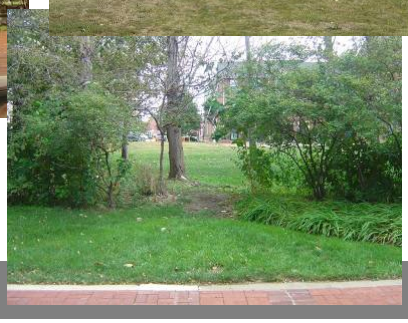
Connections to preserve & enhance



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"Building neighborhoods from projects"

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Questions?

Contact Information:
Kittelson & Associates, Inc.
36 South Charles Street, Suite 1920
Baltimore, MD 21201
p: (410) 347-9610

Yolanda Takesian, Associate Planner
ytakesian@kittelson.com

Brandon Nevers, PE, Associate Engineer
bnevers@kittelson.com