



Washington Metropolitan Area Transit Authority

# Transit Today, Tomorrow, and Beyond: There's More to it than Metrorail

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StreetsCamp

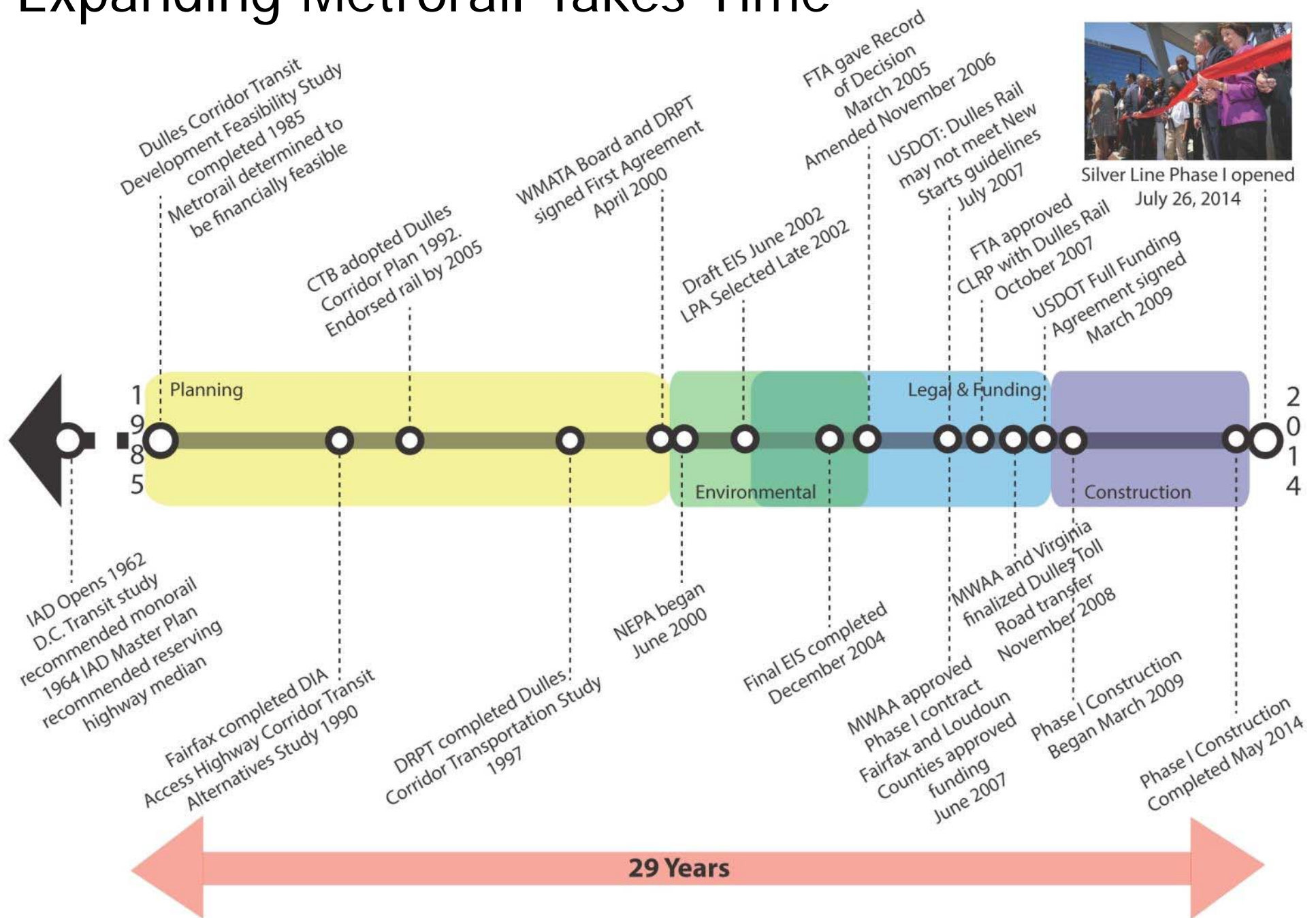
June 20, 2015



# I want Metro to extend to...



# Expanding Metrorail Takes Time





# Expanding Metrorail Takes Money... Lots of It

Metrorail



At-Grade



Elevated



Tunnel

\$100-600M per mile

Stations



\$80-300M per station

Rail Cars



\$17-22M per 8-car train





# Expanding Metrorail Takes More Capacity in the Core



**Operate the longest and most trains possible**



**Improve station capacity**



**Separate co-located lines, such as Blue/Orange/Silver and Yellow/Green**



# There's More To It Than Metrorail

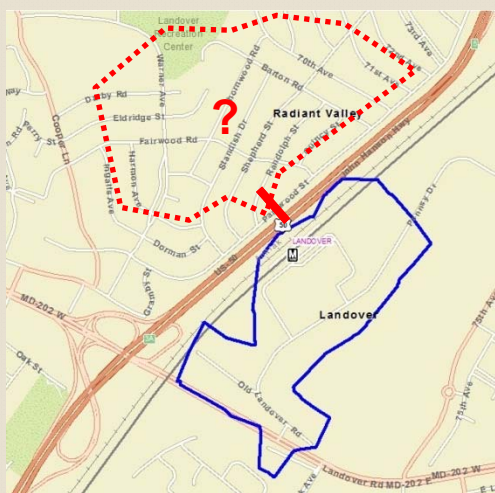
## Grow Near (and Orient To) Transit

- Transit-oriented development
- Zoning
- Planning



## Improve Access to Stops and Stations

- Fix pedestrian barriers
- Build paths and sidewalks



## Enhance Existing Bus Services

- Expand bus routes
- Give transit priority on city streets



Grow Near (and Orient To) Transit





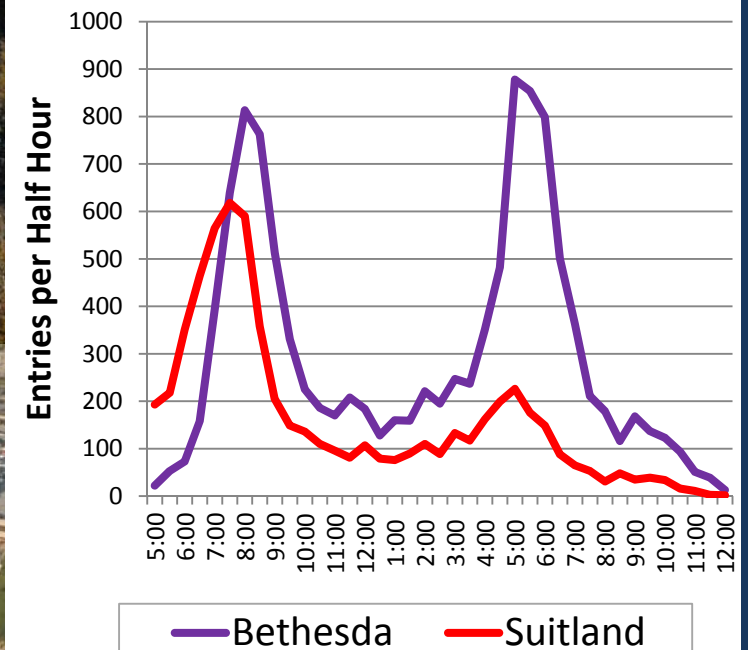
# What Does Transit-ORIENTED Development Look Like and Why We Care?

## Bethesda

Daily Ridership: 11,500  
Daily Revenue: \$33,000

## Suitland

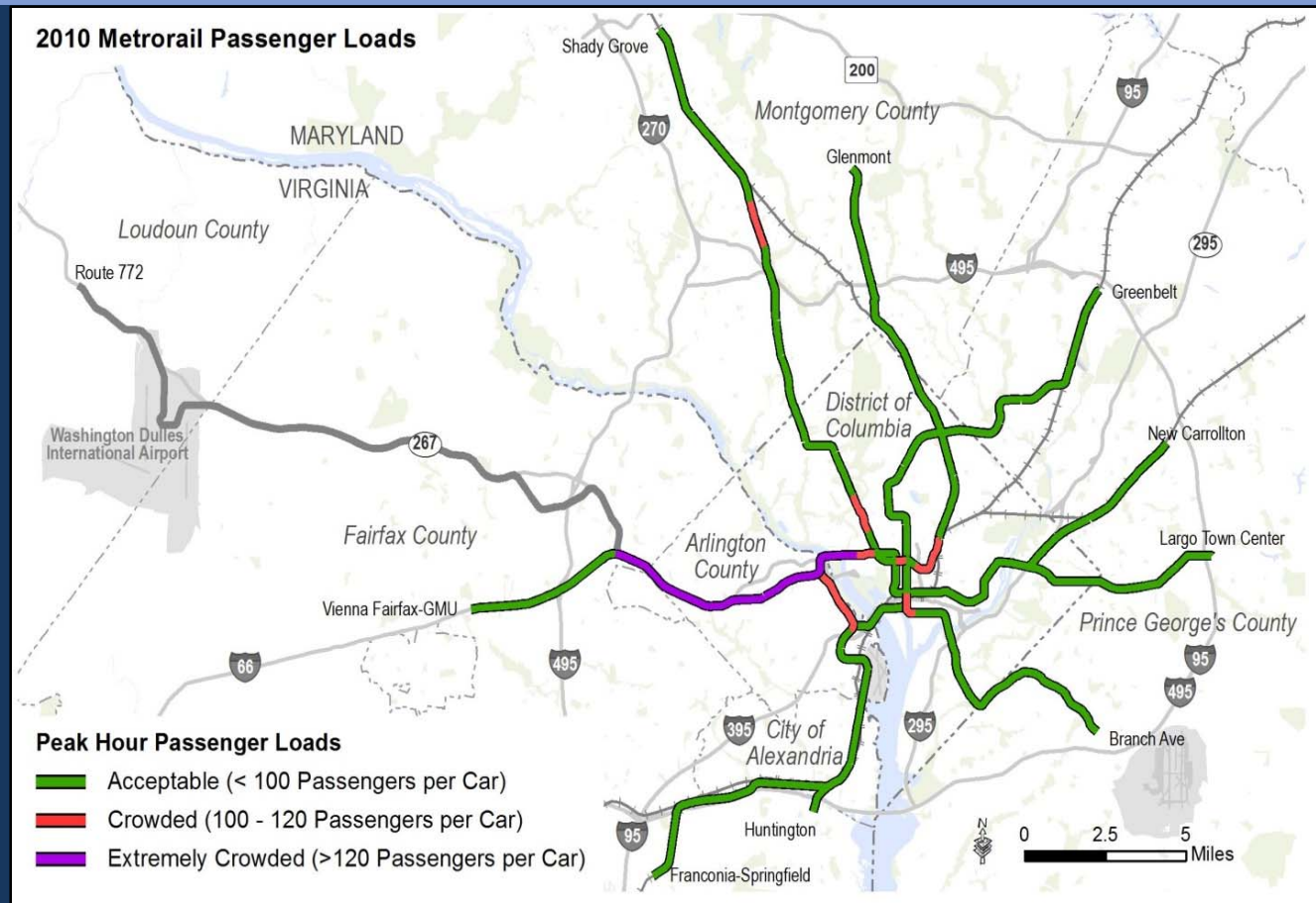
Daily Ridership: 6,300  
Daily Revenue: \$18,000







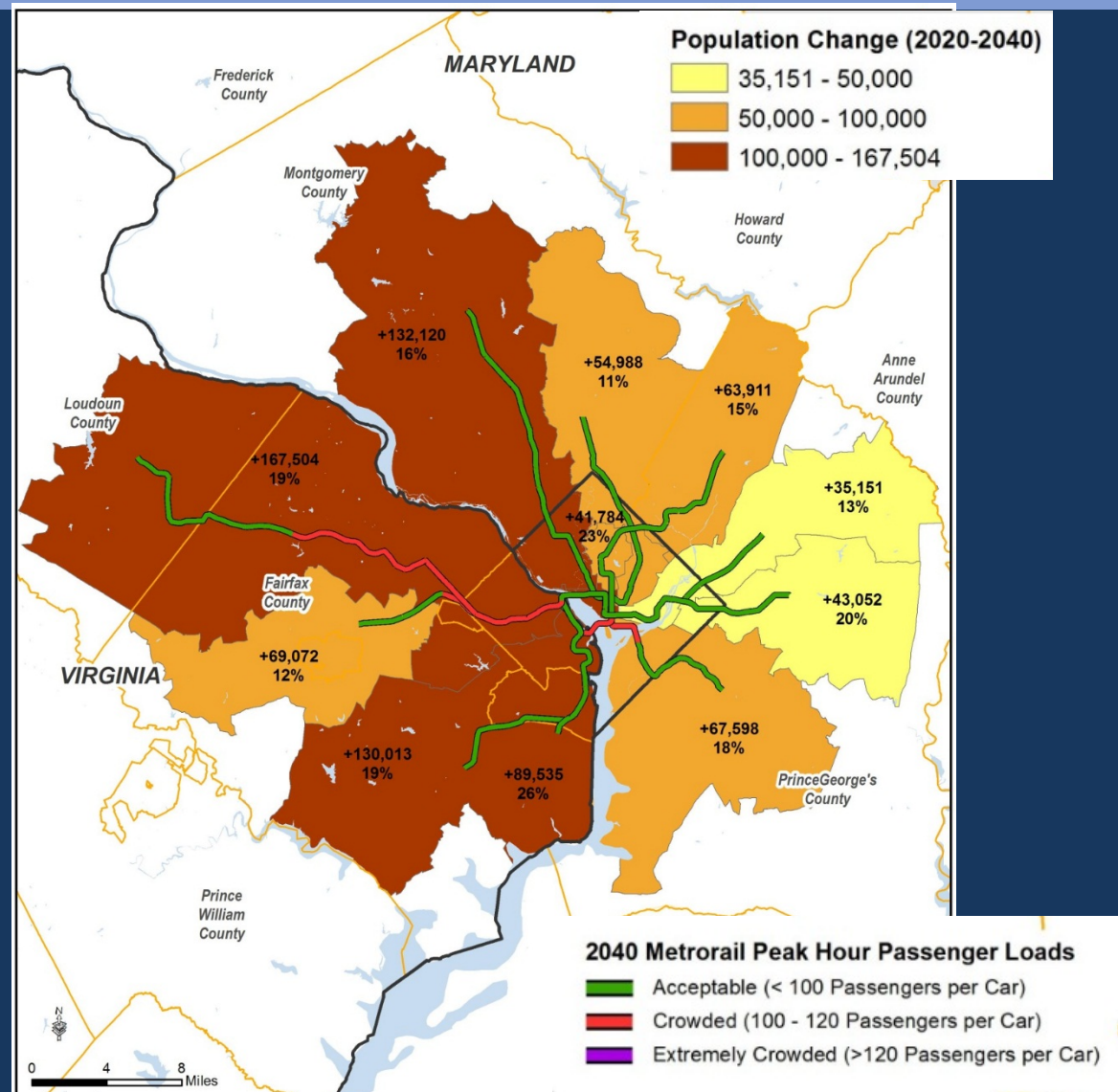
# 2010 Metrorail Passenger Loads



The vast majority of green segments are underutilized, with an average of 20-40 passengers per car in the peak period in the peak direction. Can the region make better use of the system we have?

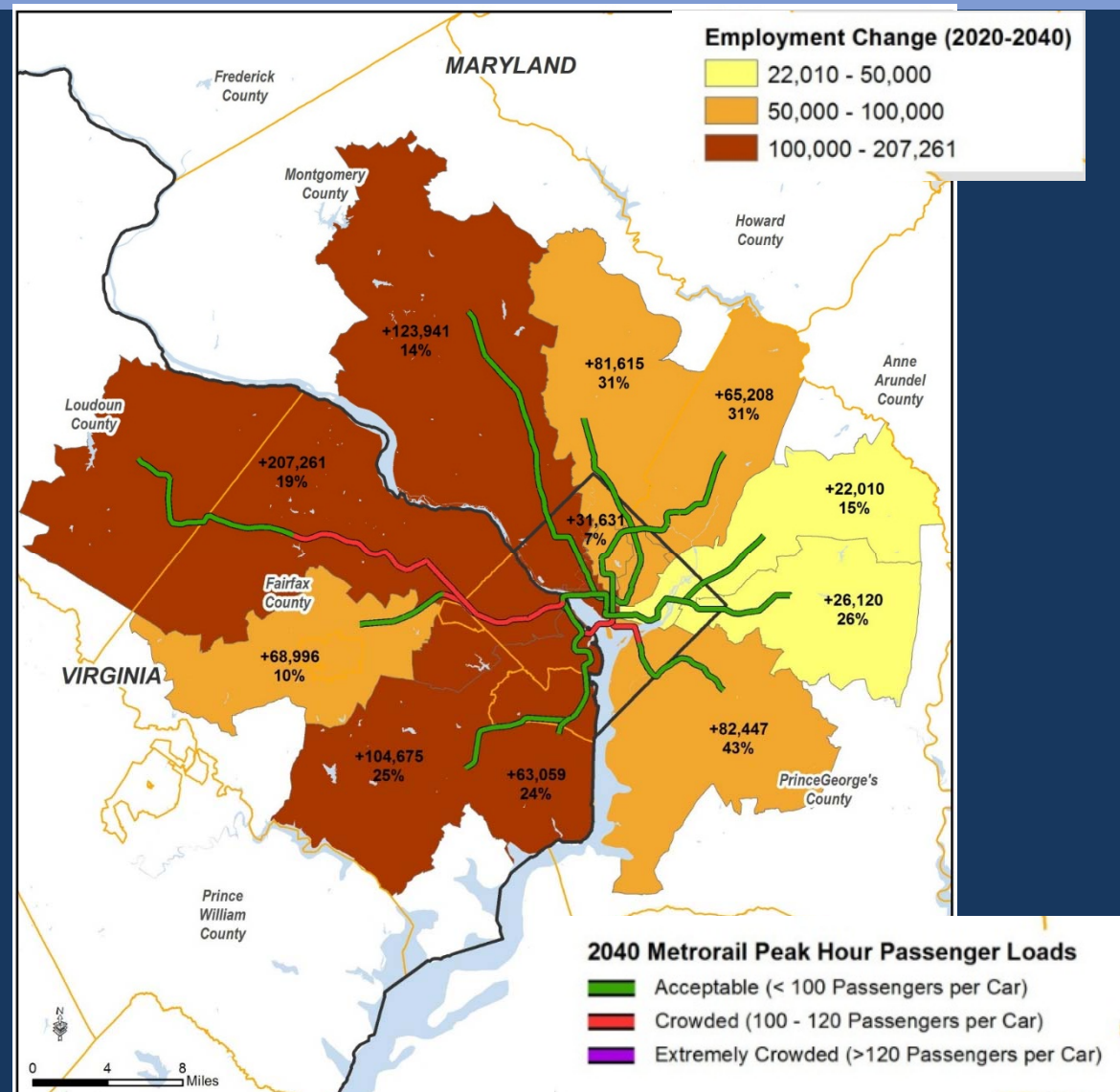


# Projected Growth by 2040: Doubling Down on Today





# Projected Growth by 2040: Doubling Down on Today

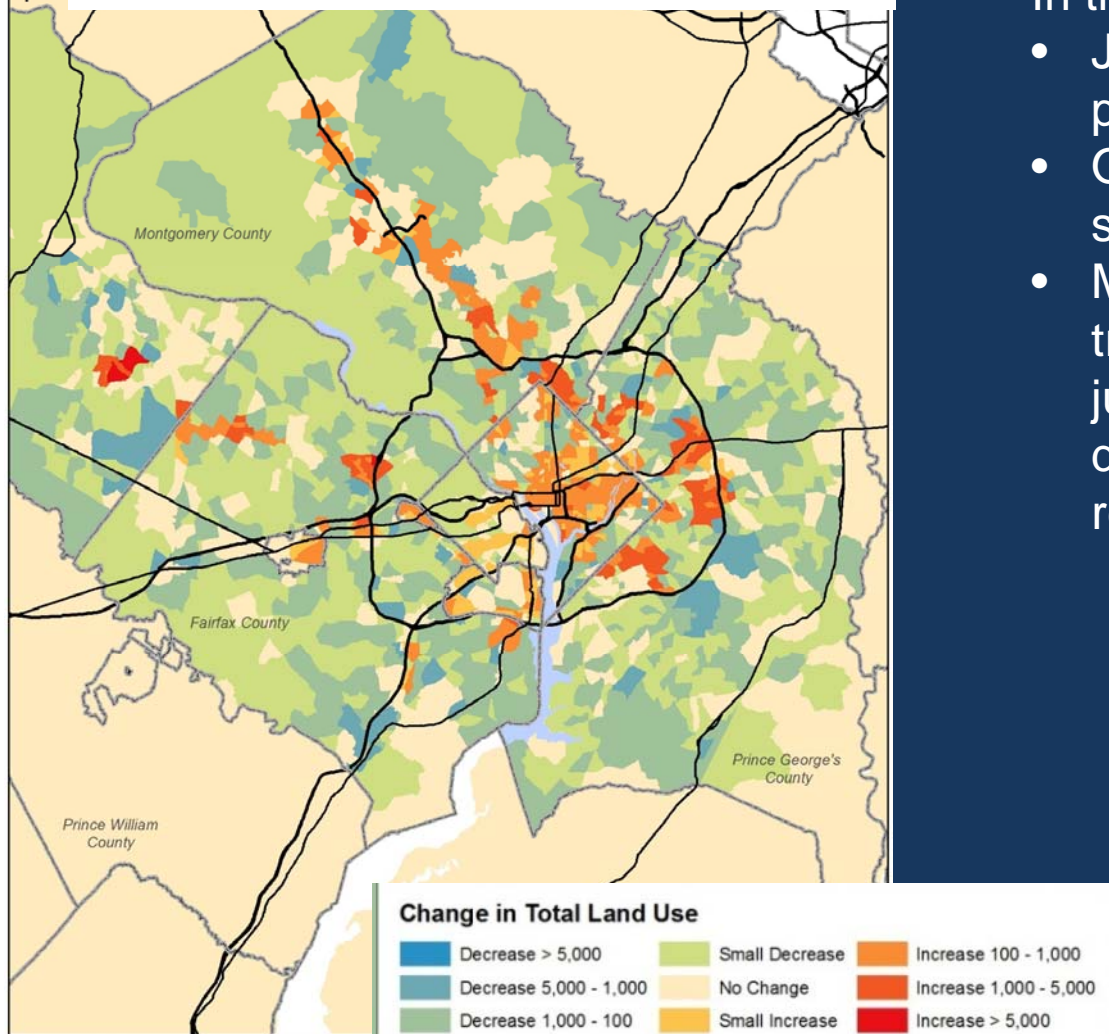






# What If Counties and Cities Maximized Growth Around Transit?

Change in Land Use vs 2040 Adopted Regional Forecast (Scenario A1)



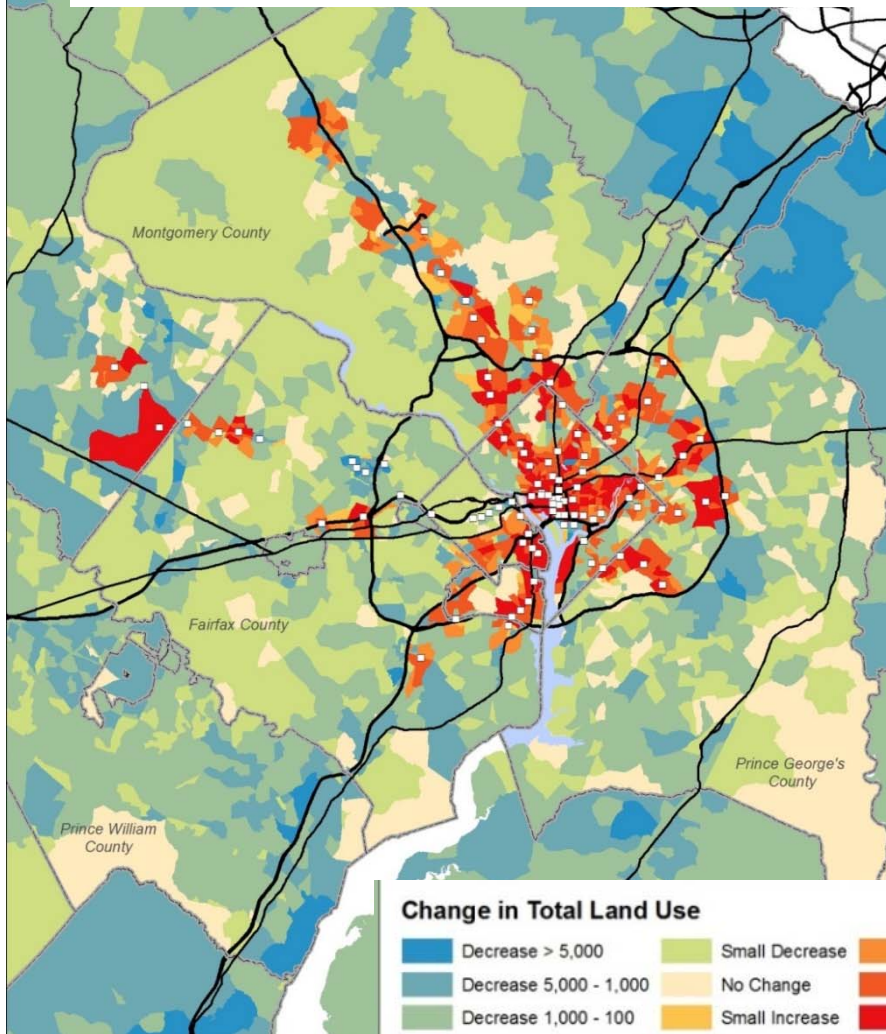
In this scenario,

- Jurisdictions' projected job and population growth maintained
- Only 2020-2040 projected growth shifted within jurisdictions
- Moved population and/or jobs to transit station areas within jurisdictions to increase mixed use development, short trips, and reverse commuting



# What If the Region Maximized Growth Around Transit?

Change in Land Use vs 2040 Adopted  
Regional Forecast (Scenario A2)



In this scenario,

- Regional projected job and population growth maintained
- Only 2020-2040 projected growth shifted across jurisdictional boundaries
- Moved population and/or jobs across the region to transit station areas to increase mixed use development, short trips, and reverse commuting



# What If Counties and Cities Maximized Growth Around Transit?

Counties and cities maximize  
growth around transit (A1)

The region maximizes  
growth around transit (A2)



Jobs within 45 min of households



Metrorail operating subsidy



All transit ridership



Transit crowding



Highway travel times



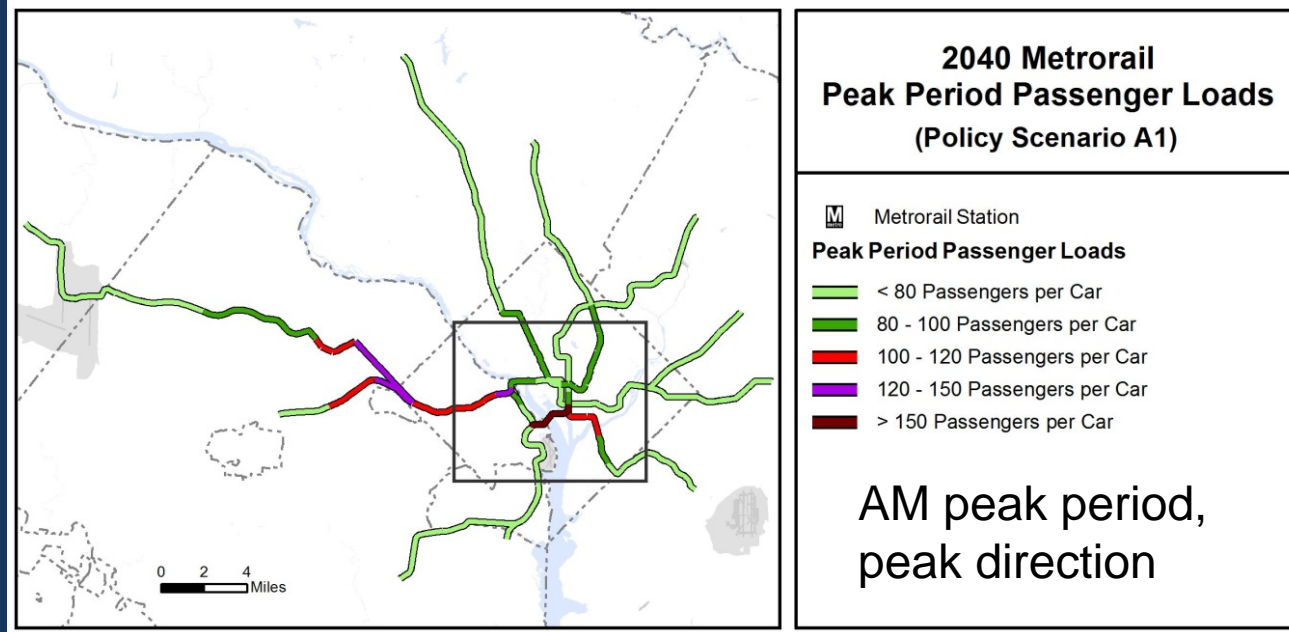
Daily VMT







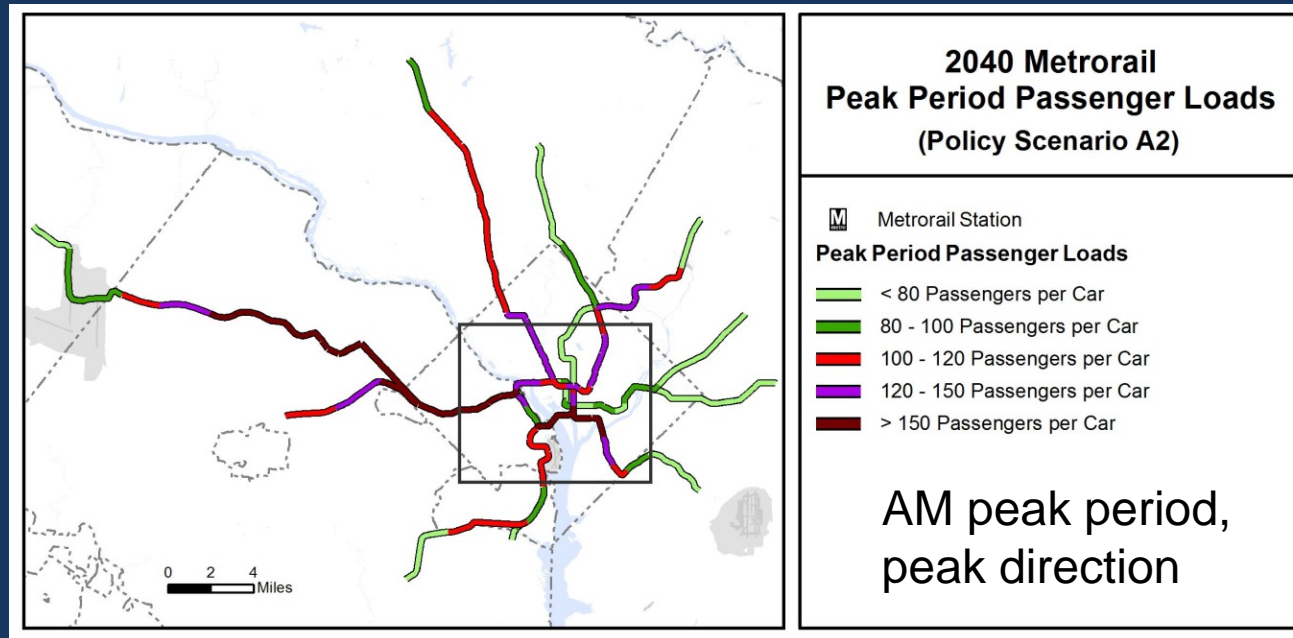
# Can Metrorail Be Used More Effectively?



- Peak period, peak direction
  - 88% of the station-station links showed an increase in average passengers per car (ppc)
  - 35% still show demand under 60 ppc, some lower than 20 ppc
  - 4% show demand over 120 ppc, which exceeds preferable crowding levels
- Peak period, off-peak direction
  - 88% of the links showed an increase in ppc, indicating an increase in reverse commute trips



# Can Metrorail Be Used More Effectively?



- Peak period, peak direction
  - 100% of the station-station links showed an increase in average ppc
  - 16% still show demand under 60 ppc, all above 40 ppc
  - 34% show demand over 120 ppc, which exceeds preferable crowding levels
- Peak period, off-peak direction
  - 97% of the links showed an increase in average ppc, indicating an increase in reverse commute trips

# Improve Access to Stops and Stations





# Why We Care About Access

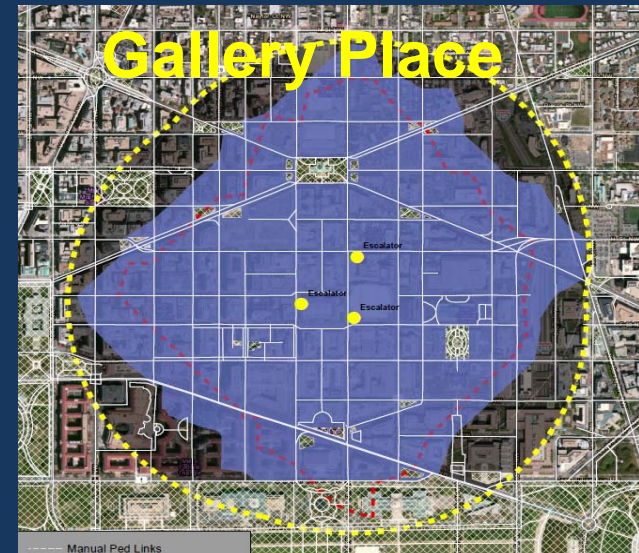
- Access to Metro means access to opportunity
- Concentrating growth near transit maximizes use of regional infrastructure
- Connecting communities to transit attracts more ridership
- More ridership contributes to lower carbon footprints





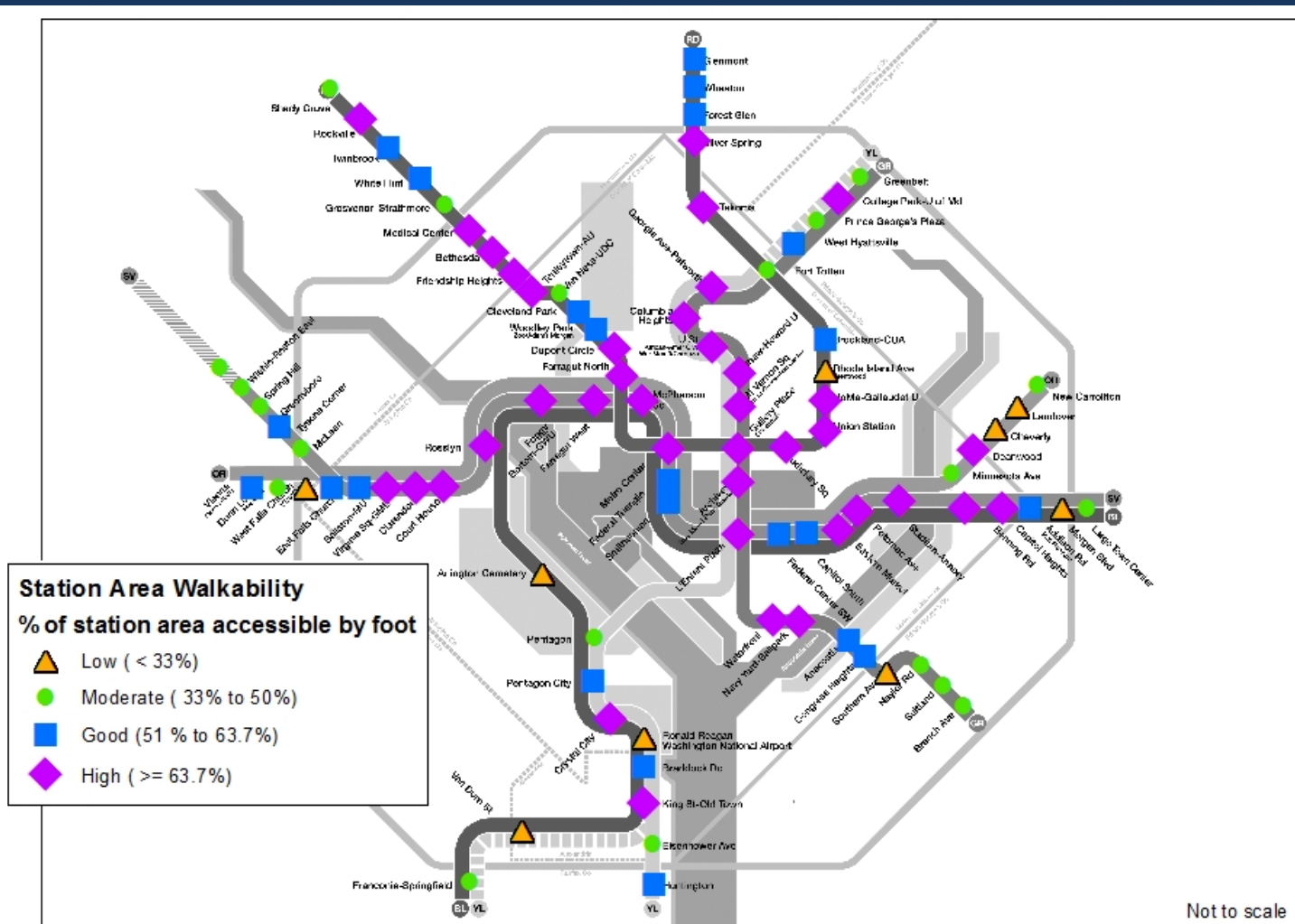
# Improving Station Walk Sheds

- Defined as walking distance:
  - ½ mile from rail station
- Accounts for actual network – not as crow flies





# How Walkable Are our Stations, Really?







# Improving Bus Stop Access

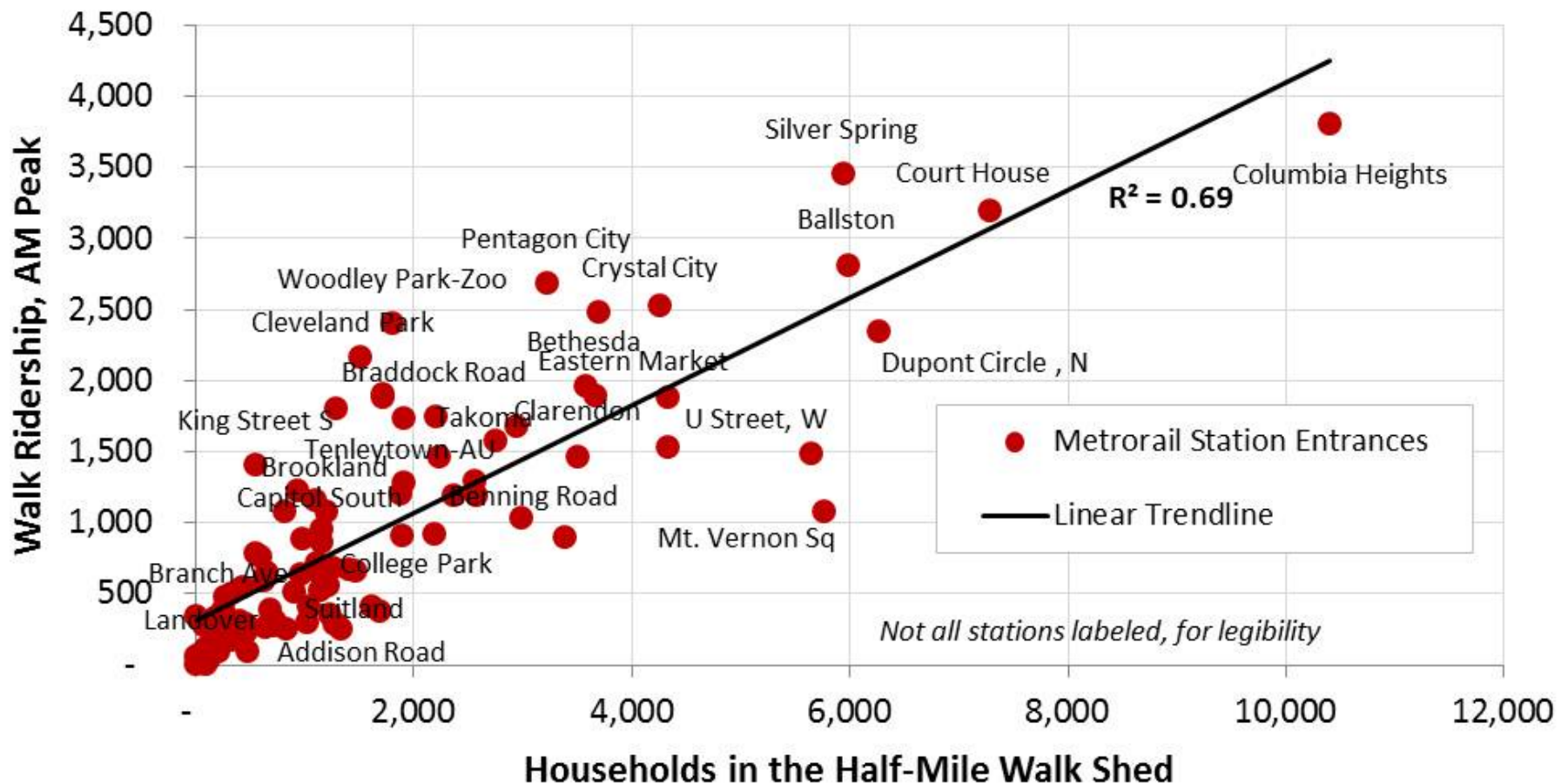
- Of ~20,000 bus stops regionwide, almost 7,000 have an access issue
- Improves safety for all
- Improves accessibility for disabled passengers



Paratransit trips near bus stops



# Land Use and Ridership Connection: Making the Case





# If you Build it they will come...

- Land use near transit directly results in walk ridership at Metrorail stations

**Ridership = 7 Peak Period Walk Trips/ 10 Households**





# Improving Residential Access to Southern Avenue Station

## Existing Shed



## Shed with Connection







# Improving Jobs Access to Greensboro Station



More than 4,000 jobs cut  
off from the station -  
Potential benefit:  
500 entries/day  
\$800,000 fares/year





# Advocating for Station Improvements

- Catalogue bike/ped improvements around 91 stations
- Estimate costs
- Prioritize projects
- Create “go to” list for funding opps

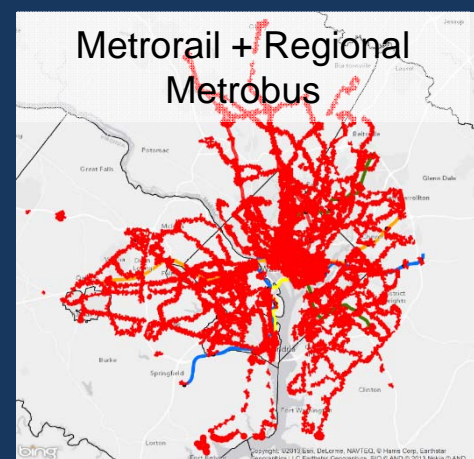
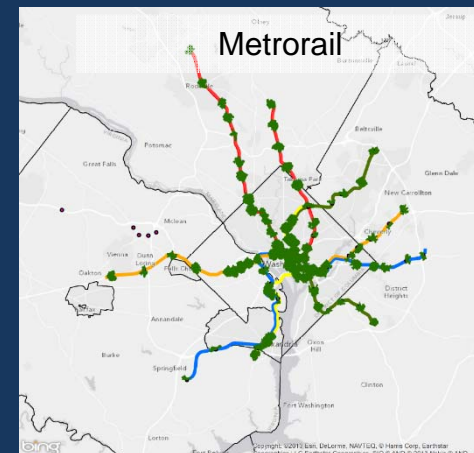


# Enhance Existing Bus Services



# Why We Care About Enhancing Existing Bus Service

- 38% of daily Metro ridership on Metrobus
- Metrobus carries 70% of all regional bus ridership
- Metrobus transit shed 3 times > than Metrorail
- Example: 16<sup>th</sup> Street (S Line)
  - 20,000+ daily riders
  - 90 second headways in peak hour
  - Standing room only
  - Bunching, pass-bys, low OTP







# What Can Buses Provide?

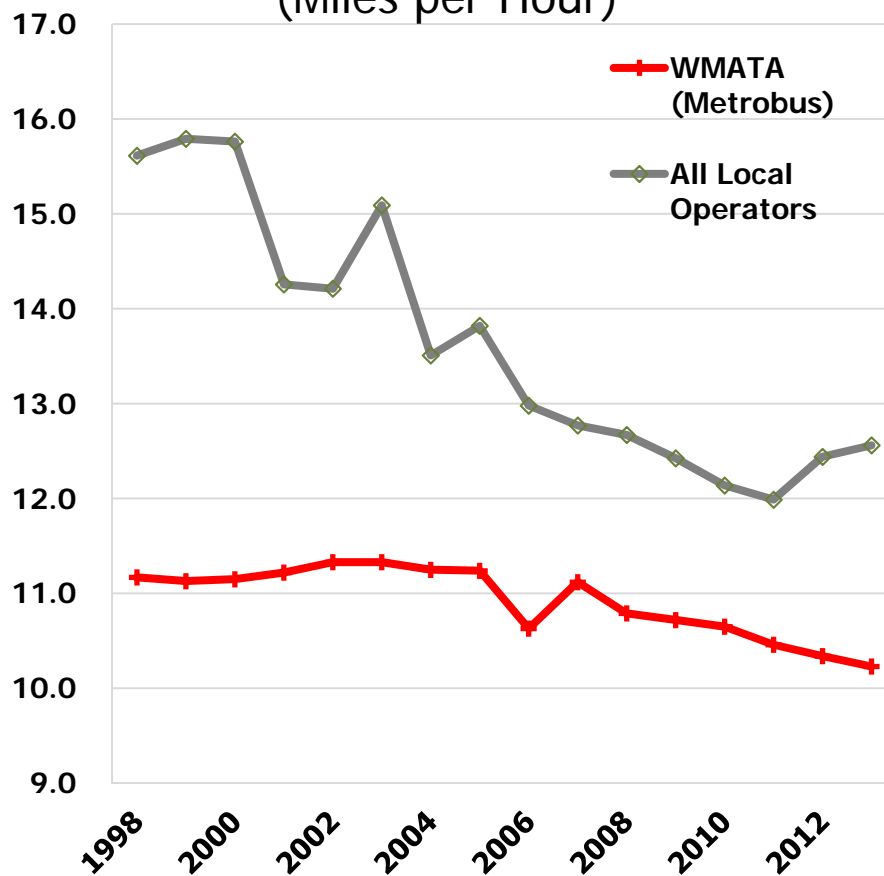
- Greater coverage
- Faster travel – priority, limited stops
- More frequent service
- Modern vehicles
- Branded vehicles and stations
- On-board amenities



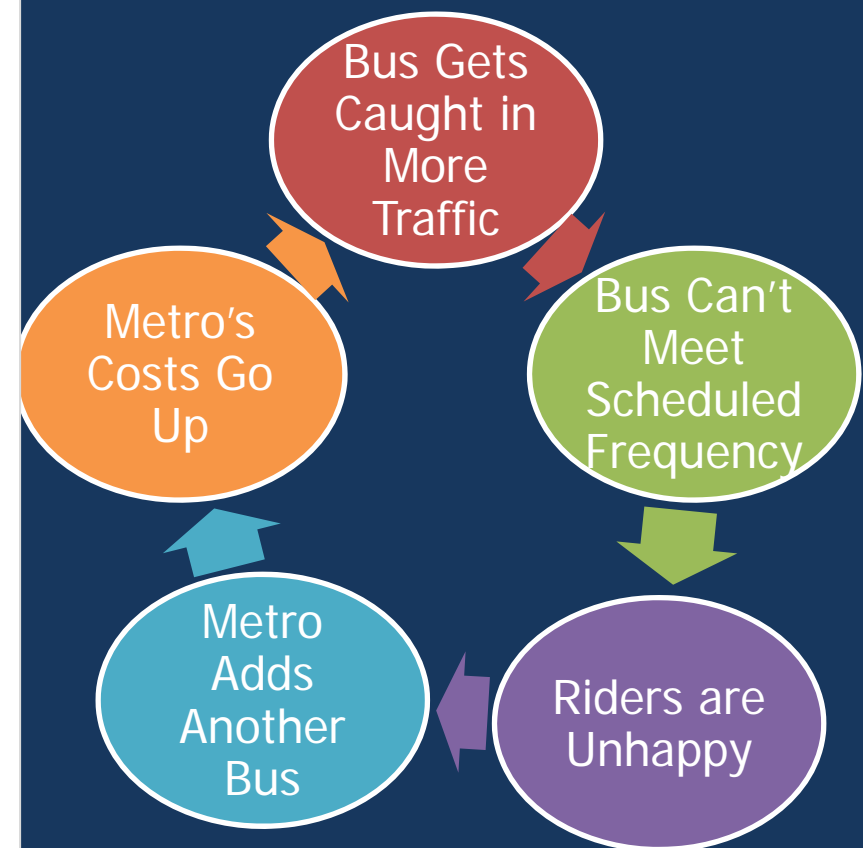


# Break the Cycle of the Slow Bus!

**Average Operating Speed**  
(Miles per Hour)

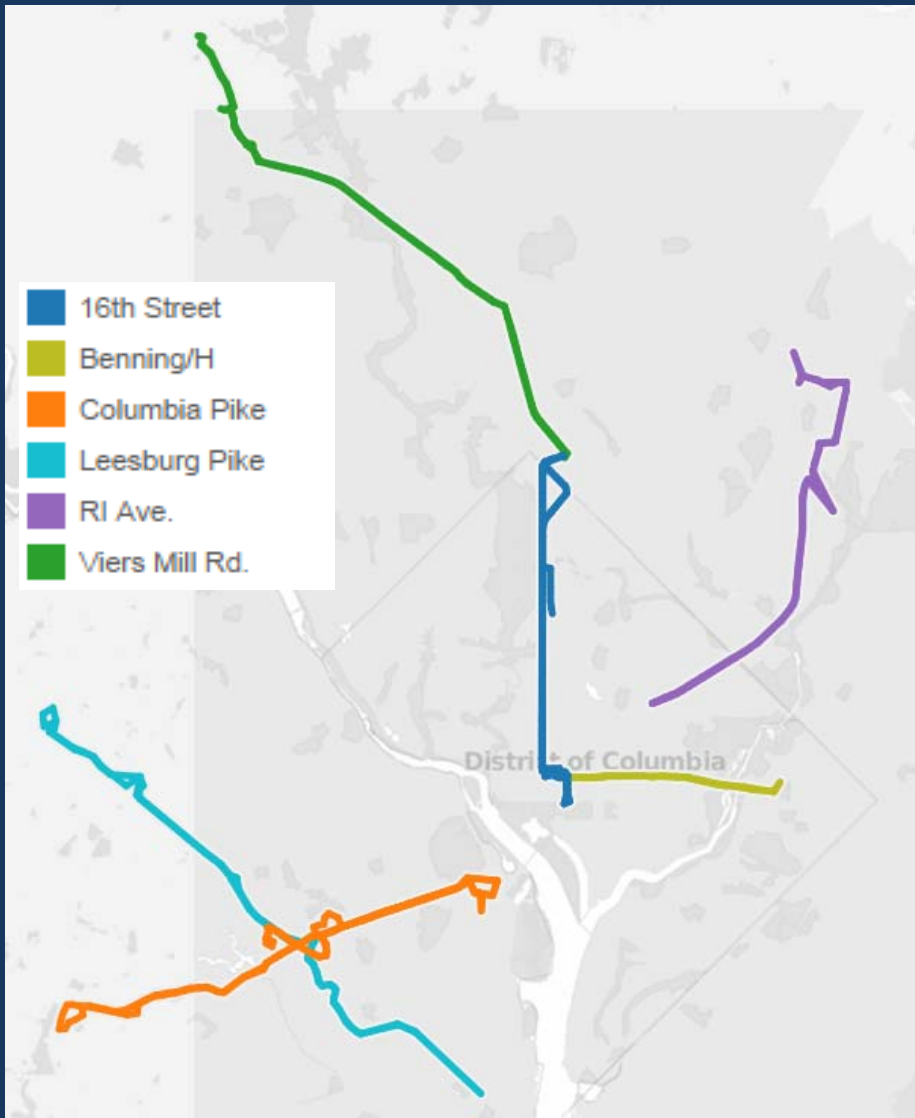


Data: National Transit Database





# Deliver Running Way Improvements



- Bus lanes and signal priority
  - 10-20% gains in run times
  - Protection for the future
- Runningway improvements on six corridors
  - Saves 12 buses
  - Saves \$7M/year
  - Require capital cost of \$26M

Payback in 5 years



# Speed Up Boarding Times

- Off-board fare payment increases speeds and reduces operating & capital costs
- Case study estimated annual operating savings: \$2M

Case Study Corridor	Bus Hours Saved (Daily)	Bus Saved
14th Street	4	1
16th Street	1	1
Georgia Ave	13	2
H St/Benning	8	1
Wisconsin/ Pennsylvania	7	1
<b>Total Daily</b>	<b>33</b>	<b>6</b>



New York



Las Vegas





## There's More To It Than Metrorail: Take-Aways

- Land use should chase transit – regionwide
- Advocate for local decision makers to monetize full life-cycle of land use options
- Walk and bike access to stations is cost-effective
- Advocate for access projects that create comfortable (i.e. desirable) paths
- Focus on moving people not vehicles
- Advocate for local jurisdictions to add transit signal priority, queue jumps, and bus lanes