

Measuring and Communicating Mobility:

The District Mobility Project

Stephanie Dock, District Department of Transportation

Deconstructing DC Congestion

D.C. tops list of nation's worst traffic gridlock

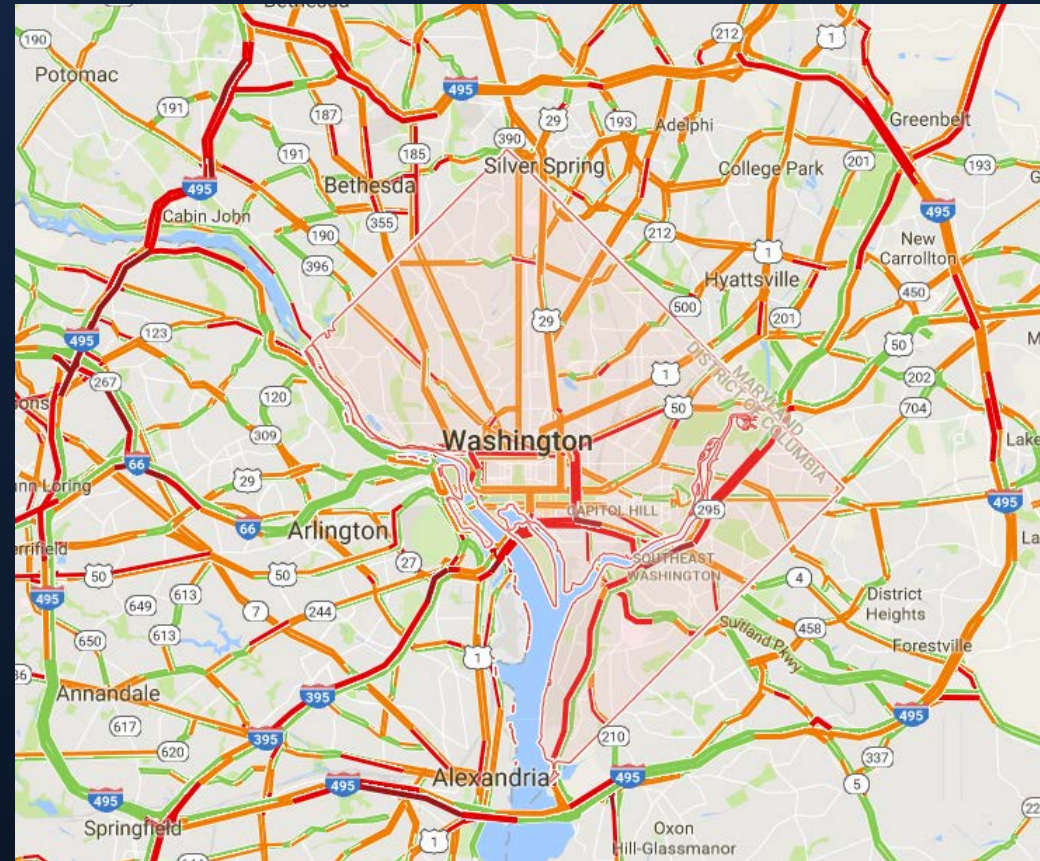


By Dick Uliano
August 26, 2015 2:17 am



Traffic crawls along the Capital Beltway during rush hour, in Greenbelt, Md., Tuesday, Aug. 25, 2015. Traffic congestion nationally reached a new peak last year and is greater than ever before, according to a report by the Texas A&M Transportation Institute and INRIX Inc. (AP...)

WASHINGTON — This may come as no surprise to anyone who has been stuck in traffic on Interstate 66, Interstate 95 or the Capital Beltway. The Washington, D.C. area has the worst traffic gridlock in the United States. Now, there's a report to prove it.



Not All Congestion is Created Equal



Measuring Urban Multimodal Mobility

> Intensity of Use

- Traditional definition of “congestion”
- Can the facility support the demand?

> Reliability

- Can I consistently get where I need to go?
- Often more frustrating than congestion alone

> Accessibility

- What choices do I have to get somewhere? What can I get to within a time budget?
- Car ownership in urban core is low.....multimodal access is critical

“Transportation is about more than getting from one point to another – it’s about...help[ing] communities to offer better access to jobs and schools and allow[ing] citizens to...achieve their goals” – Secretary Anthony Foxx

District Transportation Priorities

- › Improve sustainability and health
- › Improve safety and security
- › Make streets functional, beautiful and walkable
- › Maintain and manage system assets
- › Invest in transportation
- › **Maximize accessibility, mobility and connectivity**
 - During *moveDC* outreach, people were most interested in improving **reliability** and **accessibility** in the District



DDOT's Role – The District Mobility Project

- › Funded by the District Council, but driven by DDOT
- › Project goals....
 - Define and monitor the District's state of "multimodal mobility"
 - Identify, evaluate and prioritize management strategies
 - Develop an investment plan
 - Communicate existing conditions and plan to the public

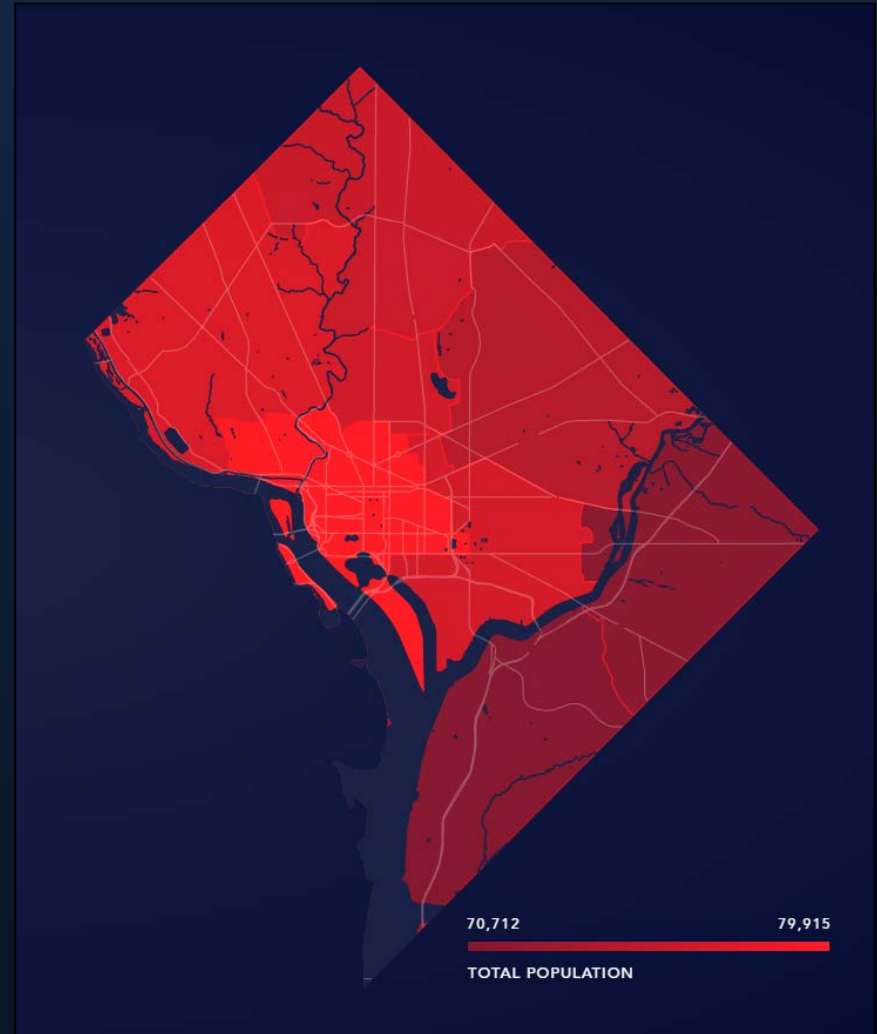


Step 1 – Self Assessment

- › Understanding the Transportation System
 - District context
 - Regional context and commuting
 - Selected performance measures

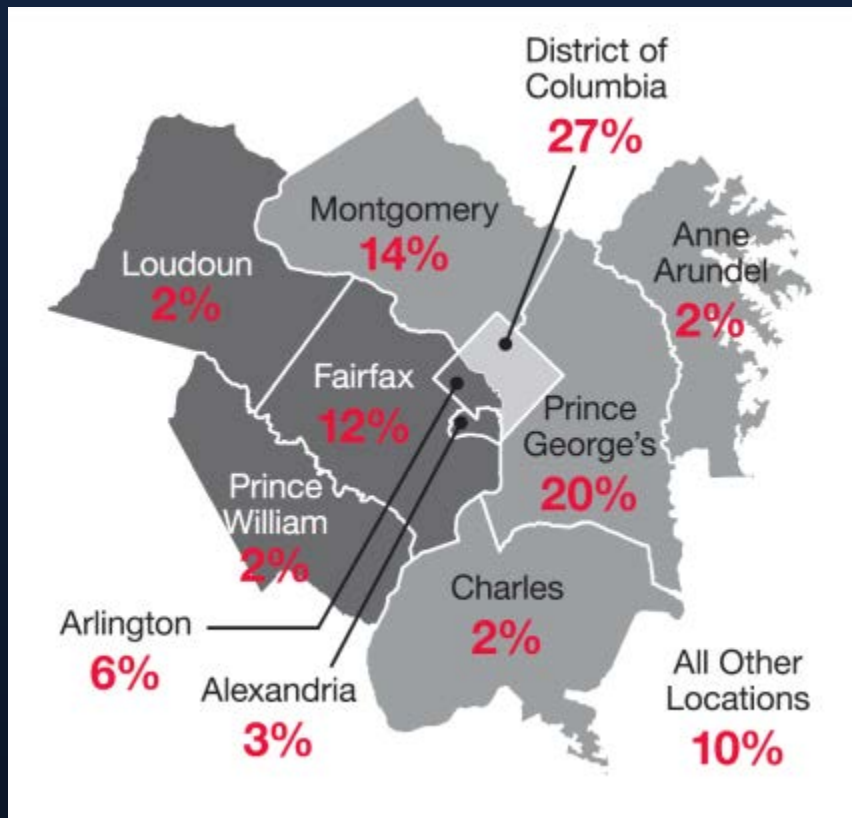
District Context

- › 68.3 square miles
- › 7th largest metropolitan area
 - Population 5.6 million
- › DC population is 672,000 (& growing)
 - 500,000+ daily commuters
 - 100,000+ daily visitors
 - 1,000 new residents every month
- › Multimodal transportation system
 - Over 1/3 of households don't own an automobile
- › Mostly arterial roadway system
 - 15 miles out of 1,100 are freeways

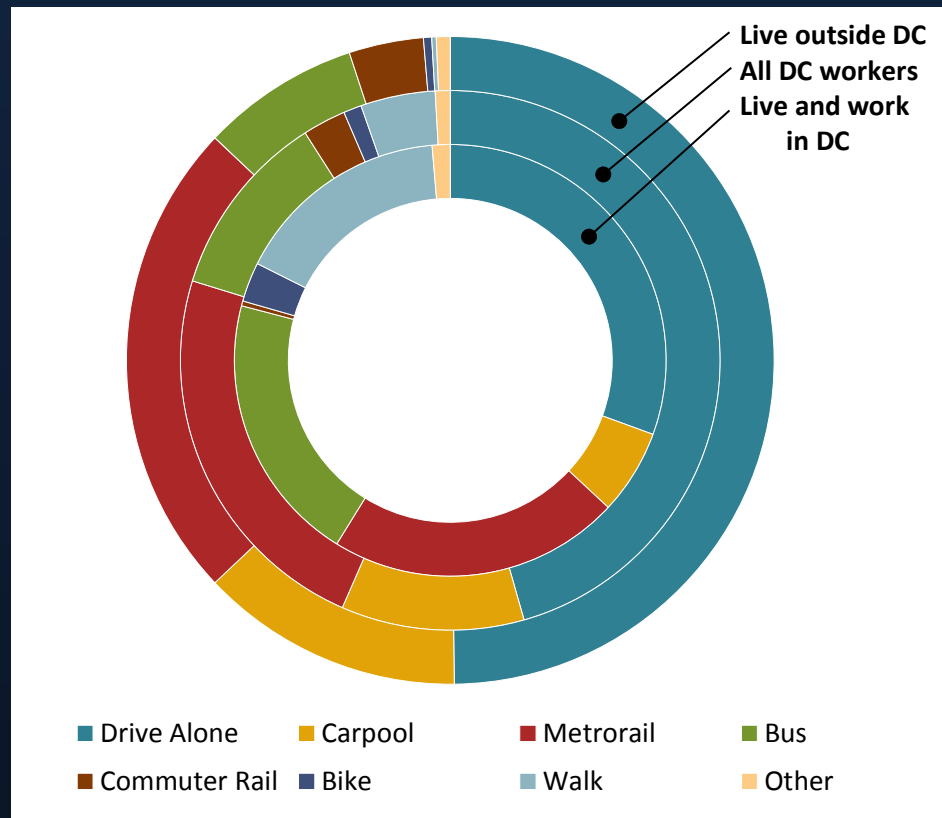


Regional Context

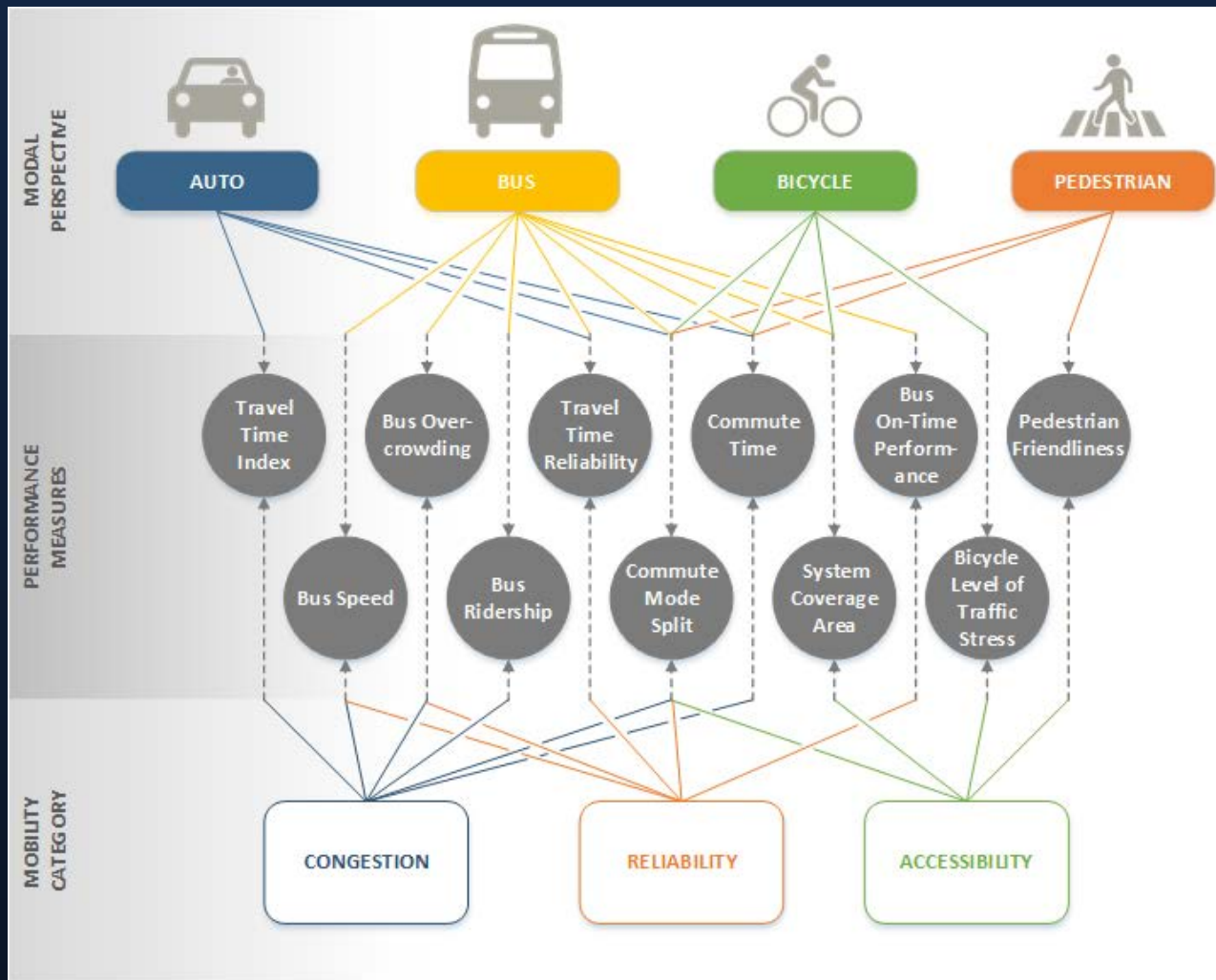
Where District Workers Live



How District Workers Commute



Multimodal Performance Measures



Multimodal Performance Measures

Measure	Outputs
Commute Mode Split	Commute mode split by walking, biking, transit, and auto
Commute Time	Average commute time and commute time distribution by walking, biking, transit, and auto
Travel Time Index	Travel time index for automobiles in the District during the weekday and weekend peak periods
Bus Ridership	Stop level and route level ridership by WMATA time period
Bus Overcrowding	Average of the maximum load observed on buses by WMATA time period
Bus Speed	Average bus speed between time points by WMATA time period
Planning Time Index	Planning time index for automobiles in the District during the weekday and weekend peak periods
Bus On-Time Performance	Difference between the scheduled and actual travel time between time points by WMATA time period
Transit Coverage Area	Accessibility to high frequency transit including bus and Metrorail by WMATA time period
Bikeshare Coverage Area	Accessibility to bikeshare stations
Bicycle Level of Traffic Stress (LTS)	Bicycle level of traffic stress (LTS) for all roadways in the District
Pedestrian Friendliness Index	A scoring system on all District census blocks to indicate pedestrian "friendliness"

Measuring the District Commute

Average Commute Time:
Autos



Average Commute Time:
Bikes

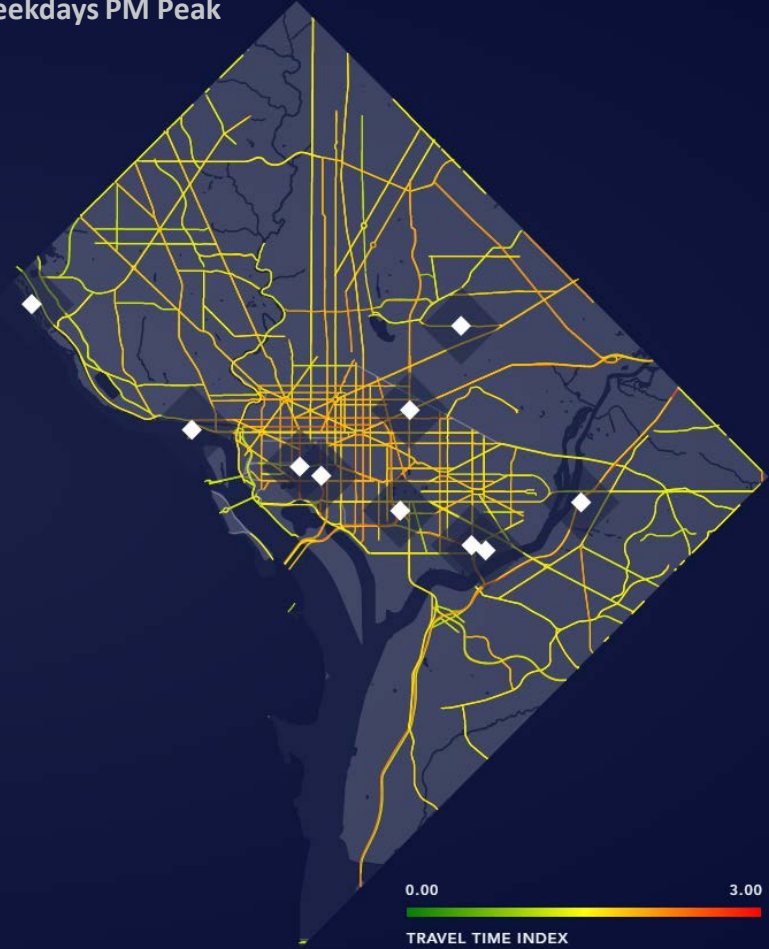


Measuring Congestion

Automobile TTI
Weekdays AM Peak



Automobile TTI
Weekdays PM Peak



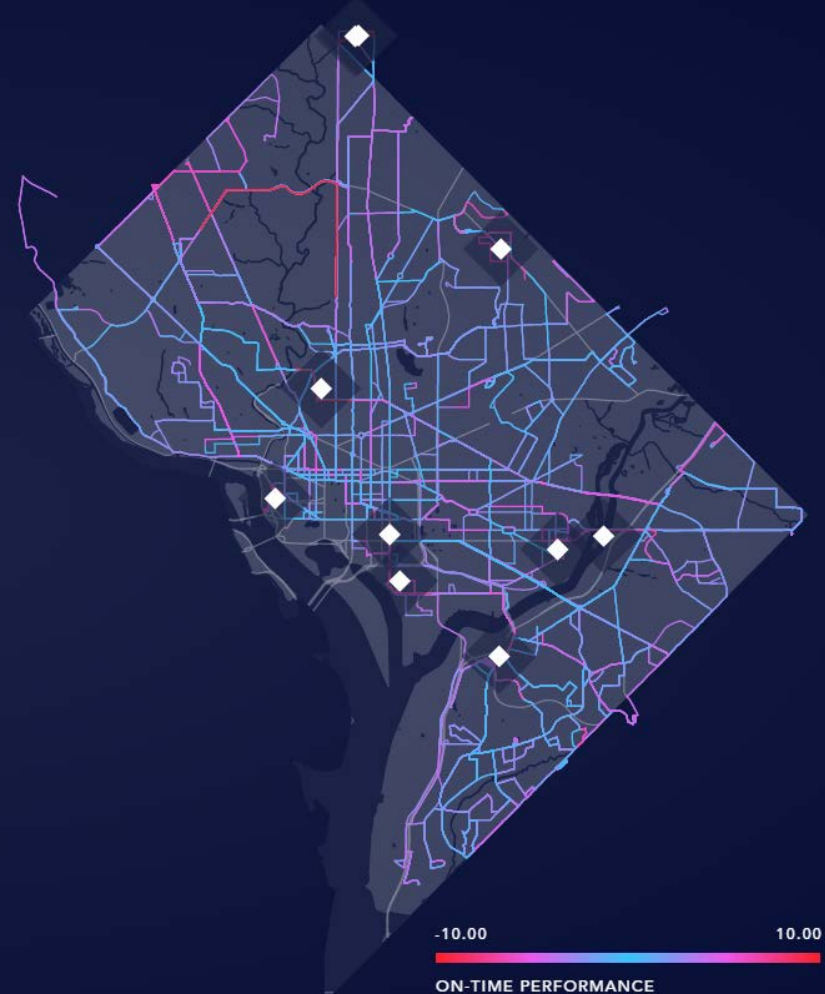
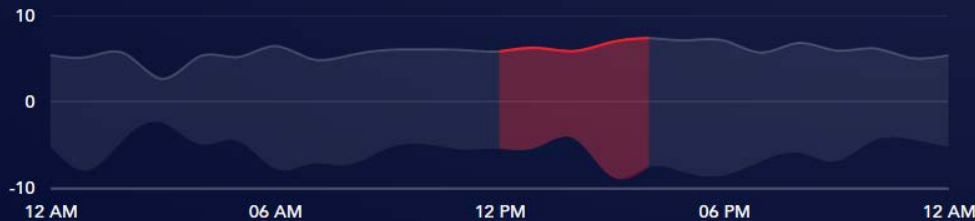
Measuring Reliability

Bus reliability

The reliability of bus service is commonly measured by on-time performance, in this case calculated as the difference between the actual arrival time and the scheduled arrival time. Use this page to explore reliability of transit in the district through on-time performance by time of day.

SEE HOW THE DELAY VARIES DURING THE DAY:

AM EARLY AM PEAK MIDDAY **PM PEAK** EARLY NIGHT
LATE NIGHT

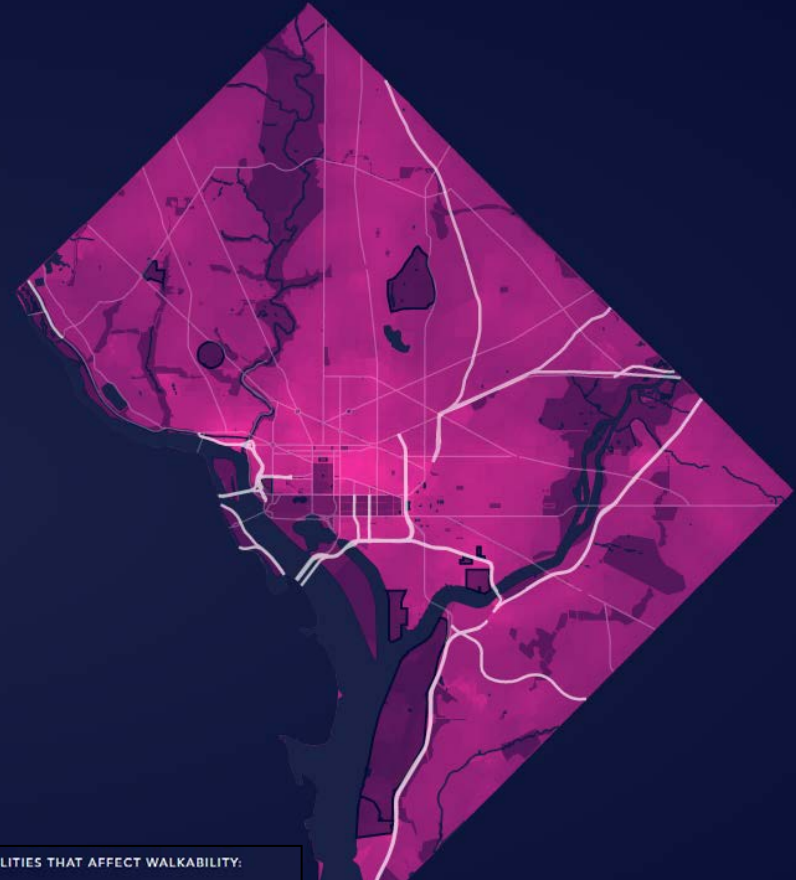


Measuring Accessibility

Bicycle Level of Traffic Stress



Pedestrian Walkability



WORSE BETTER
WALKABILITY SCORE

WHAT % OF THE STREETS OF DC CAN BE CYCLED BY:



SHOW FACILITIES THAT AFFECT WALKABILITY:

- Water
- Limited access areas
- Parks
- Highway / Railway barriers

Step 2 – Addressing Mobility in DC Context

- › Catalogue strategies to improve mobility
- › Identify concentrations of multimodal deficiencies
- › Prioritize strategies to address multimodal challenges and advance District-wide mobility

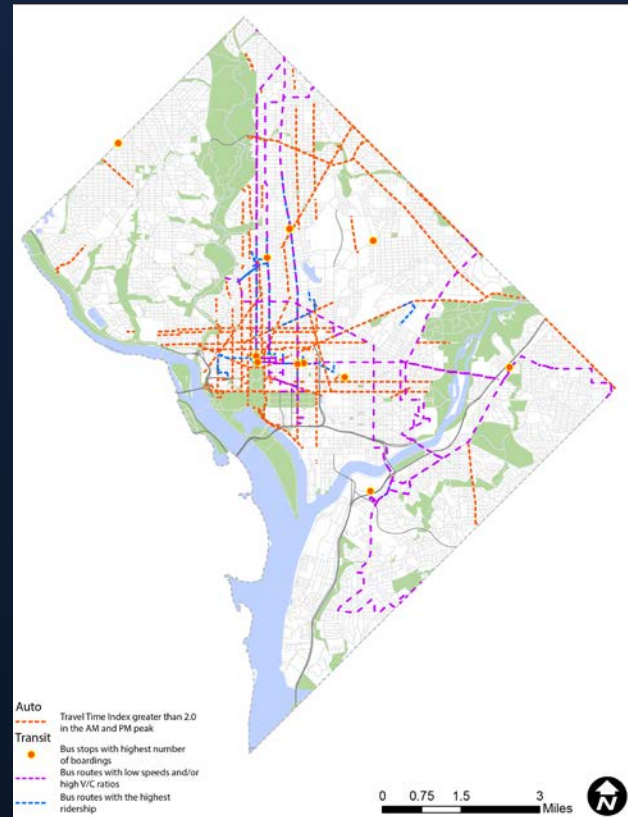
Strategies to Improve Mobility

- › Starts with a management and monitoring program
 - Assess multimodal system performance regularly
 - Maintain a long-term perspective
 - Identify and prioritize projects
 - Create transparent metrics and open data

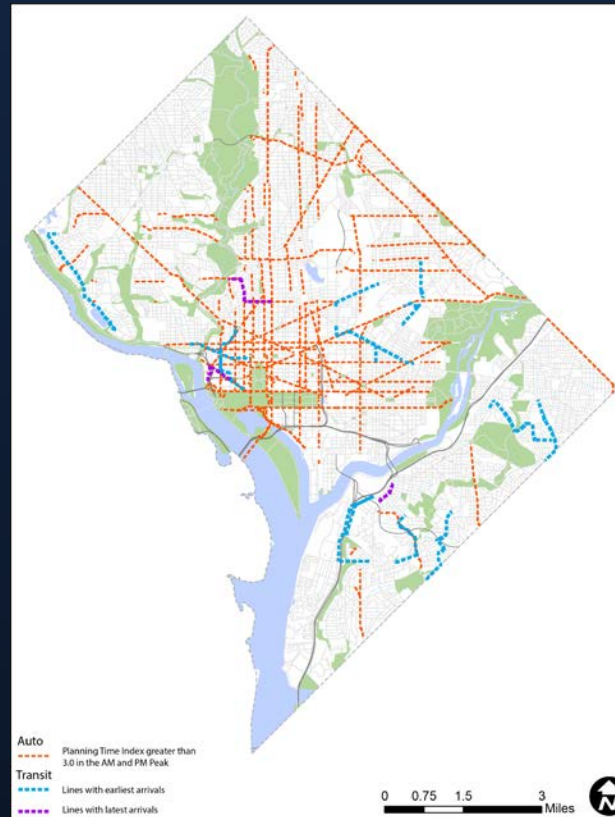
- › Investment plan
 - Begin to identify actions and areas of focus

- › Action plan
 - 1-, 3-, and 5-year timeframe
 - Process side and Project side

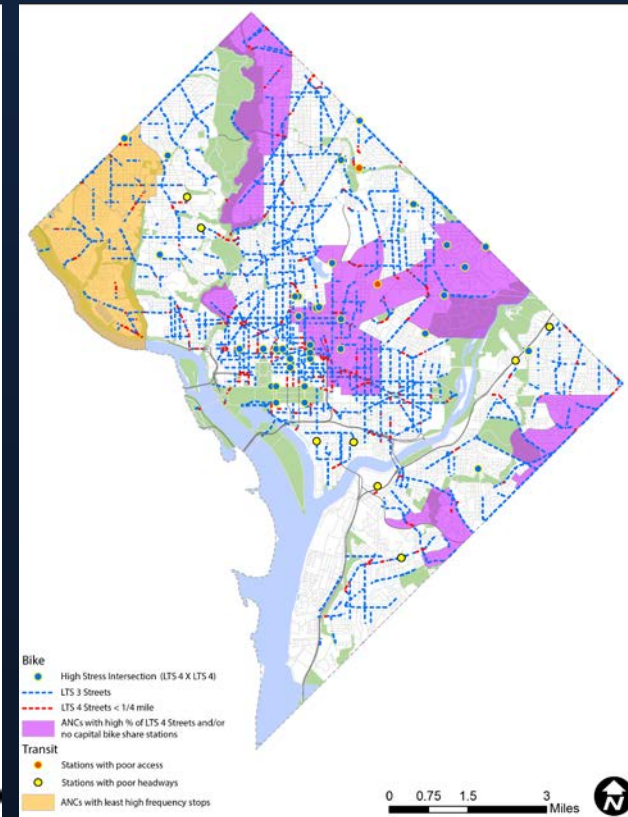
Identifying Multimodal Deficiencies



Congestion



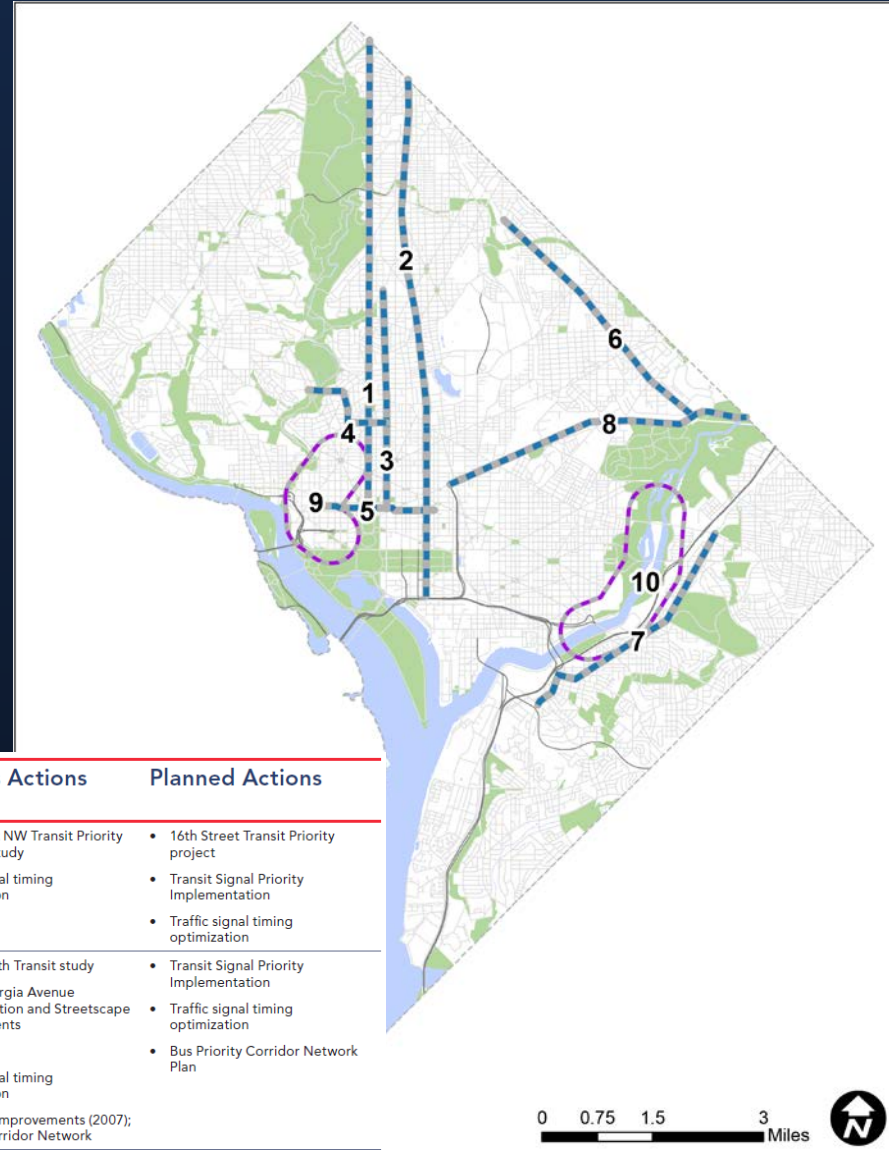
Reliability



Accessibility

Prioritizing Strategies to Advance District Mobility

- Areas with deficiencies across different mobility categories
- Existing challenges, previous actions and planned actions inform strategic system investments



Area	Name	Area Description	Challenges	Previous Actions	Planned Actions
1	16th Street, NW	Corridor: H Street NW to Eastern Avenue NW	<ul style="list-style-type: none"> • High bus ridership • Low bus speeds • Bus overcrowding 	<ul style="list-style-type: none"> • 16th Street NW Transit Priority Planning Study • Traffic signal timing optimization 	<ul style="list-style-type: none"> • 16th Street Transit Priority project • Transit Signal Priority Implementation • Traffic signal timing optimization
2	Georgia Avenue, NW and 7th Street	Corridor: U Street NW to Arkansas Avenue NW and L'Enfant Plaza to U Street NW	<ul style="list-style-type: none"> • High bus ridership • Low bus speeds • Bus overcrowding • Highly variable travel time 	<ul style="list-style-type: none"> • North/South Transit study • Lower Georgia Avenue Transportation and Streetscape Improvements • Bus lane • Traffic signal timing optimization • Metrobus improvements (2007); Priority Corridor Network 	<ul style="list-style-type: none"> • Transit Signal Priority Implementation • Traffic signal timing optimization • Bus Priority Corridor Network Plan



Next Steps

- › Update the website to 2016 data
- › Refine some measures, add a few critical missing ones
 - Accessibility to jobs
 - Thinking about person throughput
 - A better bike measure that builds on LTS
 - Freight?
- › Linkages to the overall planning process
 - We don't want this to be a one-off study
 - Need to integrate data and measures into decision making

Find out more

› DistrictMobility.org

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