Measuring and Communicating Mobility: The District Mobility Project

Stephanie Dock, District Department of Transportation
D.C. tops list of nation’s worst traffic gridlock

By Dick Ullano
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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
› 7\textsuperscript{th} 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

- District of Columbia: 27%
- Montgomery: 14%
- Fairfax: 12%
- Prince George's: 20%
- Arlington: 6%
- Alexandria: 3%
- All Other Locations: 10%

How District Workers Commute

- Drive Alone
- Carpool
- Metrorail
- Bus
- Commuter Rail
- Bike
- Walk
- Other

Live outside DC
All DC workers
Live and work in DC
Multimodal Performance Measures
# Multimodal Performance Measures

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<td>Bicycle level of traffic stress (LTS) for all roadways in the District</td>
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<td>Pedestrian Friendliness Index</td>
<td>A scoring system on all District census blocks to indicate pedestrian “friendliness”</td>
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Measuring the District Commute

Average Commute Time: Autos

Average Commute Time: Bikes

District Department of Transportation
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

What % of the streets of DC can be cycled by?
- Children: 12%
- Most adults: 20%
- All bicyclists: 34%
- Experienced bicyclists: 12%
- Bikeshare stations: 3%

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

<table>
<thead>
<tr>
<th>Area Name</th>
<th>Area Description</th>
<th>Challenges</th>
<th>Previous Actions</th>
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<tr>
<td>1 16th Street, NW</td>
<td>Corridor: H Street NW to Eastern Avenue NW</td>
<td>• High bus ridership</td>
<td>• 16th Street NW Transit Priority Planning Study</td>
<td>• 16th Street Transit Priority project</td>
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<td></td>
<td></td>
<td>• Low bus speeds</td>
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<td></td>
<td></td>
<td>• Bus overcrowding</td>
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<tr>
<td>2 Georgia Avenue, NW and 7th Street</td>
<td>Corridor: U Street NW to Arkansas Avenue NW and L’Enfant Plaza to U Street NW</td>
<td>• High bus ridership</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>• Low bus speeds</td>
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<td></td>
<td></td>
<td>• Bus overcrowding</td>
<td>• Bus lane</td>
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<tr>
<td></td>
<td></td>
<td>• Highly variable travel time</td>
<td>• Traffic signal timing optimization</td>
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<td></td>
<td></td>
<td></td>
<td>• Metrobus Improvements (2007); Priority Corridor Network</td>
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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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