VTRANS | VIRGINIA'S TRANSPORTATION PLAN

Mid Term Needs Assessment Regional Workshop Summary

Northern Virginia

August 7, 2019

Office of INTERMODAL Planning and Investment

Office of Intermodal Planning and Investment

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Richmond, Virginia 23219

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Prepared in support of VTrans, Virginia's Statewide Multimodal Transportation Plan

Contract Number 47082, Task Two: Agency Involvement

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1 Introduction

This report summarizes the input from a workshop conducted by the Virginia Office of Intermodal Planning and Investment (OIPI) with representatives of local, regional, and state agencies that support transportation planning for the Northern Virginia area. The purpose of the meeting was to elicit input on the analysis methods (specifically, key performance measures) and the regional results of initial analyses conducted to identify statewide Transportation Needs for the coming seven to ten years.

2 Meeting Location And Participants

The workshop was conducted at Northern Virginia Community College in Annandale, Virginia, from 10:00 a.m. to 2:00 p.m. Table 1 provides a list of participants and invitees.

Table 1: Workshop Participants and Invited Representatives

Name	Agency	Title
Regional and Local Representatives		
Evan Davis	Alexandria Transit Company (DASH)	Director of Finance & Administration
Dan Malouff	Arlington	Regional Transportation Planner
Jim Maslanka	City of Alexandria	Principal Planner
Chloe Ritter	City of Fairfax	Multimodal Transportation Planner
Kerri Oddenino	City of Falls Church	Senior Planner
Paul Stoddard	City of Falls Church	Director of Planning
Chloe Delhomme	City of Manassas	Planner II
Greg Fuller	Fairfax County Dep't of Transportation	Transportation Planner IV, Site Analysis Section
Noelle Dominguez	Fairfax County Dep't of Transportation	Coordination Section Chief
Penny Newquist	Loudoun County	Deputy Director

Name	Agency	Title
Michael Hewitt	Metropolitan Washington Airports Authority (MWAA)	Airport Planner
Timothy Canan	MWCOG	Planning Data and Research Program Director
Harun Rashid	NVTA	Transportation Planner
Monica Backmon	NVTA	Executive Director
Dan Goldfarb	NVTC	Program Manager
George Phillips	Prince William County Department of Transportation	Transportation Planner
Samuel D. Burns	Prince William County Department of Transportation	Transportation Planner
Chuck Steigerwald	PRTC	Director of Strategic Planning
Michael Gallagher	Town of Vienna	Public Works Director
Mark Duceman	Town of Herndon	Transportation Program Manager
Joshua Bateman	Town of Lovettsville	Planning Director & Zoning Administrator
Andrew Jinks	Town of Vienna	Transportation Engineer
Sonali Soneji	VRE	Planning Program Administrator

Additional Regional, Local, and State Representatives Invited but Unable to Attend

Jim Larsen	Arlington County Commuter Services	Bureau Chief
Calvin O'Dell	City of Manassas Park	
P. Yusuf	City of Manassas Park	
Doug Pickford	DATA	
Marie Pham	Fauquier County	
Sharon Affinito	Loudoun County Commuter Services	
Nick Ramfos	MWCOG – Commuter Connections	
Betsy Massie	PRTC	

Name	Agency	Title
Gregory Tkac	Town of Dumfries	Public Works Director
Richard West	Town of Dumfries	
Calvin Grow	Town of Leesburg	
William Moore	Town of Middleburg	
Dale Lehnig	Town of Purcellville	
Frank Cassidy	Town of Warrenton	
Barbara Nelson	VPA	
Mark Phillips	WMATA	
State Agency Staff		
Ciara Williams	DRPT	Transit Planner
Randy Selleck	DRPT	Rail Planning Project Manager
Terrell Hughes	VDOT - Co PMPD	Assisting Planning Director
Amir Shahpar	VDOT - NOVA	Modeling Manager
Maria Sinner	VDOT - NOVA	Assistant District Planning Administrator
Norman Whitaker	VDOT - NOVA	Transportation Planning Director
Michael Glass	VDOT - Planning	Intern
Olivia Mobayed	VDOT TMPD	Transportation Planning Program Manager - TDM / Park & Ride
Rusty Harrington	Virginia Department of Aviation	Manager, Planning and Environmental Section
Ronique Day	OIPI	Deputy Director
Jitender Ramchandani	OIPI	Transportation Planning Program Manager
Chris Wichman	OIPI	Transportation Planner
Katie Schwing	OIPI	Transportation Planner
Consultant Facilitators and Scribes		

Name	Agency	Title
Don Vary	VTrans Consultant team	Facilitator
John Cowart	VTrans Consultant team	Scribe
Rebecca Jablon	VTrans Consultant team	Scribe
Vlad Gavrilovic	VTrans Consultant team	Facilitator
Peter Hylton	VTrans Consultant team	Facilitator
Hannah Twaddell	VTrans Consultant team	Facilitator
Kristina Heggedal	VTrans Consultant team	Scribe
Robert Etter	VTrans Consultant team	Scribe
Taylor Gestwick	VTrans Consultant team	Scribe

3 AGENDA AND MATERIALS

Following a plenary presentation and discussion of the VTrans Needs Assessment method and performance measures, the participants broke into small groups to review the information developed for the region. They regrouped at the end of the meeting to share their findings and to hear about the process and schedule for developing, reviewing, and finalizing the VTrans Mid-term Needs Assessment.

At sign-in, each participant received a packet with the following materials, all of which are available for download from VTrans website.[1]

- Agenda
- Plenary presentation slides
- VTrans Summer 2019 Newsletter
- VTrans Mid-Term Needs Frequently Asked Questions (FAQ)
- Comment Form
- Regional maps, charts, and/or tables of the data. Detailed descriptions of each measure and analysis method are included in the plenary presentation slides.

4 SYNTHESIS OF COMMENTS

The following section provides a summary of comments about each performance measure, compiled from the plenary session, breakout groups, and comment sheets. The appendix includes transcripts of the sessions and sheets, including photos of the marked-up maps developed by each breakout group. After the participants have reviewed and vetted the draft report, OIPI will synthesize the comments that were associated with the maps and upload them to the online InteractVTrans map (http://www.vtrans.org/mid-term-planning/InteractVTrans). In addition to serving as a repository for regional workshop comments, InteractVTrans provides a publicly available resource for ongoing input from local stakeholders and the public. As noted in the plenary presentation, OIPI will present the initial list of needs to the Commonwealth Transportation Board in October 2019, and the final needs assessment with a request for Board action in December 2019.

[1] VTrans website: www.vtrans.org Location of workshop summaries: http://vtrans.org/get-involved/online-meetings/VTrans-Mid-Term-Needs-Regional-Workshops

Table 2 Synthesis of Comments

	Comment
	Congestion: Percent Person Miles Traveled in Excessively Congested Conditions (PECC)
1.	Extensive suburban growth in the region may not be fully captured in the data. To get a picture of recent and expected growth, OIPI should consult with local plans (e.g., Loudoun County).
2.	Generally, problems impacting more people should be a bigger deal. For instance, an impact on five people for one mile might be more important than an impact on one person for file miles. Data on trip and traffic volumes (VMT) may be a good additional measure that helps clarify trip length and the number of people affected.
3.	It would be helpful to have guidance on how different parts of the region designate UDAs differently.
4.	I-395 experiences congestion that does not show up in map with 90% threshold.
5.	Areas meriting examination— --George Washington Parkway, which impacted a lot of people when Metro was disrupted. --I-66: splits East/West --I-495: splits North/South (not symmetrical)
6.	Columbia Pike is a very important bus transit line. For instance, the corridor has higher transit ridership for bus than by either of the two VRE rail lines. However, it is not included in the buffer around the CoSS related to I-395.
7.	Congestion on I-95 South before Aquia, on Route 29 (multiple locations), and on Sudley Road south of I-66.
8.	Move the label for the Dulles Access Road. Because of its location overlapping with the Dulles Access Road, an I-495 label appears to apply to the Dulles Access Road.
9.	I-66 eastbound experiences congestion in the morning peak period that is not represented.
10.	Missing data/unidentified dotted lines: --Missing data on north I-395. --Between I-66 and I-495 --George Washington Parkway
11.	The congestion maps of daily averages do not show the full extent and severity of peak-hour traffic since use the 14-hour period dilutes peak-period congestion. This includes the Dulles Greenway, the Route 7 bypass, historic Waterford, and U.S. 15.
12.	The Dulles Connector is actually limited-access.
13.	The map should include several additional items— --Park-and-ride lots --Metro stations

14.	The maps show only parts of Route 1. Route 1 should be included in the congestion and reliability measures.
15.	There is also congestion at the exit off of the Dulles greenway to the route 15/7 bypass.
16.	There is congestion at the Dulles Greenway near the airport at the toll booth where traffic is going east in the morning.
	Congestion: Travel Time Index (TTI)
17.	Examine the TTI data at 15-minute increments. Identify general patterns by seeing how many 15-minute increments follow each other.
18.	The map needs to show difference between no data and TTI below 1.5.
19.	Use TTI with a threshold of at least 1.5. 1.5 is the equivalent of a level of service (LOS) of F, while 1.3 is the equivalent of a LOS of E. A threshold of 1.5 might not reveal much congestion in many other parts of the state.
20.	King Street at Beauregard Street is expected to show congestion.
21.	Route 123 seems to be missing and is expected to show congestion up to I-495.
22.	US15 experiences peak-period congestion that is exacerbated by crashes in part due to lack of a shoulder.
23.	Route 28 is severely congested during peak period. Congestion is most severe between I-66 and Prince William County.
24.	Route 7 going East from Leesburg experiences congestion. Traffic analysis needs to be done when signals are removed.
25.	Route 7 seems to be missing and is expected to show congestion along a longer length than it does. The all-day data period may dilute peak period congestion.
26.	Route 9 and Route 6 traffic coming from West Virginia (Jefferson County) also experience congestion.
27.	The US-50 corridor should show up more yellow/orange even within a 12-hour period and should be red during the peak period. The 12-hour period might be diluting the congested times.
28.	VA-236 and Braddock Road are expected to show more congestion.
	Reliability: Unreliable Delay (UD)
29.	Bus service reliability is closely related to congestion.
30.	Consider the implications of reliability for trip chaining.
31.	Data aggregated over the course of a day do not express the magnitude of unreliable travel experienced in the region.

32.	MATC and MWCOG are doing new occupancy survey, which might help inform vehicle occupancy assumptions.
33.	Recommend examining the correlation between the total number of crashes and unreliable delay.
34.	Some modes are inherently reliable (metro, walking) year-round, but they aren't shown on the map. Can we credit more reliable modes through a system to award points for reliability? (e.g., pedestrian, rail, bicycling)
35.	The threshold should be high enough so that there is variation among road segments. In map the showing weekday unreliable delay, the system looks homogenous (all blue) because the system is reliably bad. The map with weekend unreliable delay tells a better story.
36.	There are different weekday and weekend travel patterns.
37.	Farthest west park-and-ride lot at Purcellville experiences low reliability.
38.	Additional locations of delay on US-50, I-81, Routes 9 and 7, and Potomac River bridges.
39.	Connections to Loudoun Station (especially for transit) should be a focus for reliability.
40.	Route 50 is not appearing in the data, perhaps because peak-period travel is not distinguished.
41.	The outer loop of the Beltway has unreliable travel times that are not appearing on the map.
	Reliability: Buffer Time Index (BTI)
42.	When the Dulles Toll Roads switches to an HOV, will it add to congestion?
43.	For weekends, the entire 14-hour period is relevant. For weekdays, there should be greater focus on the peak period.
44.	The BTI analysis should focus on peak period. For example, the data for Route 28 south of Manassas does not reflect participants' perception of its unreliability. Peak period analysis is needed.
45.	The BTI range of 0.5 to 1.0 is a "canary in coalmine" of future problems.
46.	Route 110 is really a limited-access road. The Dulles Connector should also be considered limited-access since it connects to an Interstate Highway.
47.	There appears to be missing data (e.g., the beltway around the Town of Herndon)
	Passenger Rail: Amtrak Station On-Time Performance
48.	Consider overlaying rail reliability with road reliability.
49.	Include WMATA on maps.
50.	The map should also show Union Station (Amtrak and VRE) and L'Enfant (VRE).
51.	Missing areas of potential service on map: Tysons Corner, Rosslyn, etc.

	Passenger Rail: VRE On-Time Performance
52.	"Mode choice" was a VTrans2040 need category. You could use something similar for VTrans2045 and designated a mode choice need. Could VTrans use mode choice or access to transit with given headway frequencies within 15 minutes? Even if the headway data is not complete for all regions, it is worth considering for northern Virginia. It could also be overlaid with existing land use densities for NOVA and for other high-growth regions or compared with expected mid-term development.
53.	Review the Alexandria Transit Vision for an example of modeling transit headways.
54.	Suggest combining the assessment of transit service with land use to look at places where land use is supportive of more transit.
55.	The region has demand for more VRE trains, but there is limited capacity. Even though the service is reliable, the service does not cover demands. There is a desire for increased passenger capacity.
56.	The two-track Long Bridge over the expansion is a major bottleneck, with a project to expand it to four-tracks.
	Accessibility: Transit Access Deficit to Activity Centers
57.	Include frequency in measure of service. Transit lines and stops are all not equivalent because frequency of service various among lines. A deficit might exist and not be recognized if service frequency isn't considered.
58.	Include WMATA rail stations as activity centers.
59.	Last-mile connections need to remain flexible to allow for scooters, autonomous vehicles, and other transportation options that may emerge as technology develops further. The accessibility measures need to be flexible to account for these future transportation options, and to allow for flexibility with fixed-route transit.
60.	Recommend reaching out to NVTC staff, who recently did a study on gaps in the transit network.
61.	Recommend using origin/destination data to look at congestion patterns and transit accessibility. The way transit is configured in the region might mean you could go from Manassas to Dulles, but you might have to travel through DC first to get there.
62.	There needs to be another layer of geography between regional activity centers and UDAs to capture secondary activity centers and emerging areas.
63.	Transportation Planning Board (TPB) has polygons for activity centers, while the current maps show activity center points.
64.	Corridor-long high transit deficit that's not showing up because it isn't designated activity centers, even though it has characteristics of an emerging activity center (along Route 50).
65.	Missing activity centers: Columbia Pike, Gainesville, Haymarket, Alexandria, Herndon.

	Travel Options: Disadvantaged Population Beyond ¼ Mile Access to Fixed Route Transit
66.	All transit results in Loudoun are subject to change over next few years because there is a lot of work underway (e.g., paratransit to rail station). In the future, this work may improve Loudoun County's disadvantaged residents' transit access.
67.	Consider English proficiency and vehicle ownership/availability instead of age for disadvantaged criteria.
68.	Recommend examining MWCOG's equity emphasis areas.
69.	The quality of service as described by frequency and destinations served matters in addition to basic transit coverage.
70.	Annandale Town Center has high potential for transit as an activity center and with disadvantaged population density.
71.	Areas around Falls Church could benefit from additional transit access for transit disadvantaged.
72.	Great Falls and Clifton are showing up as disadvantaged. Population age could skew the results.
73.	McLean is marked as a disadvantaged region. This may be because of age, but the wealth in the region makes the title misleading.
	Safety: Vehicle Crashes
74.	Additional measures related to safety: VMT, trip lengths, speed. Safety is also affected by systemic factors beyond geometry, such as VMT, trip lengths, speed, and multimodal options.
75.	It would help to add a measure for mode share. This would support transit access goal.
76.	It would help to split out bike/ped vs. vehicular crashes.
77.	Recommend clarifying map label to show that it shows all crashes (including bike/ped).
78.	The team may need to consider reasons for crashes to distinguish design-related crashes from other crashes (e.g., eliminate DUI since they are not primarily related to roadway design).
79.	Crash locations in Arlington where pedestrians cross a highway-oriented road segment heading to or from Georgetown, and on Watson Road and Evergreen Mills Road in Loudoun County.
80.	Serious crashes sometimes occur where substandard roads meet state highways, such as Routes 7, 9, 15, 287. Other locations of crashes mentioned include Lovettsville Road, Route 7 westbound at Yellow Schoolhouse Road, Fairfax County Parkway down to the Dulles Toll Road, Route 9 at Hillsboro Road, and the W&OD Trail roadway crossing in Herndon.
81.	Additional measures related to safety: VMT, trip lengths, speed.
	Economic Development: Urban Development Areas and VEDP Business Ready Sites

82.	Consider economic opportunity areas for activity centers. In addition to VDP, there is the potential to look at economic opportunity zones for additional information. It's not necessarily a center of activity, but the area has the right demographics to attract residential or commercial development. There is one in Manassas and are several in Fairfax.
83.	In previous years, Weldon Cooper had forecasted declining population for some urban areas even though the trend on urban area population change has reversed, with urban areas showing population growth. VTrans should consider this possible error in any scenarios or other future-level analysis.
84.	Review the state freight plan.
85.	There is a need for metrics to capture small lot redevelopment / infill as economic activity areas since the VDP sites have a 25-acre minimum that doesn't allow for smaller, in-town sites for urban redevelopment. Parkway Center in Prince William County is emerging activity center.
86.	Potential new UDA in Alexandria.

5 Appendix: Comments from Plenary Presentation, Breakouts, and Workshop Handouts

i. Comments during Plenary Presentation

The following section summarizes questions and comments about the topics covered during the plenary presentation by Jitender Ramchandani. Questions from participants are shown in italics, followed by brief responses from the plenary speaker.

Introduction/Overview

- Jitender re-introduced the purpose of VTrans, the planning context and the federal and state requirements.
- He emphasized that the data and analysis presented is meant to spur discussion, and is not the final Needs. He requested that participants also review the data with an eye for completeness/accuracy.

VTrans Needs Assessment Process

Jitender Ramchandani asked the participants to answer with a show of hands to several questions to gauge the group's level of experience with VTrans process.

- When asked if they had worked or interacted with VTrans previously, approximately half of participants raised their hand affirmatively.
- When asked if they had submitted projects to SMART SCALE, almost everyone raised their hand in the affirmative.

Congestion Measures

Percent Person Miles Traveled in Excessively Congested Conditions (PECC)

Jitender Ramchandani illustrated differences in how people implicitly identifying congestion by asking participants to answer with a show of hands if they considered traveling at several speeds on a hypothetical 70 mile per hour-road to indicate congestion.

- **Traveling 42 mph on a 70-mph road (60% of the speed limit):** most attendees raised their hand indicating that they consider this congestion.
- **Traveling 52 mph on a 70-mph road (75% of the speed limit):** a handful of attendees raised their hand indicating that they consider this congestion.
- **Traveling 63 mph on a 70-mph road (90% of the speed limit):** No attendees raised their hand indicating that they consider this congestion.

ACCESSIBILITY TO ACTIVITY CENTERS

Disadvantaged Population Beyond ¼ Mile Access to Fixed-Route Transit

- Does the poverty threshold vary by region? Yes, and it also varies by household size.
- A participant highlighted that Metropolitan Washington Council of Government (MWCOG) has developed Equity Emphasis Areas[2] whose methodology and resulting geography could be compared with this measure.
- A participant made a comment about the quality of transit access mattering, asking if transit frequency is every 60 minutes is the location really accessible?

URBAN DEVELOPMENT AREAS (UDAS)

- When asked if their jurisdiction contained urban development areas (UDAs), a handful of participants raised their hand.

SUMMARY/WRAP-UP

- The facilitators briefly summarized the discussion and comments received at each table
- Jitender asked the group if there was anything that wasn't covered that the participants expected to cover. There was no discussion on this.

[2] MWCOG (2017). Equity Emphasis Areas for TPB's Enhanced Environmental Justice Analysis. Available at https://www.mwcog.org/transportation/planning-areas/fairness-and-accessibility/environmental-justice/equity-emphasis-areas/.

ii. Breakout Session Comments

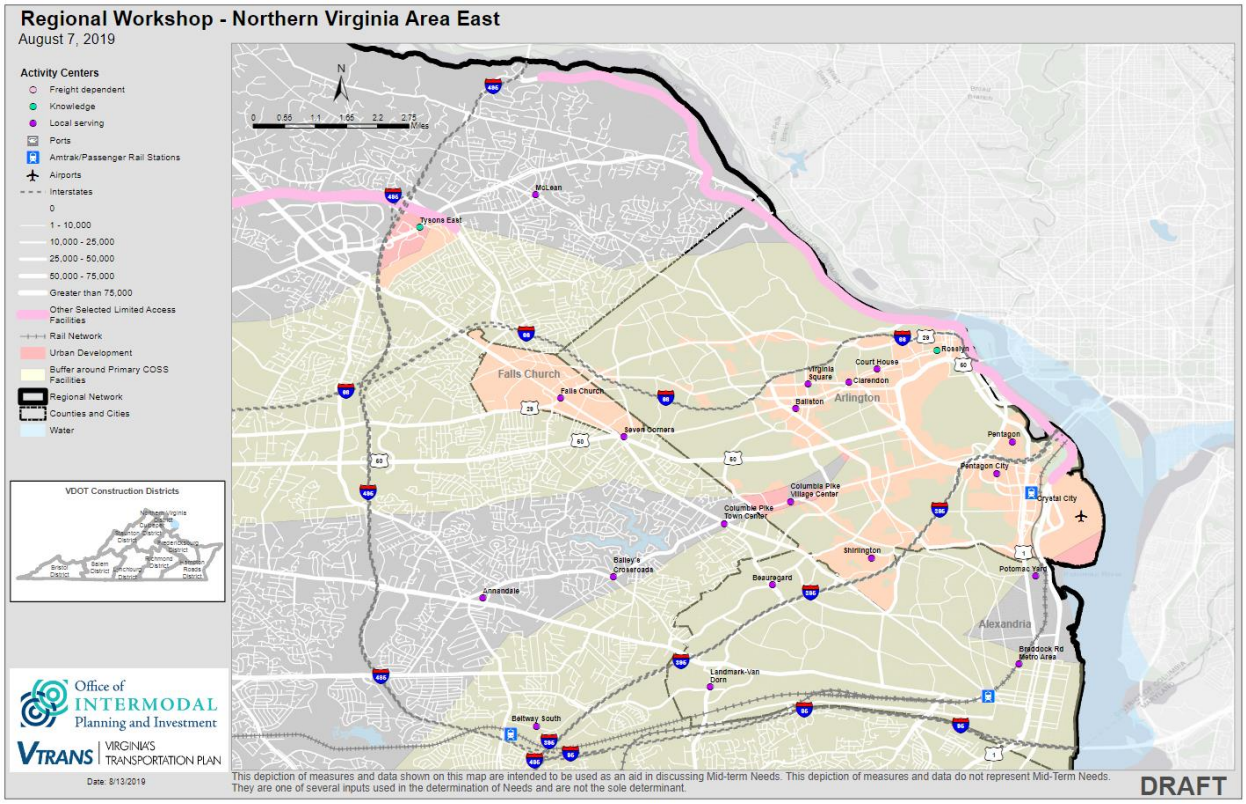
The following synthesis reflects input from all the breakout groups. Participants were asked to reflect broadly upon the issues addressed by the performance measures (i.e., congestion, reliability, passenger rail on-time performance, accessibility to activity centers, travel options for disadvantaged populations, safety, and economic development. They were also asked for input on the regional applicability of each measure.

Facilitators and scribes assigned to each group recorded the input by writing notes on a flip chart and on a laptop. For comments with geographic specificity, facilitator and/ or group members placed numbered stick-on dots onto a poster-sized base map and noted the meaning of the numbered dot on the flip chart.

Participants were invited to jot down additional notes on the Comment Form and return it to a facilitator at the end of the meeting, or to fill it out later and email their responses to OIPI staff. A summary of input from the written Comment Forms is included at the end of this section

Group 1 Comments (Focused Eastern Part of the Region)

Breakout Group 1 Map



Note: Breakout group 1 did not mark up a map for the region.

Congestion

Percent Person-Miles Traveled in Excessively Congested Conditions (PECC)

- Trip data/traffic volumes (VMT) may be a good additional measure.

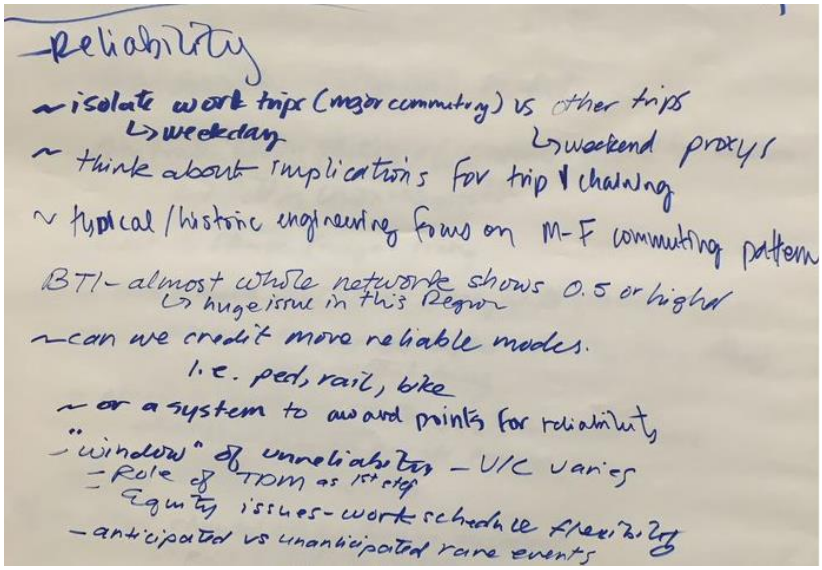
- Generally, problems impacting more people should be a bigger deal. For instance, an impact on five people for one mile might be more important than an impact on one person for file miles. The impacts of investments may also vary by geography since smaller projects can have a really big impact in urban areas (e.g., Rosslyn/Ballston Corridor).
- A mix of modes is necessary for the urban regions.
- Areas meriting examination—
  - George Washington Parkway, which impacted a lot of people when Metro was disrupted.
  - I-66: splits East/West
  - I-495: splits North/South (not symmetrical)
- Missing data/unidentified dotted lines:
  - Missing data on north I-395.
  - Between I-66 and I-495
  - George Washington Parkway
- *Are HOV/Express Lane Lanes accounted for?* INRIX/vehicle data on HOV lanes is difficult/impossible to get, vehicles switch lanes. Some counters track Bluetooth names to count cars. Nonetheless, volumes are important and could be realized in a transit/BRT line.
- *How often is data refreshed? Is it 2 years (related to the SMART SCALE cycle), 4 years, or another period?* This is a policy decision for the Commonwealth Transportation Board (CTB).
- Activity centers overlap.
- Revitalization Districts could also be UDAs, but with density requirements and a minimum level of service for development.

Travel Time Index (TTI)

- The map needs to show difference between no data and TTI below 1.5.
- The data is for the 14-hour period between 6 AM and 8 PM, which doesn't emphasize peak-period congestion. This has implications for travel demand management.
- Emphasis on destination areas. Other measures to emphasize paths over reason/attractions.
- Revitalization areas: 3+ floor area ratio (FAR) is a state requirement.
- Route 29 Northbound in Falls Church getting onto I-66, but all drivers are single-occupant vehicles (SOV).
  - Evidence for better transit connections/routes.
  - Think about magnitude vs. choices vs. visibility.

Reliability

Excerpt of Group Facilitator's Comments on Flip Charts



- Limited VRE service on weekends increases weekend auto trips for longer distances.
- Typical/historical focus on Monday through Friday commuting patterns.
- Non-automotive modes
  - You cannot use transit at any time of the day.
  - Some modes are inherently reliable (e.g., metro, walking) year-round, but they aren't shown on the map.
  - Can we credit more reliable modes through a system to award points for reliability? (e.g., pedestrian, rail, bicycling)
  - Indicate the return on investment in alternative reliable travel options: transit, walking, bicycling.
  - Bus service reliability is closely related to congestion.
- Consider the implications of reliability for trip chaining.
- Travel demand management and operational improvements should be a first step in addressing unreliability. Focusing on different travel times can spread congestion to more manageable levels, TDM options to encourage alternative travel times.
- There are equity issues related to work schedule flexibility to consider in addressing reliability.
- Point-to-point local air travel technology could affect reliability at some point in the future. At this point, transportation agencies are monitoring the situation. Several companies are testing vehicles and need regulatory approval. Autonomous helicopters could have highly localized and context-based effects.
- Large population growth is forecasted over the planning period.

Person Delay During Unreliable Conditions

- There are different weekday and weekend travel patterns as a function of peak-period weekday commuting, travel and commuting at other times (e.g.,

shift workers, students, non-drivers), and retail trips among other trip purposes on the weekend.

Buffer Time Index (BTI)

- This is one of the most important measures.
- Reliability is a huge issue in this region, as shown by the fact that nearly the entire network shows a BTI of 0.5 or higher.

Passenger Rail On-Time Performance

- Participants discussed the VRE/Amtrak "step-up" ticket.
- Factors in unreliability
  - Off-peak rail travel is more unreliable because of freight holding traffic during peak times.
  - VRE and Amtrak do not have control over freight service. This is biggest impact on reliability. Need to work at state level. There are other dispatching issues related to CSX dispatching tolerances for late trains, relative priority between Amtrak and VRE, and the fact that VRE has more influence over CSX and Norfolk Southern than Amtrak).
  - Additionally, hot weather requires trains to travel more slowly, producing delays.
  - The two-track Long Bridge over the expansion is a major bottleneck, with a project to expand it to four-tracks.[3]
- Can there be a reliability measure for long-distance commuter buses and vanpools using HOV lanes?

Amtrak

- How many Amtrak riders are interstate and how many are intrastate?
- Changes to maps—
  - The map should also show Union Station (Amtrak and VRE) and L'Enfant (VRE).
  - Considering overlaying rail reliability with road reliability.
  - WMATA should be included on maps.
  - Show activity centers.
  - Missing areas of potential service: Tysons Corner, Rosslyn, etc.
  - Showing frequencies and reverse commutes would also be helpful.

Virginia Railway Express (VRE)

- Reliability is measured with a 5-minutes buffer around arrival time at the station.
- Amtrak tickets can be bundled with VRE tickets.
- Extend map to L'Enfant.
- VRE does not have weekend service. Is there demand for weekend service?
- Moreover, there are few services for reverse commuters.

[3] Long Bridge Project (2018). Available at http://longbridgeproject.com/project-description/.

Accessibility to Activity Centers

- The Transportation Planning Board (TPB) has polygons for activity centers, while the current maps show activity center points.
- Since many trips are short distance (3 miles or less), there is potential to shifts trips to the bike/ped network through network expansion, which is also a relatively low-cost improvement. For instance, the Washington and Old Dominion (W&OD) Trail through Fall Church and Reston isn't lit, which limits winter and nighttime uses. Bike/ped mode share also depends on supportive land uses.
- The transit access deficit is low in places like Rosslyn where transit is competitive and driving is relatively difficult.
- Last-mile connections need to remain flexible to allow for scooters, autonomous vehicles, and other transportation options that may emerge as technology develops further. The accessibility measures need to be flexible to account for these future transportation options, and to allow for flexibility with fixed-route transit.
- The proposed seven-mile buffer for biking around activity centers seems alright.
- Although there is a strong desire for development along routes 7 and 29, signalization, site access, and the urban context make this difficult. There is also a balance between local and through traffic on these routes. May need separate standards for urbanization revitalization.
- Missing activity centers—
  - No freight-dependent activity centers
  - Only inside the beltway
  - Columbia Pike, Gainesville, Haymarket, Alexandria
- What is the threshold for qualifying as an activity center?

Travel Options for Disadvantaged Populations

- The quality of service as described by frequency and destinations served matters in addition to basic transit coverage.
- Viability for fixed-route transit is relative.
- McLean has high transit disadvantaged, but this does not account for income and ability to drive.
- Areas around Falls Church could benefit from additional transit access for transit disadvantaged.
- Route 50 and south around Arlington.
- The details of the methodology matter a lot, maybe more so in urban areas.

Safety

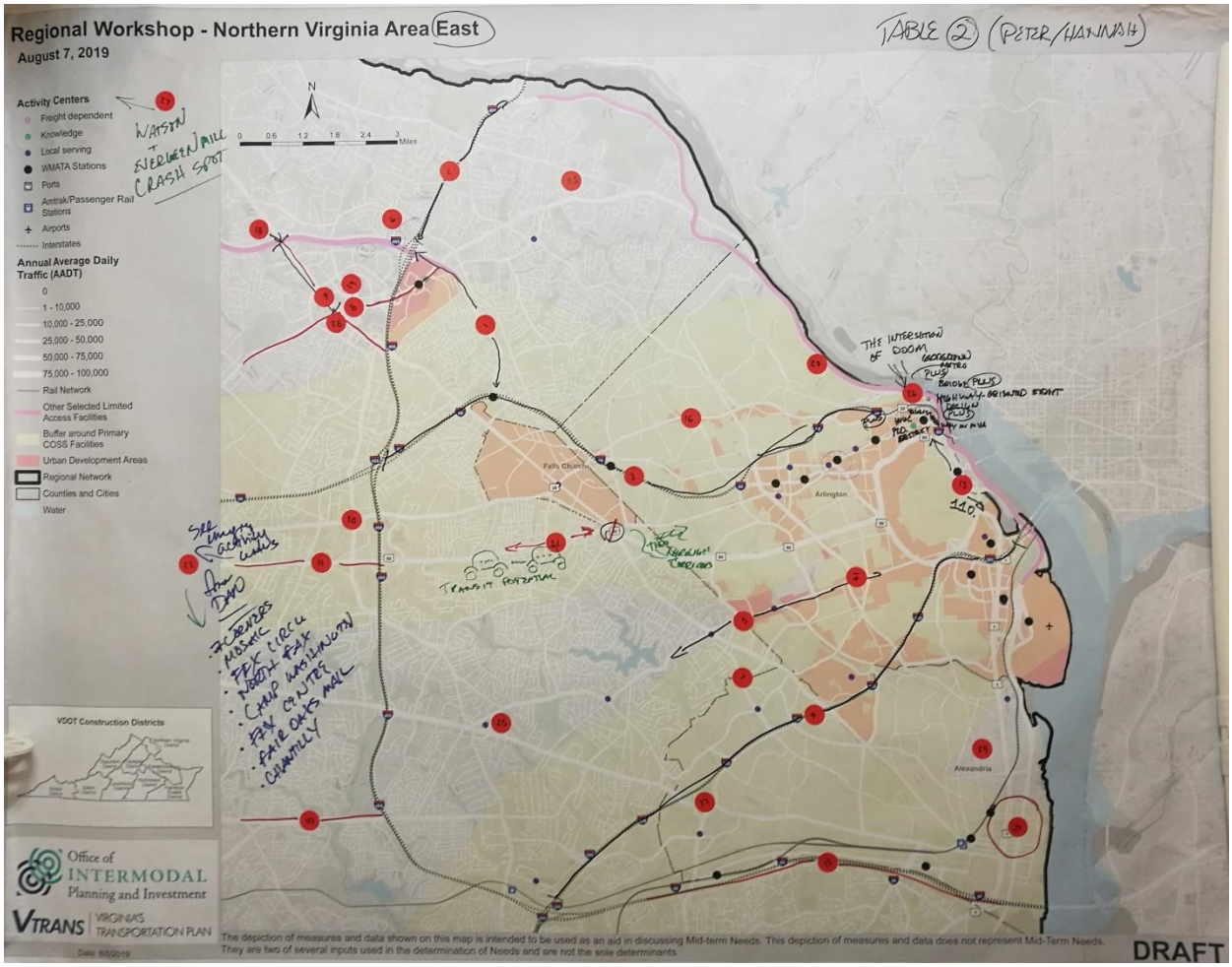
- There are many more crashes with injuries than fatal crashes.
- Additional measures related to safety: VMT, trip lengths, speed.
- There may be latent non-automotive travel demand that is being suppressed by safety issues. You have to prove demand when there are no pedestrians because of safety issues.
- Safety is also affected by systemic factors beyond geometry, such as VMT, trip lengths, speed, and multimodal options.

Economic Development

- This relates to a different type of economic development than the new headquarters for Nestle and Amazon in northern Virginia.
- There must be a balance between rural areas and regional networks. For instance, bigger transportation improvements are often not in localities' control, especially in rural areas.
- The northern Virginia region has a big focus on knowledge workers.
- Companies ask, "Can we afford a 'spec building'"?
- Other access programs to economic development sites exist.
- Review the state freight plan.

GROUP 2 COMMENTS (FOCUSED ON EASTERN PART OF THE REGION)

Breakout Group 2 Marked-Up Map



Congestion

Percent Person-Miles Traveled in Excessively Congested Conditions (PECC)

1. The Dulles Connector is actually limited-access.
2. I-495 northbound experiences peak-period congestion.
3. I-66 eastbound experiences congestion in the morning peak period that is not represented. Tolling in afternoon peak on I-66 may be more accurate period to study.

4. I-395 experiences congestion that does not show up in map with 90% threshold.
5. Columbia Pike is a very important bus transit line. For instance, the corridor has higher transit ridership for bus than by either of the two VRE rail lines. However, it is not included in the buffer around the CoSS related to I-395.
6. Move the label for the Dulles Access Road. Because of its location overlapping with the Dulles Access Road, an I-495 label appears to apply to the Dulles Access Road.

Travel Time Index (TTI)

7. King Street at Beauregard Street is expected to show congestion. The single lanes may indicate TTI of 1.5+ only in one direction, but this location out to show congestion in both directions.
8. Route 123 seems to be missing and is expected to show congestion up to I-495.
9. Route 7 seems to be missing and is expected to show congestion along a longer length than it does. The all-day data period may dilute peak period congestion.
10. VA-236 and Braddock Road are expected to show more congestion.
11. The US-50 corridor should show up more yellow/orange even within a 12-hour period and should be red during the peak period. The 12-hour period might be diluting the congested times.

General Notes on Congestion Issues

- *Why are some limited access roads pink?* These are a set of non-Interstate Highway limited access roads for which less data exists than for Interstate Highways. VDOT is developing supplemental data to analyze these roads.
- *Should congestion measures be based on a road's design speed rather than the speed limit? If it were based on the design speed, it would make congestion appear more severe than it does on the map? Consider traffic density to identify more precisely where the flow breaks down.* The speed limit is a policy decision that has been enacted into law. VTrans wants to consider congestion in the framework of the law.
- *Are express lanes included in the congestion measures?* No, in part because express lanes adjust tolling to achieve uncongested conditions and in part because the fact that many are reversable complicates the analysis.
- Some participants noted that there is so much travel outside of peak period that it washes out the data of peak-period congestion and does not show the complete picture of congestion. Other participants were cautious about focusing so much on peak travel since there is so much travel outside of the peak period.
- The PECC map with the 90% best reflects peak-period congestion, but it still does not depict all the congestion experienced in the peak period.
- Buffers around Corridors of Statewide Significance (CoSS)
  - Don't focus too much on Interstates. The regional/local concerns with address with SMART SCALE are our primary interest.
  - Improvements on one route can potentially help solve congestion problems on a parallel route by providing alternatives.
  - The 5-mile (2.5 miles on each size) buffer around CoSS roads is simply an analysis zone.
  - Columbia Pike is a very important bus transit line. For instance, the corridor has higher transit ridership for bus than by either of the two VRE

rail lines. However, it is not included in the buffer around the CoSS related to I-395.

- Urban Development Areas (UDAs)
  - UDA designation is a political decision that is outside of the VTrans process.
  - It would be helpful to have guidance on how different parts of the region designate UDAs differently. UDA are intentionally not supposed to be sprawling so there is a density requirement but there are differences in the amount of land occupied by single-family homes.

Reliability

Person Delay During Unreliable Conditions

12. The outer loop of the Beltway has unreliable travel times that are not appearing on the map. The Woodrow Wilson Memorial Bridge causes problems that sometime back up onto the roads that feed into it and even more broadly into the rest of the city in severe cases. It may have more unreliable congestion than is represented on map.

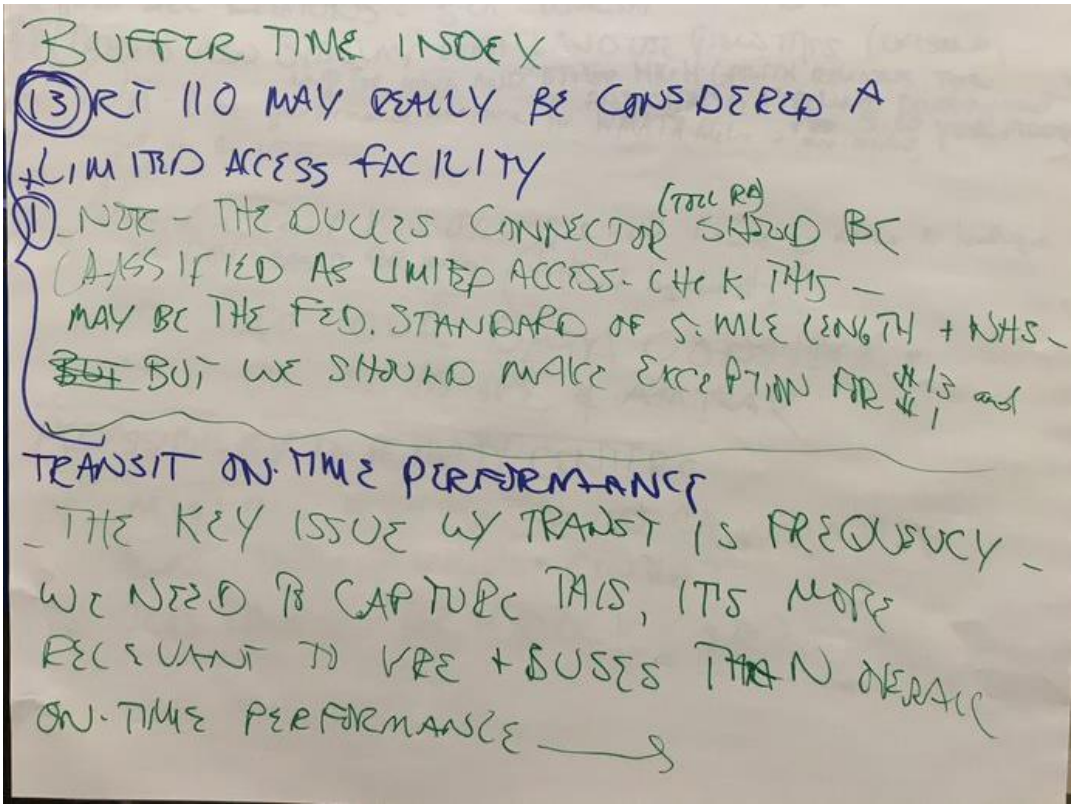
- *How do you calculate person numbers?* It is based on the number of hours on weekend/weekday days. There is not a good dataset for vehicle occupancy, so it is based on an average for personally owned vehicles. It does not show heavy transit on the corridor.
  - MATC and MWCOG are doing new occupancy survey, which might help inform vehicle occupancy assumptions.
  - Household travel surveys conducted by MPOs could help inform more regional occupancy rate calculations.

Buffer Time Index (BTI)

13. Route 110 is really a limited-access road. The Dulles Connector (#1) should also be considered limited-access since it connects to an Interstate Highway.

- Nonrecurring congestion is very important for freight because it impedes companies' ability to make deliveries on-time.
- It is interesting that there are less reliable conditions on the ramp interchanges of I-395.

Excerpt of Group Facilitator's Comments on Flip Charts



Passenger Rail On-Time Performance

- Issue that limits VRE is it can't run all the trains that they want to run because there is not capacity on the track. VRE could fill 4 times as many trains.
- Frequency matters for all transit in terms of attracting people. VTrans needs a measure to capture transit frequency and / or headways. For instance, VTrans could assess access to transit using a filter to determine how many people have access to transit that comes every 15 minutes.
- "Mode choice" was a VTrans2040 need category. You could use something similar for VTrans2045 and designated a mode choice need. Could VTrans use mode choice or access to transit with given headway frequencies within 15 minutes? Even if the headway data is not complete for all regions, it is worth considering for northern Virginia. It could also be overlaid with existing land use densities for NOVA and for other high-growth regions or compared with expected mid-term development.
- There are several challenges related to use of transit headways in a statewide needs-related measure. One is the difficulty of defining a level of transit access that is "good." People disagree on what good access means. A second challenge is that in many parts of the state data on transit frequency is unavailable. Some participants expressed that the measure could be customized to the data available in Northern Virginia or that U.S. Census Bureau commuter data might help.
- Suggest combining the assessment of transit service with land use to look at places where land use is supportive of more transit.

- On-time performance measure for WMATA Metro is also needed, just like for VRE.
- Review the *Alexandria Transit Vision*[4] for an example of modeling transit headways.

Accessibility to Activity Centers

14. Is the Columbia Pike town center and village center included? (This activity center is included on the activity center list).
15. Is Alexandria Old Town included? Braddock and King Street are listed and on map, but together the three are like a "local activity center."
16. US-16 (Old Dominion Drive and Lee Highway) has corridor-style development.
17. There needs to be another layer of geography between regional activity centers and UDAs to capture secondary activity centers and emerging areas.
18. Accessibility to activity centers is also about walkability from stations to the center. Every Metro station is a kind of activity center with first/last-mile walkability and street grid-related needs. This is very important at Silver Line stations (#18). Mode split of trips in Ballston is important. There are a lot of pedestrian trips for purposes other than accessing the Metro or commuting.
19. Tysons Corner highlights the need for first- and last-mile access to the transit station because there is no grid roadway network even though it has as much office space as downtown Baltimore and downtown Richmond combined. It should also It show up as more of an activity center transit access deficit.
20. Fairfax Mosaic District (Fairfax County) has decent access with high-frequency transit and a high level of service.
21. Route 50 to Route 28 is an ideal transit corridor. It is parallel to I-66 (in Arlington more of a through route), but in Fairfax County it is more of a multimodal commercial corridor
22. Corridor-long high transit deficit that's not showing up because it isn't designated activity centers, even though it has characteristics of an emerging activity center. The corridor goes along Route 50 and includes some of the following locations—
    - 7 Corners
    - Mosaic
    - Fairfax Circle
    - Northfax (Route 50 and 123)
    - Camp Washington (Little River Turnpike and Route 50)
    - Fairfax Center
    - Fair Oaks Mall
    - Chantilly (commercial corridor)

- There is a major development at I-395 and Duke Street: Landmark Intermodal Center (current SMART SCALE project)

[4] City of Alexandria. *Alexandria Transit Vision*. Updated June 24, 2019. Available at https://www.alexandriava.gov/tes/default.aspx?id=104193.

Travel Options for Disadvantaged Populations

23. McLean is marked as a disadvantaged region. This may be because of age, but the wealth in the region makes the title misleading.
24. This block group has transit along its border, but it's not indicated as being served by transit because the analysis requires the centroid to be within ¼ mile of a transit stop. The block group centroid might be too far away, but the long ends actually have transit service.
25. Annandale Town Center has high potential for transit as an activity center and with disadvantaged population density.

- MWCOG's equity analysis considers income and disability, but not age.

Safety

26. One of the most dangerous spots in Arlington because it is a highway-oriented road segment with many pedestrians using the crosswalk to access Georgetown from the Rosslyn Metro station. Bicyclists and pedestrians have to cross several roads.
27. Watson Road and Evergreen Mills Road is a crash hotspot in Loudon County.
28. Some participants were surprised that there were not more fatality collisions in Tysons Corner. This may be because congestion keeps speeds low. It would be interesting to examine crashes in light of ADT to contextualize.

- DUI/alcohol-related crashes could be segregated from safety dataset because they relate less to roadway geometry than other crash types.
- It would help to add a measure for mode share. Would support transit access goal.

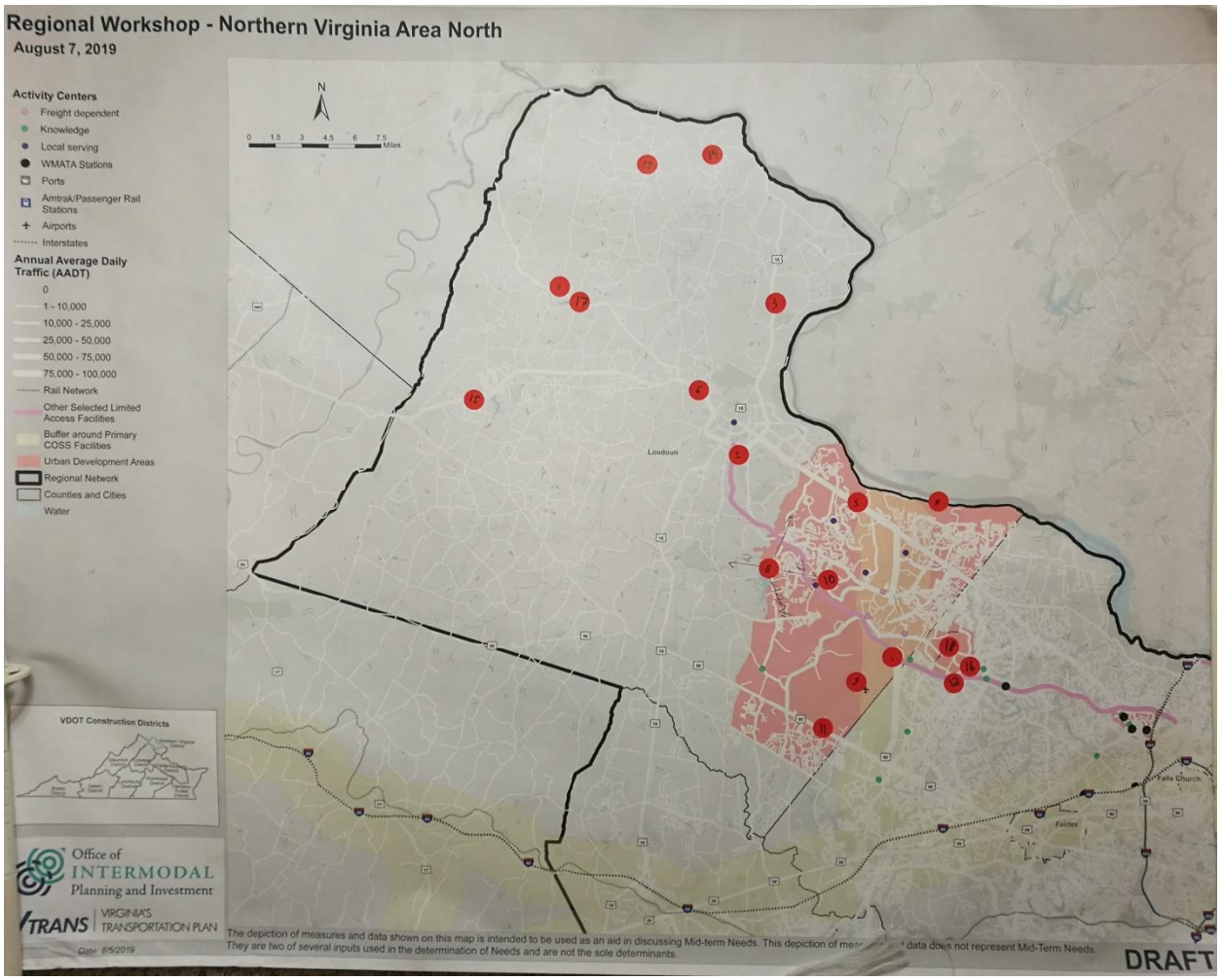
Economic Development

29. Potential new UDA in Alexandria. Need follow-up on UDA needs survey.

- In previous years, Weldon Cooper had forecasted declining population for some urban areas even though the trend on urban area population change has reversed, with urban areas showing population growth. VTrans should consider this possible error in any scenarios or other future-level analysis.
- VTrans needs a mode share/transit performance measure.

GROUP 3 COMMENTS (FOCUSED ON THE NORTHWESTERN PART OF THE REGION)

Breakout Group 3 Marked-Up Map



Congestion

- The congestion maps of daily averages do not show the full extent and severity of peak-hour traffic since use the 14-hour period dilutes peak-period congestion.
- Specific roads mentioned for congestion include—
  - Dulles Greenway
  - Route 7 bypass (regional traffic issue)
  - Historic area of Waterford (residents as unhappy to have congestion on a small historic town road)
  - US-15.
- Extensive suburban growth in the region may not be fully captured in the data.
- OIPI should consult with Loudoun County's recent plans.
- Participants also noted areas of slowdown on the maps that are not caused by congestion.
  - Vienna experiences slowdowns on Maple Avenue because of high pedestrian traffic.

  - Loudoun County wants to slow traffic down on main streets, so it wants to move pedestrians to separate facilities for safety purposes.
- How is their interaction between reducing congestion on main drags and street calming projects?
  - Think about different travel markets and how congestion problems will be fixed
  - These needs compete with needs for urban development as well
- Airport freight usually comes in during the early morning and is out to the distribution centers before peak hours.
- There is frustration of paying high tolls and the desire to build out roads going east-west so people can stay off the Dulles Greenway.

Percent Person-Miles Traveled in Excessively Congested Conditions (PECC)

1. There is congestion at the Dulles Greenway near the airport where the toll booth is going east in the morning.

- There is also congestion at the exit off of the Dulles greenway to the route 7 bypass.

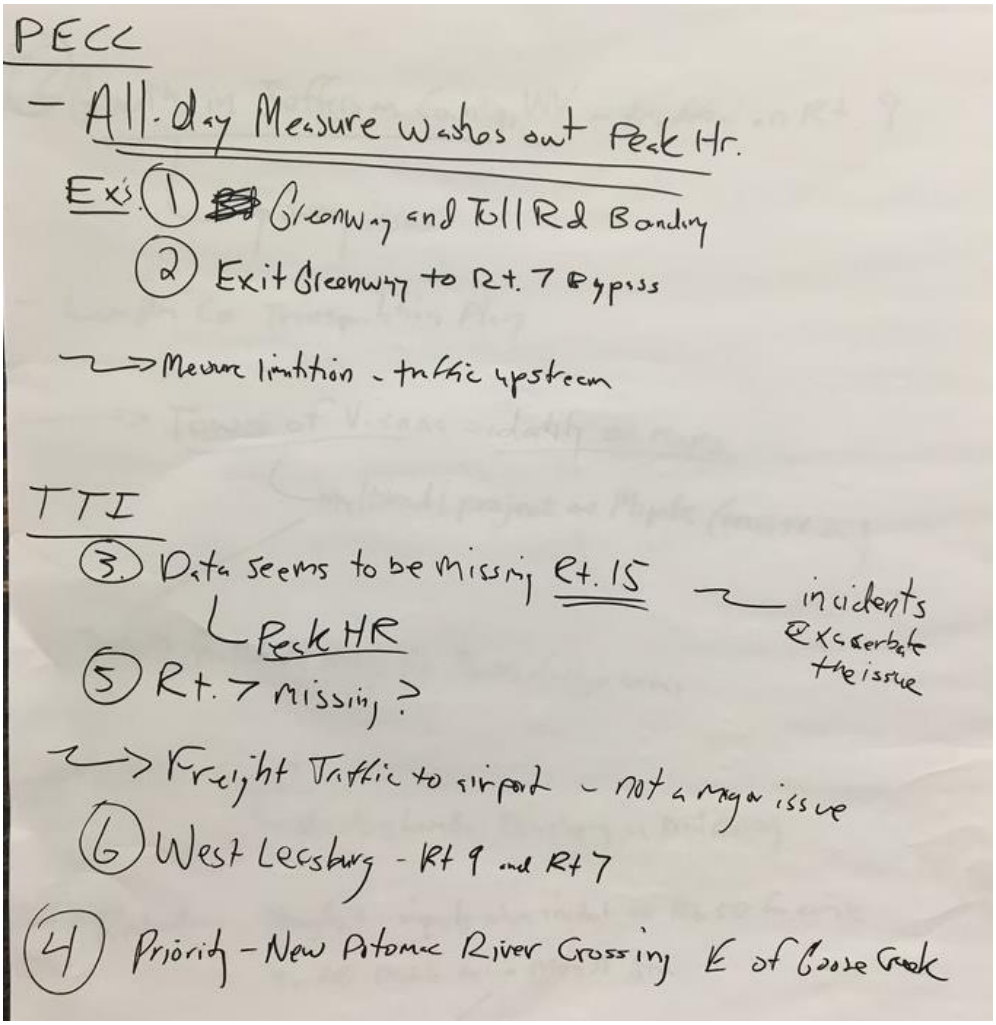
Travel Time Index (TTI)

2. Dulles Greenway at US-15.
3. Route 15 experiences peak-period congestion that is exacerbated by crashes in part due to lack of a shoulder.
4. There is a new crossing on the Potomac River planned east of Goose Creek.

5. Route 7 going East from Leesburg experiences congestion. Traffic analysis needs to be done when signals are removed.
6. Route 9 and Route 6 (sticker 6) traffic coming from West Virginia (Jefferson County) also experience congestion.
7. Traffic calming project with roundabouts.
8. There is a need for more east-west routes so people have alternatives to the Dulles Greenway in Loudoun County.

- There are several other new projects affecting TTI.
  - Multimodal project on Maple (Main St. area of Vienna)
  - Safety/multimodal needs for towns / village areas of Vienna.
- Western Loudoun County is developing as a rural economy.
- There is a need for redundancy in the region. For instance, when there is a crash on Route 50, traffic diverts to the Main Street area. How do you balance throughput and local needs?

Excerpt of Group Facilitator's Comments on Flip Charts



Reliability

Person Delay During Unreliable Conditions

9. Farthest west park-and-ride lot at Purcellville experiences low reliability.
10. Connections to Loudoun Station (especially for transit) should be a focus for reliability.
11. Route 50 is not appearing in the data, perhaps because peak-period travel is not distinguished.

- Data aggregated over the course of a day do not express the magnitude of unreliable travel experienced in the region.
- Additional locations with low reliability—
  - US-50 is a heavily congested corridor that is not appearing prominently on the reliability maps.
  - Crashes on I-81 can also cause unexpected delays for travelers.
  - There is unreliable travel and congestion on the small number of bridges across the Potomac River, and this affects access to the Dulles airport for residents of Montgomery County, Maryland, who are increasingly opting to travel out of BWI rather than Dulles or Reagan according to an air passenger

survey by MWCOG. This needs to be solved through cross-border coordination with Maryland DOT (MDOT). Dulles and BWI compete for different markets, with BWI being more tourist-oriented, while Reagan and Dulles more heavily serve business travel. However, this affects economic competitiveness.
  - Congestion occurs when there is a crash at the intersection of Routes 9 and 7.
- Regional coordination is needed among Fairfax, Loudoun, and Prince William Counties.

Buffer Time Index (BTI)

- The BTI range of 0.5 to 1.0 is a "canary in coalmine" of future problems.
- There appears to be missing data Herndon e.g., the beltway around the Town of Herndon)
- The Washington and Old Dominion (W&OD) Trail is essentially a bike highway.
- When the Dulles Toll Roads switches to an HOV, will it add to congestion? This relates to HOV policy for the Dulles Toll Road.

Passenger Rail On-time Performance

- Northbound Amtrak trains in Virginia are typically more reliable northbound than southbound.
- Is VRE still considering extending the Manassas Line to Gainesville?
- MARC (Maryland Area Regional Commuter) service also serves commuters in the region, with some western Loudoun residents taking the MARC train from Brunswick, MD to Union Station.
- Participants also discussed future Silver Line Metro stops and the possibility of using park-and-ride lots, shuttle buses and small vans with service to park-and-ride lots, and Uber commuter services to support travel to the stations.

Accessibility to Activity Centers

12. Town of Herndon Metrorail center / UDA is missing as an activity center.

- Accessibility to activity centers describes how many workers can reach an activity by a 45-minute drive, a 45-minute transit ride (with a walk buffer at the end), a 1-mile walkshed, and a 7-mile bike shed. The western part of the region has lower density than other parts of the region, which makes both transit access and auto access be low and roughly equivalent, and causes the transit deficit between the two to be small.
- Include frequency in measure of service. Transit lines and stops are all not equivalent because frequency of service various among lines. A deficit might exist and not be recognized if service frequency isn't considered.
- The less dense western areas have fewer work trips and with less density this gives it a lower appearance.
- Include WMATA rail stations as activity centers.
- The Route 7 BRT has been proposed between the Spring Hill Washington Metro station and the Mark Center. It would be a new transit option for the region.

Travel Options for Disadvantaged Populations

13. Desired park-and-ride commuter lot for the town of Lovettsville.

- Participants generally prefer 80th percentile threshold. Establishing a lower threshold would help capture more data and more potential issues at block groups for data that is not fine.
- All transit results in Loudoun are subject to change over next few years because there is a lot of work underway (e.g., paratransit to rail station). In the future, this work may improve Loudoun County's disadvantaged residents' transit access.
- How will the new Silver Line affect transit access to the Dulles airport, particularly for workers since there is no longer a shuttle for them? Participants noted transit access might not help workers with very early or late shifts, and in fact that transit does not work for early-shift workers at Reagan Airport. The question of fares as a barrier to disadvantaged populations' (particularly low-income peoples') use of transit also come up, with participants asking if disadvantaged populations have lower ridership of WMATA Metro lines than disadvantaged populations in New York City or Boston, where rail transit has lower fares.
- Loudoun County is considering downsizing park-and-ride lots.

Safety

14. Lovettsville Road is one of the most dangerous secondary roads. It is a 2-lane divided road with a 45-mph speed limit. It is curvy.
15. Route 7 westbound on a hill at Yellow Schoolhouse Road and is extremely dangerous as it reaches a peak where people speed over.
16. Fairfax County Parkway down to the Dulles Toll Road has a lot of weaving and has experienced crashes.
17. Route 9 and Hillsboro Road should be examined. This is near a high school, and high school students have had crashes here.
18. Town of Herndon Washington & Old Dominion (W&OD) Trail roadway crossing off the trail should be examined.

- It would be good to map differences between crashes involving only automobiles and crashes involving a car and a pedestrian or bicyclist. They also noted that minor car crashes involving bicyclists or and pedestrians often are not reported.
- Rural areas in the western part of the region often have higher crash related to substandard or deficient roads than more urban parts of the region.
  - Fatal and injury in rural areas – Road geometry
  - Substandard secondary meet major highway
- Serious crashes sometimes occur where substandard roads meet state highways, such as Routes 7, 9, 15, 287.

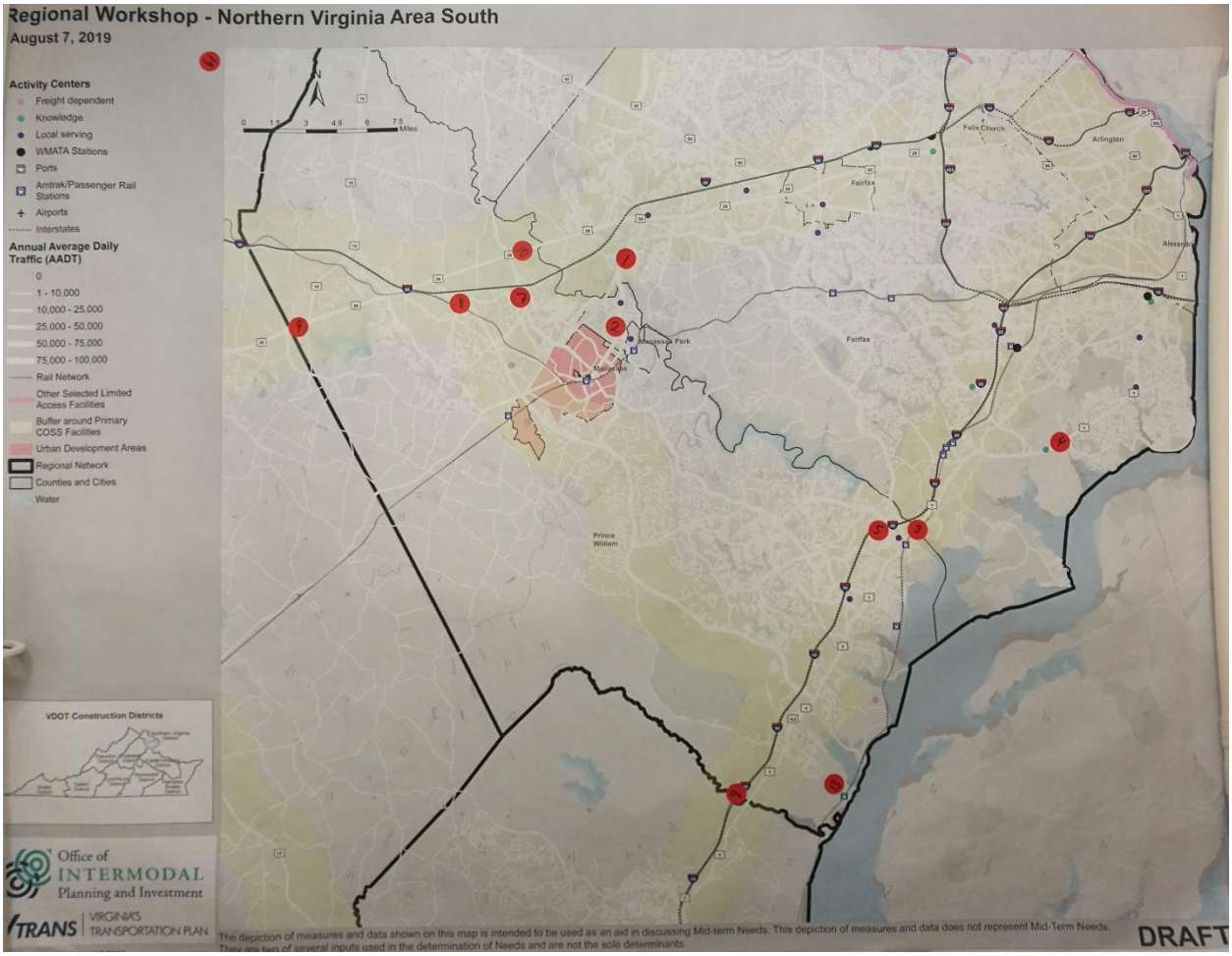
Economic & Industrial Areas

- Urban, rural, and suburban economic development needs in Loudoun County vary. Loudoun wants to develop rural tourist businesses such as wineries, farm breweries, farm markets in these areas.

- Industrial development areas are not pertinent to this part of the region.

GROUP 4 COMMENTS (FOCUSED ON SOUTHERN PART OF THE REGION)

Breakout Group 4 Marked-Up Map



Congestion

Percent Person-Miles Traveled in Excessively Congested Conditions (PECC)

1. Route 28 is severely congested during peak period. Congestion is most severe between I-66 and Prince William County.
2. Also refers to a congested part of Route 28.
3. The maps show only parts of Route 1. Route 1 should be included in the congestion and reliability measures.
4. Also refers to a congested part of Route 1. Congestion is most severe between stickers 3 and 4.
5. I-95 southbound where in narrows at Occoquan is always a point of congestion. There is also a problem at I-95 northbound.
6. Congestion is a major problem as you leave the Prince William County going south on I-95, before Aquia Harbour. The congestion there is mainly caused by the Express Lane merger approximately 7 miles previously.
7. There is afternoon peak period congestion on Prince William Parkway traveling northwest toward I-66. It could be because of stop lights.
8. Congestion at Prince William Parkway at I-66 and Balls Ford Road.

    - Some of the congestion may be resolved by a current expansion project.
    - A project for the Balls Ford Road interchange is fully funded. There is currently a back-up in the afternoon extending into Prince William Parkway.
9. Route 29 at Buckland experiences evening congestion.
10. Route 29 in Manassas experiences congestion, especially eastbound in the morning. Historical sites are limiting.

- A peak period metric should be added to the weekday metric.
  - Travel time should focus on peak period. The 14-hour period is too broad for Northern Virginia even if it works for the rest of the state. In Northern Virginia the focus should be on the peak period, which is the real issue here.
  - The facilitator explained how the PECC measure is normalized by VMT.
  - Weekend congestion is throughout the day.
- The 90% threshold for PECC reflects actual perception of congestion in area. It is more conceptually similar to peak period. The 75% threshold also produces reasonable numbers, while the 60% threshold completely misses the mark.
- The map should include several additional items—
  - Include park-and-ride lots as activity centers too, or perhaps mark them on the map as "Transportation Centers."
  - In NOVA maps, should reference Metro stations in addition to rail stations. Those are crucial to regions transportation infrastructure.
- Route 29 (Lee Highway) at the Manassas National Battlefield Park (near the Stone House) is congested.
- There is congestion on Sudley Road south of I-66.

Travel Time Index (TTI)

- Use TTI with a threshold of at least 1.5. 1.5 is the equivalent of a level of service (LOS) of F, while 1.3 is the equivalent of a LOS of E. A threshold of 1.5 might not reveal much congestion in many other parts of the state.
- Examine the TTI data at 15-minute increments. Identify general patterns by seeing how many 15-minute increments follow each other.

General Comments on Congestion

- Congestion affects the area's desirability because some people avoid the area because of the congestion. At the same time, the congestion is a product of the region's economic strength.
- Congestion limits housing choices. There is general agreement among participants that lower congestion allows people to live farther out. Congestion, combined with gentrification and rising costs of housing, is pushing people to the outer suburbs. This affects the region very directly as illustrated by the fact that 70% of Prince William County residents travel outside of the county for work. This is both because job generators have frequently located outside of Prince William County and because the cost of living is cheaper than closer to the region's center.
- Lack of connectivity in the transportation network affects business locations and could be influencing job generators to consider other locations.

- Manassas bucks the trend, with more in-commuting than out-commuting.
- Question: *To be considered to meet a need for SMART SCALE, should a project meet a general state needs or the regional needs?* The project should address a need related to a corridor of statewide significance (COSS), a regional network (RN), or an urban development area (UDA).
- The area also has other general needs related to congestion.
  - Network connectivity is a big issue around Routes 15 and 28 since they are the two ways in and out of Loudoun and there are limited choices for commuters.
  - Need for better connectivity before from I-95 to I-66.
  - Lack of circumferential transit routes in region.

Reliability

Person Delay During Unreliable Conditions

- The level of unreliable delay that the maps show for I-95 seems reasonable for weekends.
- The threshold should be high enough so that there is variation among road segments. In map the showing weekday unreliable delay, the system looks homogenous (all blue) because the system is reliably bad. The map with weekend unreliable delay tells a better story.
- Recommend examining the correlation between the total number of crashes and unreliable delay.

Buffer Time Index (BTI)

- The BTI analysis should focus on peak period.
- The data for Route 28 south of Manassas does not reflect participants' perception of its unreliability. Peak period analysis is needed.

General Comments on Reliability

- For weekends, the entire 14-hour period is relevant. For weekdays, there should be greater focus on the peak period.
- "We know it's reliable. It's just reliably bad"
  - Need to focus on peak periods instead of daily average.
    - Use the same measures, but during an identified peak period.
  - If you break it out into 6-9am and 4-7pm, you would be able to see directionality in these measures, not just increased congestion/decreased reliability.

Passenger Rail On-Time Performance

- In MWCOG's *Commuter Connections: State of the Commute* study, 50% of those surveyed said that being near VRE was important for locating in the region.[5] The *Commuter Connections: State of the Commute* report was conducted three years ago and they interviewed people who were thinking of relocating to the area.

[5] MWCOG (2016). *Commuter Connections: State of the Commute*. Available at https://www.mwcog.org/assets/1/28/Item__5_-_2016_SOC_Draft_Technical_Report_092016.pdf.

- Measures that the railroad can take to inform passengers and reduce uncertainty are valuable since people value reliability (e.g., counters for Amtrak like VRE has to show real time displays for arrival times, notifications when a train is running late).
- Compact development has spurred some of the growth in reliable and on-time service.
- There is a general perception that VRE is more reliable than driving.
- Can VRE afford to do a guaranteed ride home program? Perhaps if localities pay into it.
- The on-time performance maps for VRE and Amtrak are usually fairly accurate. VRE's Fredericksburg Line experiences delays mainly in the summer because of heat restrictions. Climate change could extend those heat restrictions over more of the day.
- VRE and Amtrak don't own the tracks. All rail lines south of Union Station are owned by freight railroads (CSX or Norfolk Southern). Freight trains are prioritized over commuter trains.
- The region has demand for more VRE trains, but there is limited capacity. Even though the service is reliable, the service does not cover demands. There is a desire for increased passenger capacity.
- The Long Bridge replacement is a key issue.

Accessibility to Activity Centers

Feedback on the Transit Access Deficit Measure

- *The data seem counterintuitive. For example, Franconia area has multiple transit options, but shows up as having high transit access deficit. Why is this?* There are two factors for this measure; transit access might be great, but highways access might be better. The map shows the relationship between highway access and transit access, so these maps are showing where you can make transit more competitive. The calculations account for congestion, transfer times, transit schedules, park-and-ride lots, etc.
- The metric for transit accessibility is a good one.
- The concentration on activity centers is important for transit access. The comparison of highway and transit access is a creative way to think about it.
- *Is the goal of this measure to take cars off the road and turn drivers into riders (shift highway into transit), or is it to identify areas in need of transit access?* The goal with this is to take a step back and look at what the measures as a whole are telling VDOT. The metric is trying to identify if there is a problem that we need to solve.
- *How do trip lengths influences these metrics?* The team examined Streetlight data, but there is no way for VDOT to validate.

General Comments on Region's Transit Access Needs

- There are gaps in the transit network. There is plenty of transit from outside to DC, such as from Loudoun to DC. But there is not good bus or rail infrastructure within the outside areas.
  - "We are going to put a bus to go to Dulles, but then where do they go?"

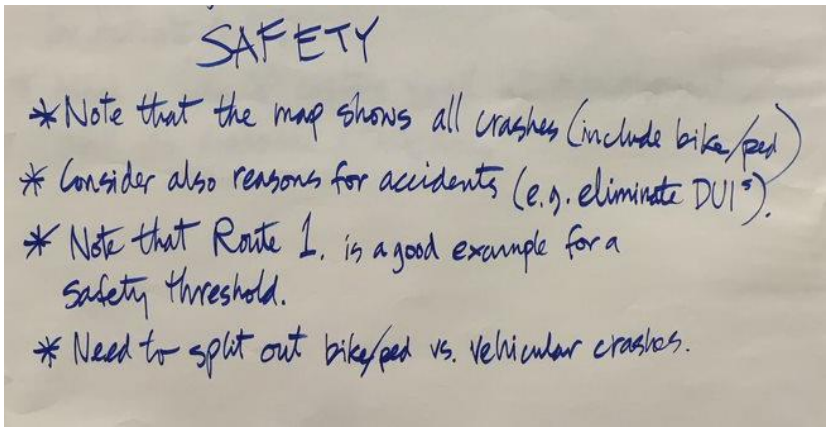
  - "We have an octopus of transportation; we need a spider web." Now there are arms jutting out from a radial center, instead of various connection at several legs.
- Recommend reaching out to NVTC staff, who recently did a study on gaps in the transit network.
- Recommend using origin/destination data to look at congestion patterns and transit accessibility. The way transit is configured in the region might mean you could go from Manassas to Dulles, but you might have to travel through DC first to get there.

Travel Options for Disadvantaged Populations

- Great Falls and Clifton are showing up as disadvantaged. Population age could skew the results.
- Recommend examining MWCOG's equity emphasis areas.
- Consider English proficiency and vehicle ownership/availability instead of age for disadvantaged criteria.
- This metric has to be explained very well to the average person for the results to be clear. Since an area can meet the definition of disadvantaged by meeting one of many criteria, breaking down the data by the criteria might help. Otherwise, people might misinterpret the results and take them to mean something other than intended in this context.

Safety

Excerpt of Group Facilitator's Comments on Flip Charts



- Recommend clarifying map label to show that it shows all crashes (including bike/ped).
- The team may need to consider reasons for crashes to distinguish design-related crashes from other crashes (e.g., eliminate DUI since they are not primarily related to roadway design).
- It would help to split out bike/ped vs. vehicular crashes.
- Question: *Are traffic volume and number of crashes taken into consideration for these maps?* No, these maps show the raw locations of crashes. The goal of today's examination is to identify locations where there are numerous safety concerns, so that OIPI can determine a baseline for drawing a line for PSI locations.

- Route 1 is a good example for a safety threshold.

Economic Development

- Data centers are big growth opportunity and are potential UDA sites. They have low trip generation due to low on-site employment, but they are high-revenue. Many data centers are being built in the region.
- There is a need for metrics to capture small lot redevelopment / infill as economic activity areas since the VDP sites have a 25-acre minimum that doesn't allow for smaller, in-town sites for urban redevelopment. Parkway Center in Prince William County is emerging activity center.
- Consider economic opportunity areas for activity centers. In addition to VDP, the is the potential to look at economic opportunity zones for additional information. It's not necessarily a center of activity, but the area has the right demographics to attract residential or commercial development. There is one in Manassas and are several in Fairfax.

iii. WRITTEN COMMENTS

The following section lists the written input from participants who chose to fill out the printed comment sheet in their meeting packets. Key points and concepts from this input are reflected in Table 3 (Synthesis of Comments). Some participants planned to send comments to OIPI staff after the meeting; input from these post-meeting messages may not be captured in this meeting summary, but OIPI is considering all continued input during the development of the needs assessment.

Note: As of August 14, 2019, only one written comment sheet has been returned.

CONGESTION

Does Congestion affect this region's economic competitiveness? If so- where, how, and why?

- Yes. It impacts people's decision on where to work or live.

Percent Person-Miles Traveled in Excessively Congested Conditions (PECC)

Does this measure reveal the region's needs as YOU perceive them? If not, why?

- It depends on the threshold and also need to look at peak period.

Do you have an opinion on the Analysis threshold?

- 75% or 90% seems to be more appropriate.

Travel Time Index (TTI)

Does this measure reveal the region's needs as YOU perceive them? If not, why?

- Yes, but look at peak period as well.

Do you have an opinion on the Analysis threshold?

- No

In addition to the analysis of statewide measures, what other data or information could help us to pinpoint mid-term needs associated with congestion?

- Peak period traffic / congestion

RELIABILITY

Does travel time reliability affect this region's economic competitiveness? If so-where, how, and why?

- Yes, everywhere. Due to wasted hours needed to buffer.

Person Delay During Unreliable Conditions (UD)

Does this measure reveal the region's needs as YOU perceive them? If not, why?

- Yes

Do you have an opinion on the Analysis threshold?

- No

Buffer Time Index (BTI)

Does this measure reveal the region's needs as YOU perceive them? If not, why?

- Need to look at peak period

Do you have an opinion on the Analysis threshold?

- No

In addition to the analysis of statewide measures, what other data or information could help us to pinpoint mid-term associated with travel time reliability in this region?

- Peak period congestion

Passenger Rail On-Time Performance

Does passenger rail on-time performance affect this region's economic competitiveness? If so- where, how, and why?

- Yes, mainly for commuting.

Does this measure reveal the region's needs as YOU perceive them? If not, why?

- Yes, Amtrak is less reliable than VRE.

Do you have an opinion on the Analysis threshold?

- Not applicable

Accessibility to Activity Centers

Is accessibility to activity centers a concern for this region? If so- where, how, and why?

- Yes, in terms of different modes.

Does this measure reveal the region's needs as YOU perceive them? If not, why?

- Well, it makes sense relatively to highways, but areas outside WMATA like Manassas do not show a need even though lack of transit access.

In addition to the analysis of statewide measures, what other data or information could help us to pinpoint mid-term needs associated with accessibility to activity centers in this region?

- Jobs/employment. For example, 1,1000 new jobs in City of Manassas with [unclear].

Travel Options for Disadvantaged Populations

Is the availability of travel options for disadvantaged populations a concern for this region? If so- where, how, and why?

- Yes, mainly where Metro is not present.

Disadvantaged Population Beyond ¼ Mile Access to Transit Service

In addition to the analysis of statewide measures, what other data or information could help us to pinpoint mid-term needs associated with travel options for disadvantaged populations in this region?

- Look at EEA (equity emphasis areas) from COG and compare areas.
- Vehicle ownership

SAFETY

Vehicular Crashes

In addition to the analysis of statewide measures, what other data or information could help us to pinpoint mid-term needs associated with safety in this region?

- Show ped/bike crashes as well.

ECONOMIC DEVELOPMENT NEEDS

Please provide your thoughts about mid-term transportation needs related to economic development in this region's activity centers, urban development areas, and/or industrial development areas.

- Need to look at opportunity zones as well.

ADDITIONAL COMMENTS

What did you find most useful about this workshop?

- Interesting data collection and analysis. Good group discussions.