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Think Forward

Long-Distance Commuter Bus Study

presented to

MWCOG Regional Public Transportation Subcommittee

presented by

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With KFH Group, Inc.

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Presentation Outline

- Study Objectives
- Existing Commuting Patterns and Services
- Market Analysis Results
- Feasibility of Potential Markets
- Service Strategies
- Next Steps

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Study Objectives

- To determine demand and strategies for publicly supported commuter bus service into DC and Northern Virginia from areas beyond the TPB planning area.
- Study Area
  - » Job Destinations: DC, Pentagon/Arlington, Alexandria, Tysons, Dulles
  - » Home End: – Outside of the TPB area, but including sections of FAMPO, Northern Shenandoah PDC, possibly Culpeper, Win-Fred

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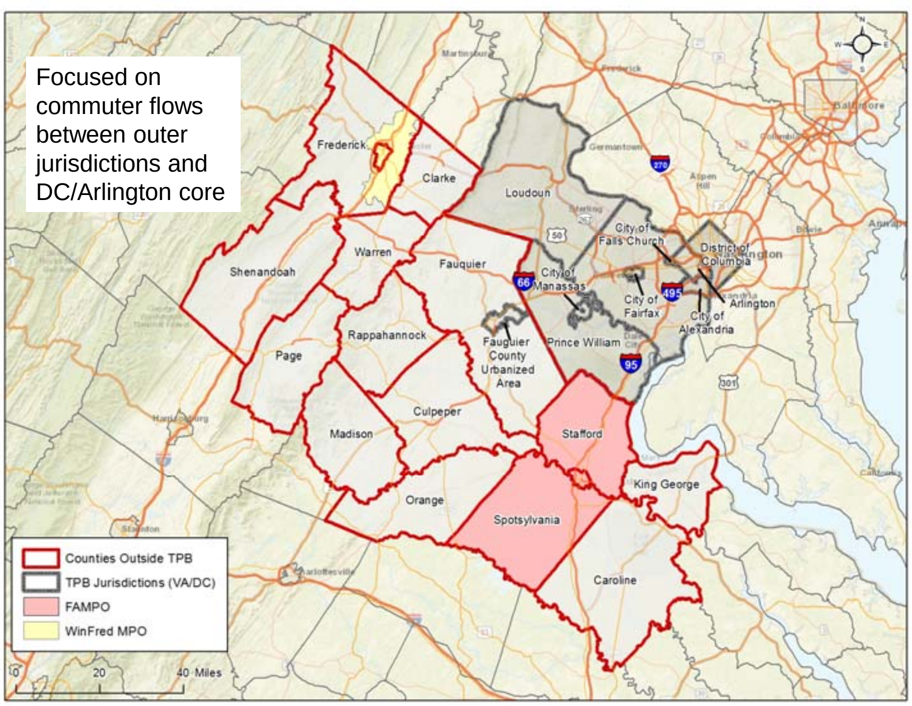

Existing Commuting Patterns and Services

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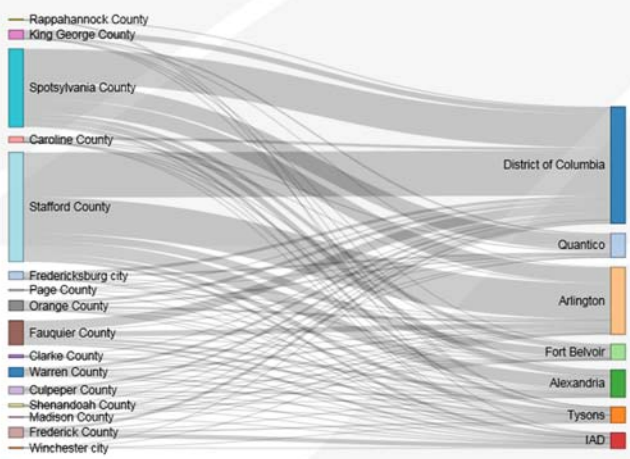
Total Commuter Flows



Source: 2006-2010 CTPP Commuter Flows

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Existing Services - Operators

- Commuter Bus
  - **Academy Bus**: Culpeper/Warrenton-Rosslyn/DC
  - **Martz**: Fredericksburg/Stafford-Pentagon/DC
- Intercity Bus
  - **Greyhound**: Richmond-Fredericksburg-Springfield-DC, Richmond-DC Express, and Charlottesville-Fredericksburg-Springfield-DC
  - **Megabus**: Richmond-DC express
  - **EasternShuttle Bus**: Richmond-DC express
- Train
  - **Amtrak**: Richmond-Ashland-Fredericksburg-Quantico-Alexandria-DC and Charlottesville-Culpeper-Alexandria-DC
  - **VRE**: Spotsylvania/Fredericksburg-DC and Manassas-DC

Existing Services Summary

- Fredericksburg and Stafford relatively well served by bus/rail (12-18 roundtrips daily)
- Spotsylvania, Ashland, and Richmond have some bus/rail service (< 10 roundtrips daily)
- Culpeper and Charlottesville have minimal service (1-2 roundtrips daily)
- No commuter bus/rail from Northern Shenandoah Valley or Northern Neck
- Other areas served by rideshare programs

Market Analysis

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Travel Demand Methodology

Step 1: Determine future commuter flows

Obtain Base Year Commuting Estimates by Mode

- Data source: 2006-2010 and 2009-2013 CTPP Commuter Flow by Mode

Forecast Future Year Commuting Flow Growth Rates

- Data Source: Virginia Statewide Travel Demand Model base and future year scenarios outputs.

Forecast Future Year Market Potential (2025 and 2040)

- Apply future year growth rates to base year flow estimates

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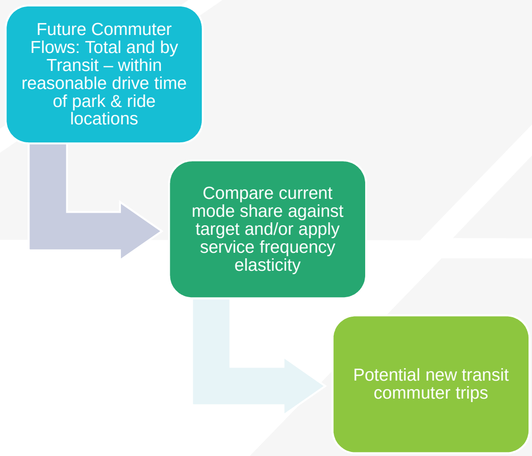
Step 2: Identify potential transit commuters



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Initial Screening Results

- Initial estimates of potential riders used to identify most feasible home end locations
- High (Green) > 100 riders in the peak period
- Medium (Yellow): 50-100 peak riders
- Low (red): Less than 50 peak riders

Home End County	
Stafford County	High (Green)
Spotsylvania County	High (Green)
Fredericksburg city	High (Green)
Fauquier County	High (Green)
King George County	High (Green)
Frederick County & Winchester city	Medium (Yellow)
Orange County	Medium (Yellow)
Caroline County	Medium (Yellow)
Culpeper County	Medium (Yellow)
Warren County	Low (red)
Rappahannock County	Low (red)
Clarke County	Low (red)
Shenandoah County	Low (red)
Page County	Low (red)
Madison County	Low (red)

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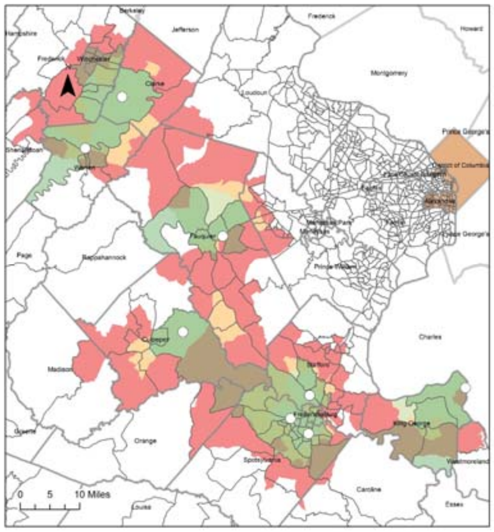
Market Identification



- Potential origin end park & ride lot locations were selected within the screened jurisdictions
- Future auto travel times to park & ride lots were used to select potential home locations

7 Potential Markets Selected

- All trips with a work-end destination in DC/Arlington Core
- Home end origins:
  - Winchester (Waterloo)
  - Front Royal (Crooked Run)
  - Culpeper (Brandy Station)-Warrenton
  - Orange/Spotsylvania (Route 3)
  - Fredericksburg/ Spotsylvania (Houser Drive)
  - King George
  - Stafford (Falmouth)

Ridership Potential by Market

Potential Markets	2025 Total Daily Commuter Flow	Commuter Bus Potential	
		Daily Peak Commuters*	Annual Trips
Winchester	300	100	52,000
Front Royal	200	50	26,000
Culpeper-Warrenton	1,400	100	52,000
Orange/Spotsylvania	4,800	100	52,000
Spotsylvania/Fredericksburg	5,800	150	78,000
King George	1,100	100	52,000
Stafford/Falmouth	2,900	150	78,000

* Rounded up to nearest 50 trips

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Feasibility of Potential Markets

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Analysis Approach

- Identified 7 potential markets
- Developed cost & revenue estimates to review projected performance
- Compare projected performance with service principles to determine feasibility
- Discuss most appropriate service provision strategy for feasible markets

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Service Levels

Potential Markets	Intermediate Stops	One-Way Route Length (miles)	Roundtrips per day
Winchester-DC/Arlington Core	Innovation Station (Silver Line)	77	4
Front Royal-DC/Arlington Core	East Falls Church Metro (or Vienna)	71	2
Culpeper-DC/Arlington Core	Warrenton, East Falls Church Metro (or Vienna)	64	4
Orange/Spotsylvania-DC Core	Pentagon Metro Station	57	4
Spotsylvania/Fredericksburg-DC Core	Pentagon Metro Station	59	6
King George-DC Core (new park & ride at Rt 3 & Rt 610)	Pentagon Metro Station	73	4
Stafford/Falmouth-DC Core	Pentagon Metro Station	51	6

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Projected Performance

Potential Markets	Bus User Time (mins)	Auto Travel Time (mins)	Bus:Auto Compar-ison	Subsidy Per Boarding	Farebox Recovery	Operating Cost per Pass. Trip
Winchester-DC/Arlington Core	174	80-105	188%	$15.10	35%	$23
Front Royal-DC/Arlington Core	162	85-150	138%	$12.98	39%	$21
Culpeper-DC/Arlington Core	147	85-155	123%	$12.54	35%	$19
Orange/Spotsylvania-DC Core	133	80-150	116%	$10.07	41%	$17
Spotsylvania/Fredericksburg-DC Core	137	85-150	117%	$10.42	41%	$18
King George-DC Core	166	100-180	119%	$12.88	41%	$22
Stafford/Falmouth-DC Core	121	75-140	112%	$9.00	41%	$15

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Feasibility Analysis Takeaways

- 6 of 7 potential markets appear feasible at 40% farebox recovery & less than 150% of SOV travel time
  - » Winchester appears less feasible with highest subsidy per boarding & longest bus travel time
- Markets in I-95 corridor have lowest subsidies per boarding & shortest bus travel times (2:00-2:15 hours)
  - » Other markets' subsidy per boarding is $2+ more
  - » Front Royal & King George have longer bus travel times (2:40 hours)

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Service Strategies

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Status Quo: Private Providers Respond to Market

Pros	Cons
• Corridors with highest market demand are served • No state or local funding required for subsidies • No change in programs or administrative work for state/local agency	• Unmet needs for additional service on existing commuter bus routes • Service gaps in areas with potential commuter bus markets

Source: The Free Lance-Star.

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Service Strategy: Provide Capital Assistance to Private Providers

Pros	Cons
• Corridors with highest market demand are served • Improve customer experience through new buses • Potential to improve service, establish new service, or lower fares as condition of capital assistance	• State funding required for capital assistance • State/local staff must monitor vehicle usage (maintenance) & service quality

Source: KFH Group. Source: Wikipedia.

Service Strategy: Provide Operating Assistance to Private Providers

Pros	Cons
• Serve unmet needs for additional service on existing routes • Fill service gaps and serve new markets through new routes • Decrease SOV commute trips in congested corridors • State experienced with RFP process to contract for service (intercity bus & Smartway) • Option for turnkey contract	• State funding required for operating assistance • Requires state/local staff & operational expertise to manage contracts • If state directly contracts: o Policymaking removed from provision of service o Calls for regional equity • If local agency directly contracts, difficult to obtain local match, if required • Potentially competes with rideshare

Service Strategy: Provide Both Capital & Operating Assistance

Pros	Cons
• Improve customer experience through new buses • Serve unmet needs for additional service on existing routes • Fill service gaps and serve new markets through new routes • Decrease SOV commute trips in congested corridors • State experienced with RFP process to contract for service (intercity bus & Smartway)	• State funding required for capital & operating assistance • Requires state/local staff to monitor vehicle usage (maintenance) & manage operating contracts • If state directly contracts, policymaking removed from provision of service & calls for regional equity • If local agency directly contracts, difficult to obtain local match, if required • Potentially competes with rideshare

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Alternate Strategy: Increase Funding for Rideshare Programs

Pros	Cons
• Corridors with highest market demand are served • No change in programs or administrative work for state/local agency	• State funding required to subsidize vanpools/carpools

Source: DRPT website.

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Alternate Strategy: Build More Park & Ride Facilities

Pros	Cons
• Corridors with highest market demand are served • No change in programs or administrative work for state/local agency	• State funding required to build additional park & ride lots • DRPT must coordinate with VDOT, which leads strategy

Source: VDOT website. Photo by Roger W. Snyder.

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Discussion/Next Steps

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Next Steps

- Continued discussions of state, regional, or local sponsorship of service in potential markets
- Identification of funding opportunities to initiate the service, such as applying for toll revenues in the I-66 and I-95 corridors, or grant programs such as SMART SCALE
- Additional outreach and discussion with the private sector on feasibility and incentives for expanding commuter bus options
- Further study of the travel options for long-distance commuting, including vanpool, carpool, and related TDM programs

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