



15th International Conference on Managed Lanes

I-66 Corridor Improvements Outside the Capital Beltway in Northern Virginia, USA

Case Study for Funding of Transit Service and Transportation Demand Management Strategies through Managed Lanes



TRANSFORM 66
OUTSIDE the Beltway

VDOT

DRPT

Multimodal Solutions - 495 to Haymarket

Kimley»Horn

May 6, 2016

Overview

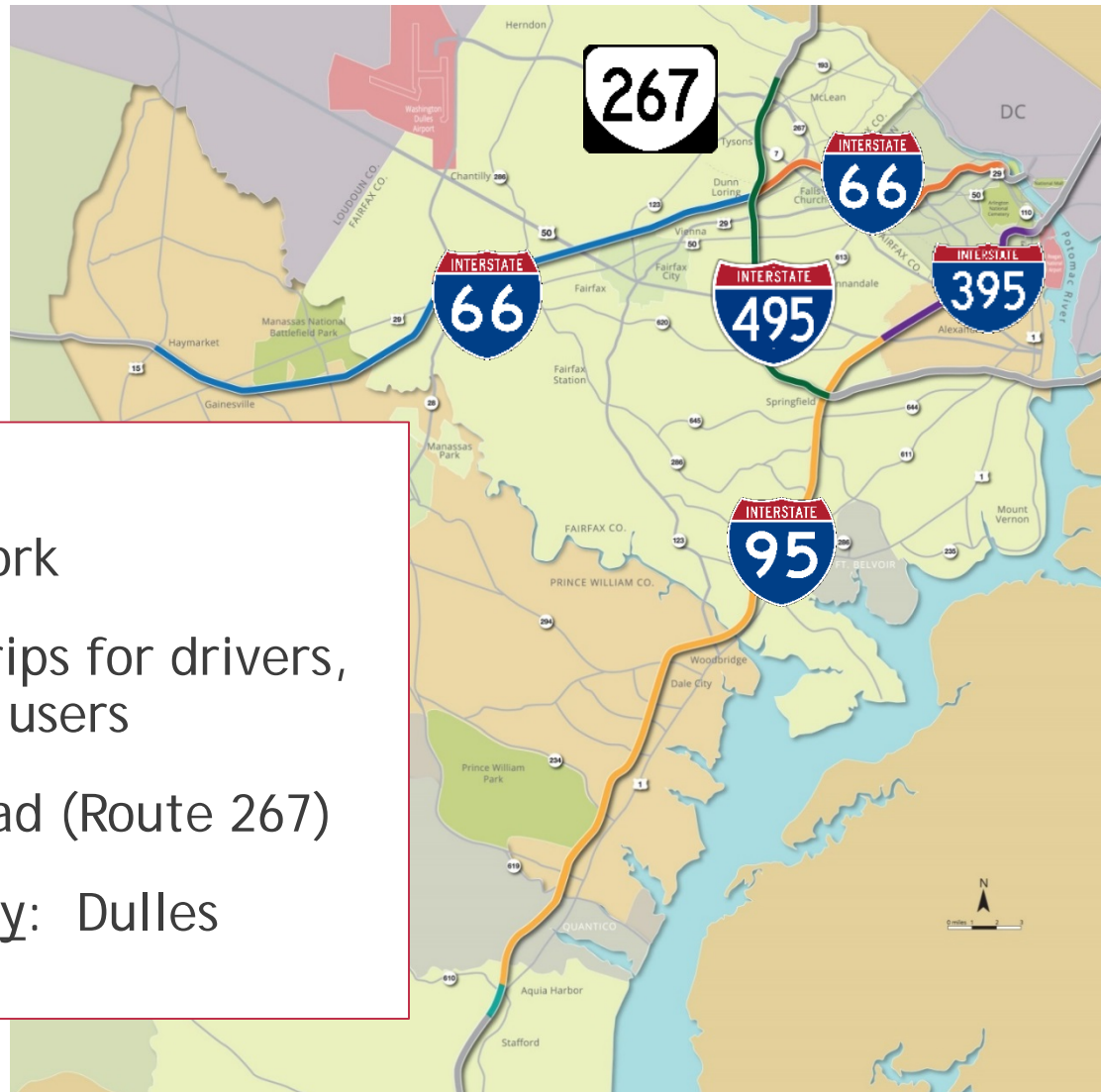
- Managed Lanes in Northern Virginia
- Transform 66 Outside the Beltway Project
- Preferred Alternative Elements
- Transit Service and Transportation Demand Management (TDM) - Benefits, Costs, and Funding
- Conclusions



Managed Lanes in Northern Virginia



Managed Lanes in Northern Virginia



Express Lanes:

- By 2021, 84-mile network
- Faster, more reliable trips for drivers, carpoolers, and transit users

HOV lanes: Dulles Toll Road (Route 267)

Variable Priced Toll Facility: Dulles Greenway (Route 267)

Managed Lanes in Northern Virginia



Funding of Transit Service and Transportation Demand Management Strategies through Managed Lanes

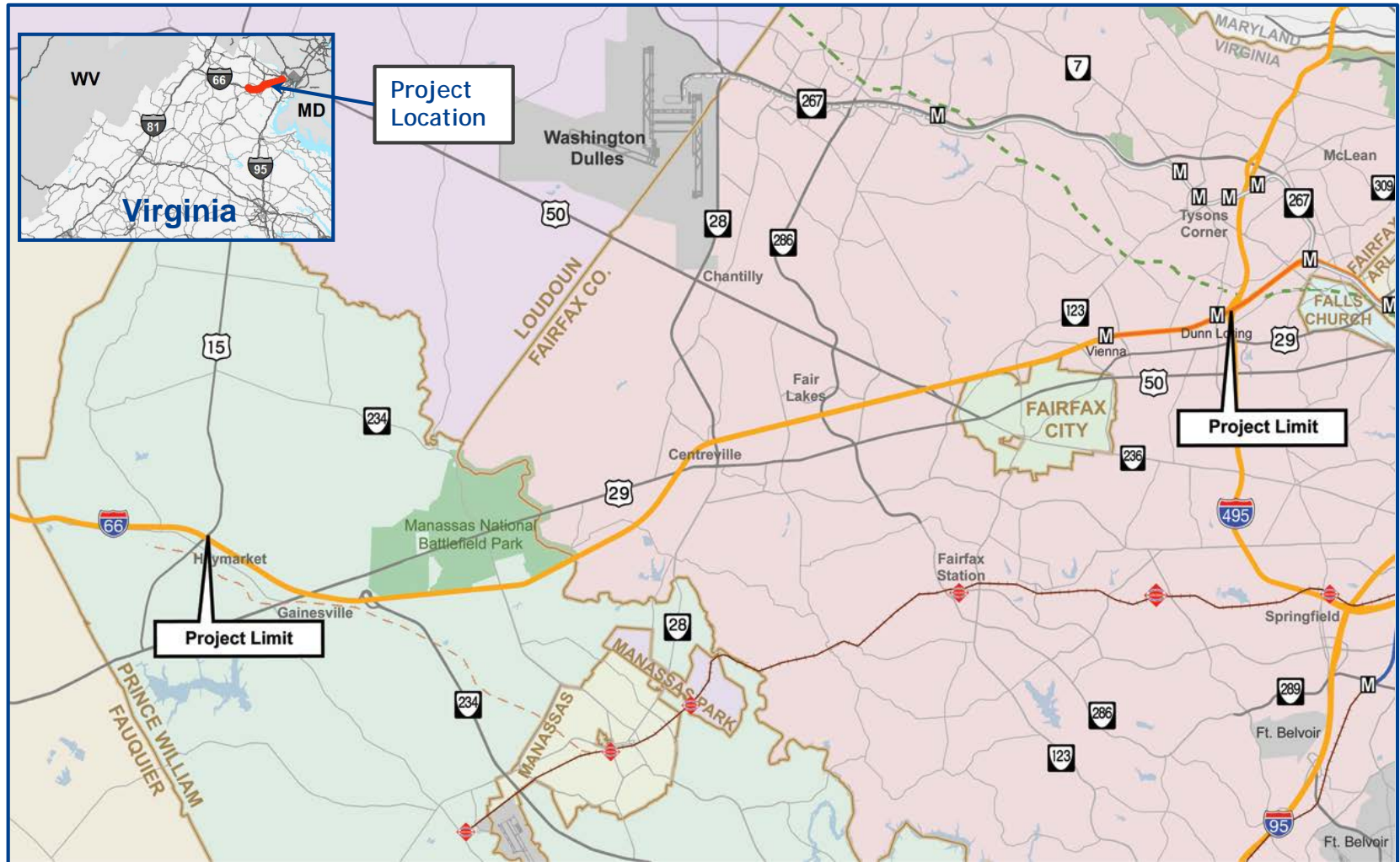
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Transform 66 Outside the Beltway Project

Introduction of Express Lanes



Transform 66 Outside the Beltway Project



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Funding of Transit Service and Transportation Demand Management Strategies through Managed Lanes

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Transform 66 Outside the Beltway

■ Purpose and Need

- Improve multimodal mobility along the I-66 corridor by providing diverse travel choices in a cost-effective manner
- Enhance transportation safety and travel reliability



Project Schedule

1980s - 2000s	HOV study, HOV lanes, corridor studies
December 2009	I-66 Transit/TDM Study
November 2013	FHWA approval Tier 1 Environmental Impact Statement and Record of Decision—10 recommendations
July 2014	Launch of Tier 2 Environmental Assessment and Transform 66 Outside the Beltway
October 2015	Preferred Alternative, Phasing Approach, Transit/TDM funding approach, Procurement started
December 2015	Selection of design, build, finance, operate, and maintain (DBFOM) method, release of draft RFP
Fall 2016	Selection of Developer (DBFOM Proposer)
2017	Start of Construction and Transportation Management Plan
2021	Open to traffic ... and transit service, TDM strategies

Preferred Alternative Elements

Developing the Preferred Alternative



Elements of Alternatives

- Mainline cross section
- Express Lanes access points
- Interchange concepts
- Park-and-ride locations
- Transit service scenarios
- TDM strategies

Alternatives Evaluated

- Technical studies
- Public and stakeholder input

Key Features

- Reflects public input
- Combines the best elements from alternatives evaluated
- Refines concepts with new ideas to reduce impacts
- Multimodal approach
- Moves more people
- Reduces hours of congestion per day
- Reduces cut-through traffic on local roads

Preferred Alternative Elements

Two Express Lanes, each direction

- HOV-3+ and buses travel free
- Non-HOV tolled
- Congestion-based tolls (similar to other Express Lanes in region)

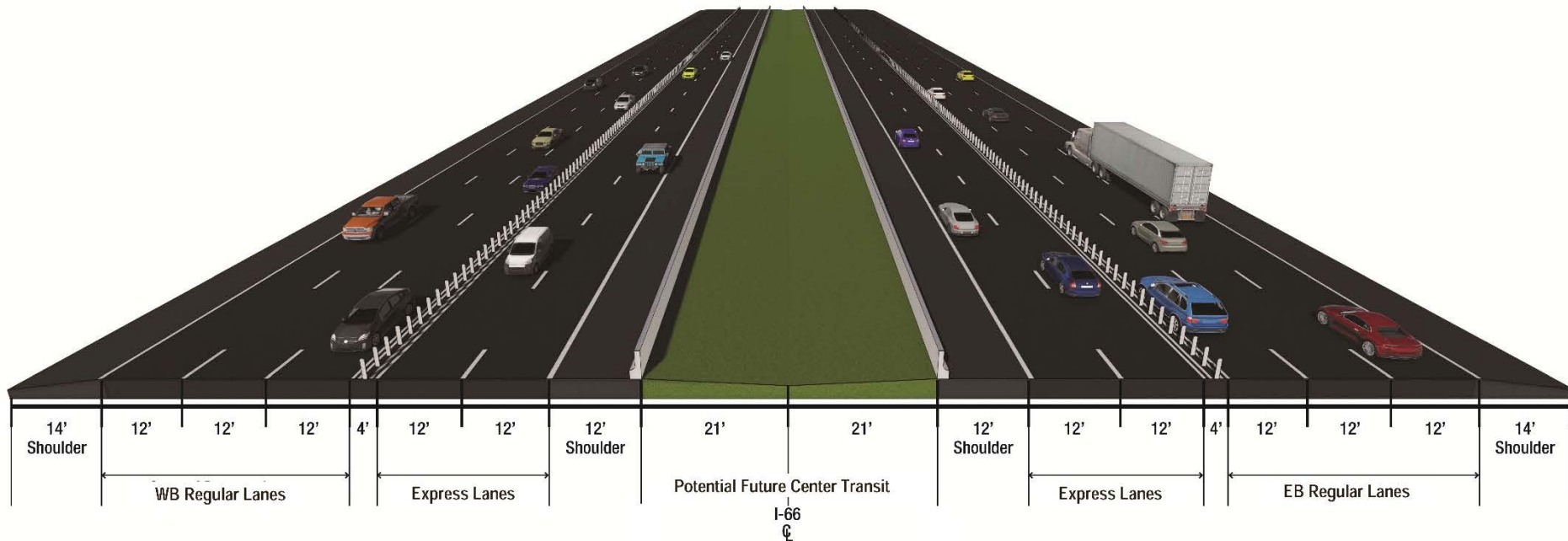
Three General Purpose Lanes, each direction

- Non-tolled, open to all traffic
- Ramp-to-ramp connections between interchanges (auxiliary lanes)
- Safety, interchange, and operational improvements

New transit service and other multimodal improvements

- High-frequency, reliable bus service during extended peak periods
- Park-and-ride facilities
- Transportation demand management (TDM) strategies
- Bicycle and pedestrian trail and improvements

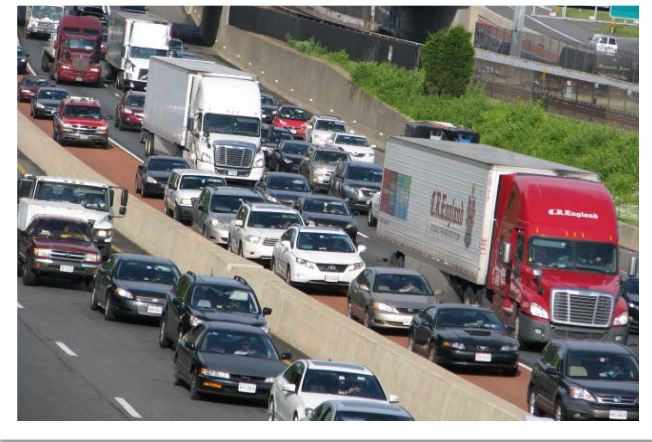
Proposed Mainline Cross Section



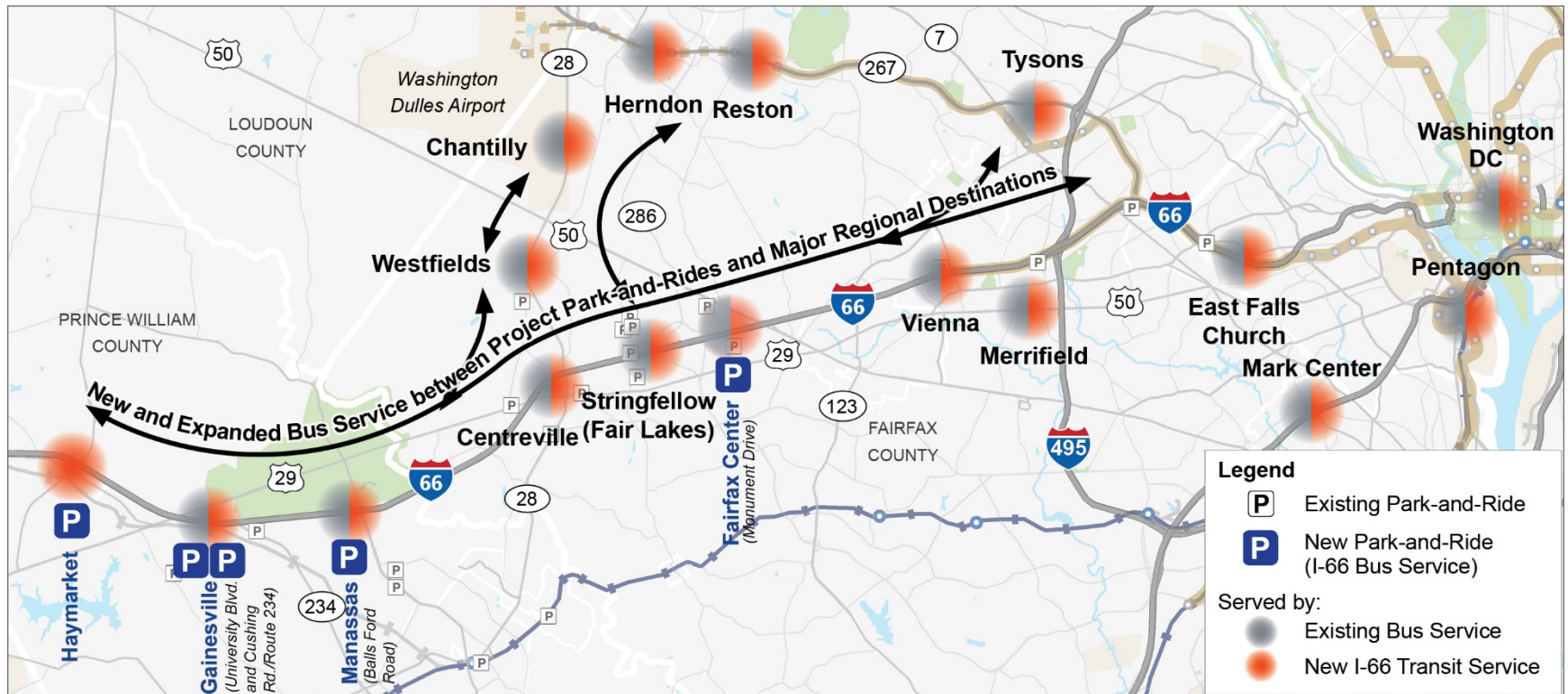
Flexible barrier with buffer, median for potential future transit (with auxiliary lanes, if needed)

Traffic Analysis Findings

- Preferred Alternative (2040) and Phase 1 (2025) vs. No Build Alternative:
 - Moves more people via more modes in the AM and PM peak periods
 - Reduces the duration and severity of congestion in the AM and PM peak periods
 - Improves speeds on the I-66 corridor and reduces travel times
 - Improves existing safety issues and bottlenecks



Moving More People With Multimodal Solutions



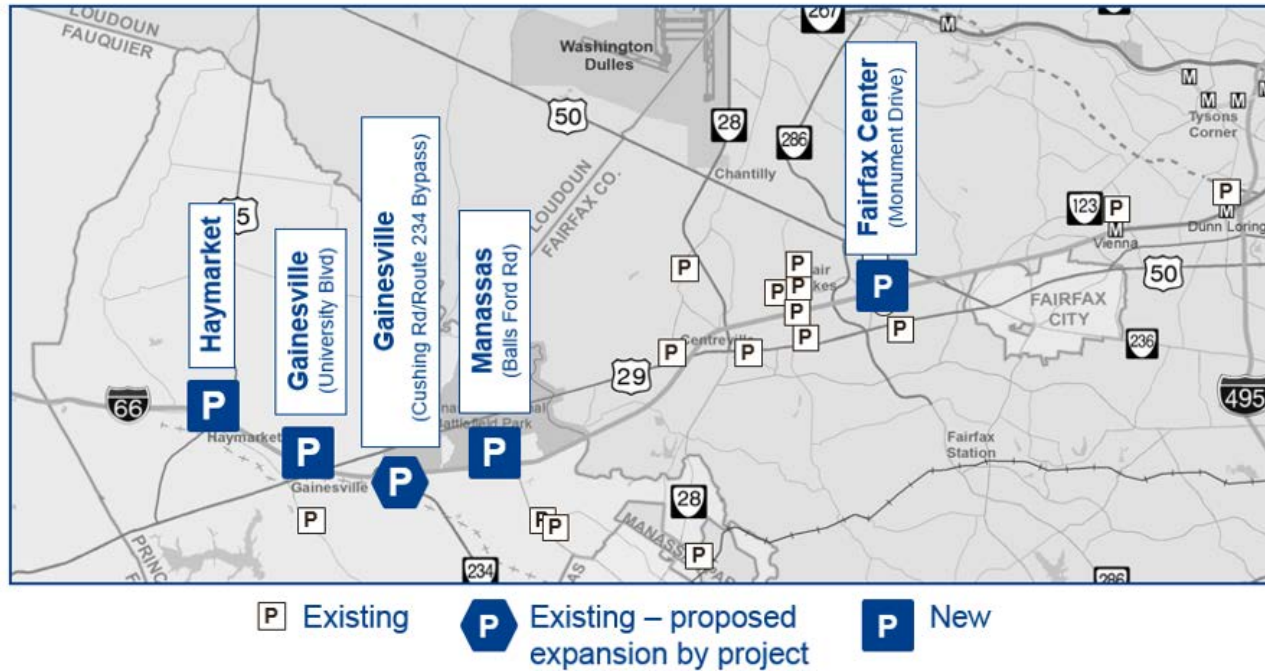
- New transit service
- New and expanded park-and-ride facilities
- Travel Demand Management (TDM) strategies

New Transit Service

- Point-to-point commuter service between park-and-ride facilities and regional destinations
- Services optimized to move more people along the corridor in expanded peak periods
- Phase 1 (by 2025): 13 new/expanded routes with up to 10,000 forecasted daily riders
- Preferred Alternative (by 2040): 20 new/expanded routes with up to 13,400 forecasted daily riders
- VDOT/DRPT will have ability to monitor and measure performance of new service and adapt to changing travel patterns



Park-and-Ride Facilities



- Phase 1 (2021): Approximately 4,000 new spaces in 4 new/expanded facilities
- Preferred Alternative (by 2040): Approximately 6,500 total spaces in 5 new/expanded facilities
- Amenities that support bus transit, carpool/vanpool, and kiss-and-ride
- Direct access to the Express Lanes
- Convenient connections to local roadway and trail networks

Transportation Demand Management (TDM) Strategies

- Directly promote the use of the Express Lanes, new transit service, park-and-ride facilities, and ridesharing opportunities
- Developed for I-66 corridor, supplements ongoing TDM efforts in region
- Project strategies
 - I-66 corridor marketing and outreach
 - Limited-time fare buy-downs for new transit users
 - Financial incentives and assistance for formation of carpools and vanpools
 - Support bicycle and pedestrian travel within the corridor
 - HOV-2 to HOV-3 conversion awareness
 - Expanded employer outreach
 - Innovative first/last mile solutions
- To begin as part of the Transportation Management Plan (TMP) during construction

Transit/TDM - Benefits, Costs, and Funding

Anticipated Benefits

- Increased number of one-seat bus rides to destinations in the greater Northern Virginia region
- Reliable, predictable bus transit travel time due to the use of the Express Lanes
- Transit service levels that increase incrementally as travel patterns change over time
- Expanded and new park-and-ride facilities with multimodal access and connections
- Support and incentives for non-single-occupant vehicle travel
- Expanded transportation choices—transit and increased carpools and vanpools



I-66 Transit/TDM - Anticipated Costs

- Implementation time frames developed for transit service and TDM:
 - 2021: Opening Year, initial transit service, TDM, park-and-ride spaces
 - 2021 through 2066 (46 years): Phasing in service, continued TDM, more commuter parking spaces

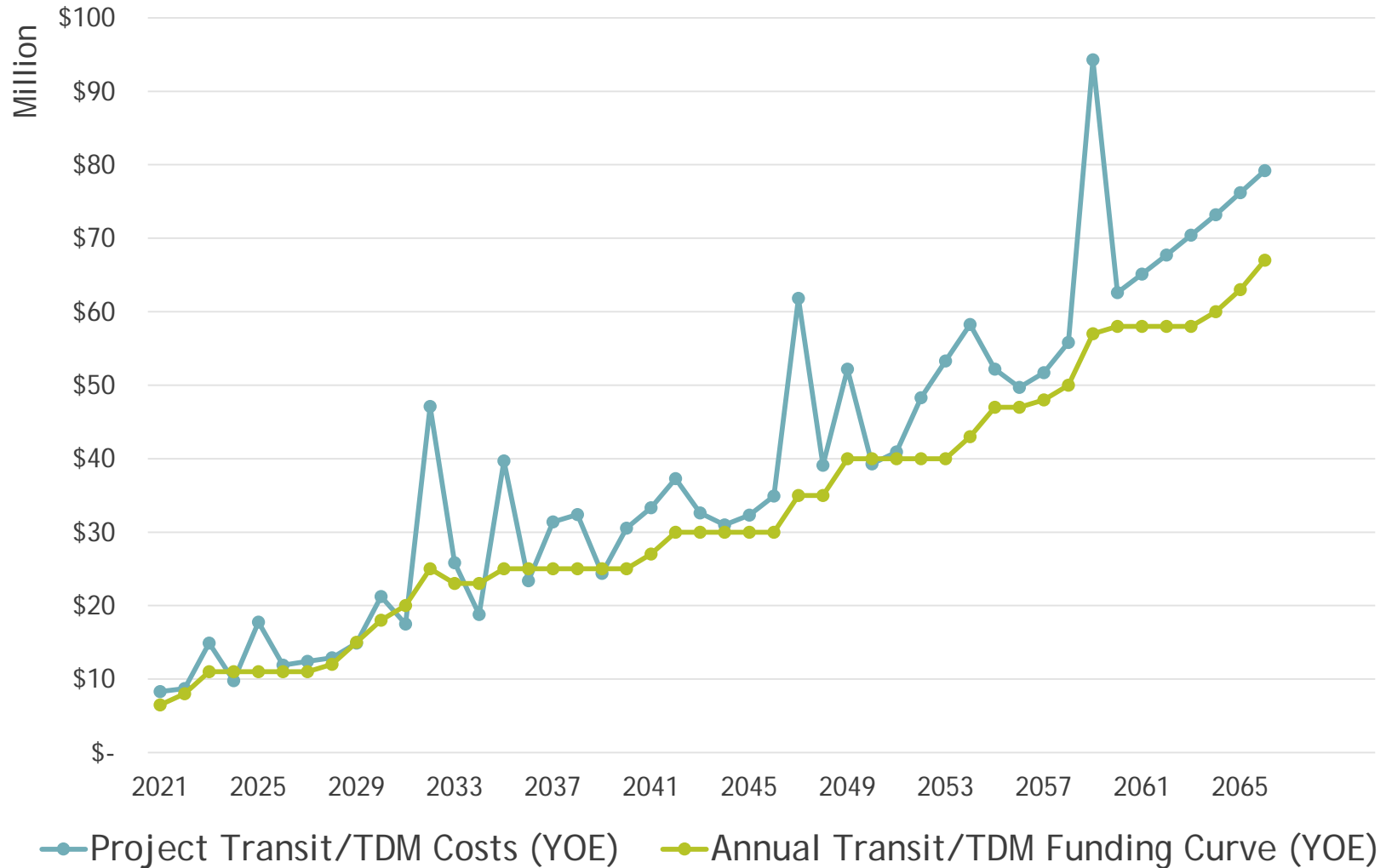
- Costs developed for operations and maintenance and for capital investments based on:
 - Implementation time frames
 - Operating costs per hour (obtained in coordination with PRTC, Fairfax Connector, and WMATA)
 - Fare box recovery estimates
 - Maintenance estimates
 - Cost factors for land acquisition, utilities, design, permitting, and contingencies
 - Construction unit prices

Year (Milestone)	Transit/TDM O&M Costs (thousands)			Capital Costs (thousands)		
	Transit/ TDM	P&R Facilities	Total O&M	Transit/ TDM	P&R Facilities	Total Capital

I-66 Transit/TDM - Annual Funding Calculation

- Costs estimated for 2021 through 2066 for transit and TDM, then converted to year-of-expenditure (YOE)
- Transit funding calculation methodology developed by DRPT and VAP3 as follows:
 - 100% of operations and maintenance costs
 - Including transit service and TDM strategies
 - Excluding park-and-ride facility costs
 - 50% of capital costs
 - Including transit and TDM capital and recapitalization
 - Excluding expansion of park-and-ride facilities
 - Costs combined for annual transit funding payout curve

I-66 Transit/TDM - Annual Funding



I-66 Transit/TDM - Annual Transit Funding

- Defined annual transit payment schedule for P3 Developer for life of concession
 - Developer will be responsible for funding transit service and TDM according payment schedule
 - Developer will not be responsible for procuring, operating, and maintaining systems and programs
- Transit payments included in the base financial model
- Transit payments rank below debt service in the cash flow waterfall but above support for corridor improvements and equity distributions

Conclusions

- I-66 Corridor Improvements = Multimodal Project
 - Overwhelming input from stakeholder agencies and public for travel choices
 - I-66 Transit/TDM funding approach keeps funds in corridor
 - More certainty that transit will be a viable option for I-66 commuters for many years
 - Allows local transit operators to provide corridor service—in their wheelhouse (not DBFOM Proposers)
 - Benefits rest of Virginia by allowing more statewide transit program funds to be spread across the Commonwealth



Conclusions

- Funding formula of 100% O&M and 50% capital:
 - Local operators benefit from having 100% of operating funds for corridor-specific service
 - Some federal funds should be available to help pay for capital expense
 - Overall, a compromise to make project financial plan work



Conclusions

- Project is demonstrating that it is possible to fund transit service and TDM through tolled Managed Lanes
 - Transit service in I-66 corridor will not be fully dependent on traditional federal, state, or local funding
 - Transit/TDM funding from toll revenue:
 - Policy decision by Virginia's leadership, in coordination with FHWA
 - Project commitment of the P3 Proposers
 - Project assumes \$600 million in public funding
 - Discussions with rating agencies about trade-offs was necessary and will continue through Financial Close
 - Approach allows flexibility for Commonwealth to reexamine transit services in corridor over time (performance monitoring)



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