Lessons Learned of the Before and After Study for the Dulles Corridor Metro Rail Project

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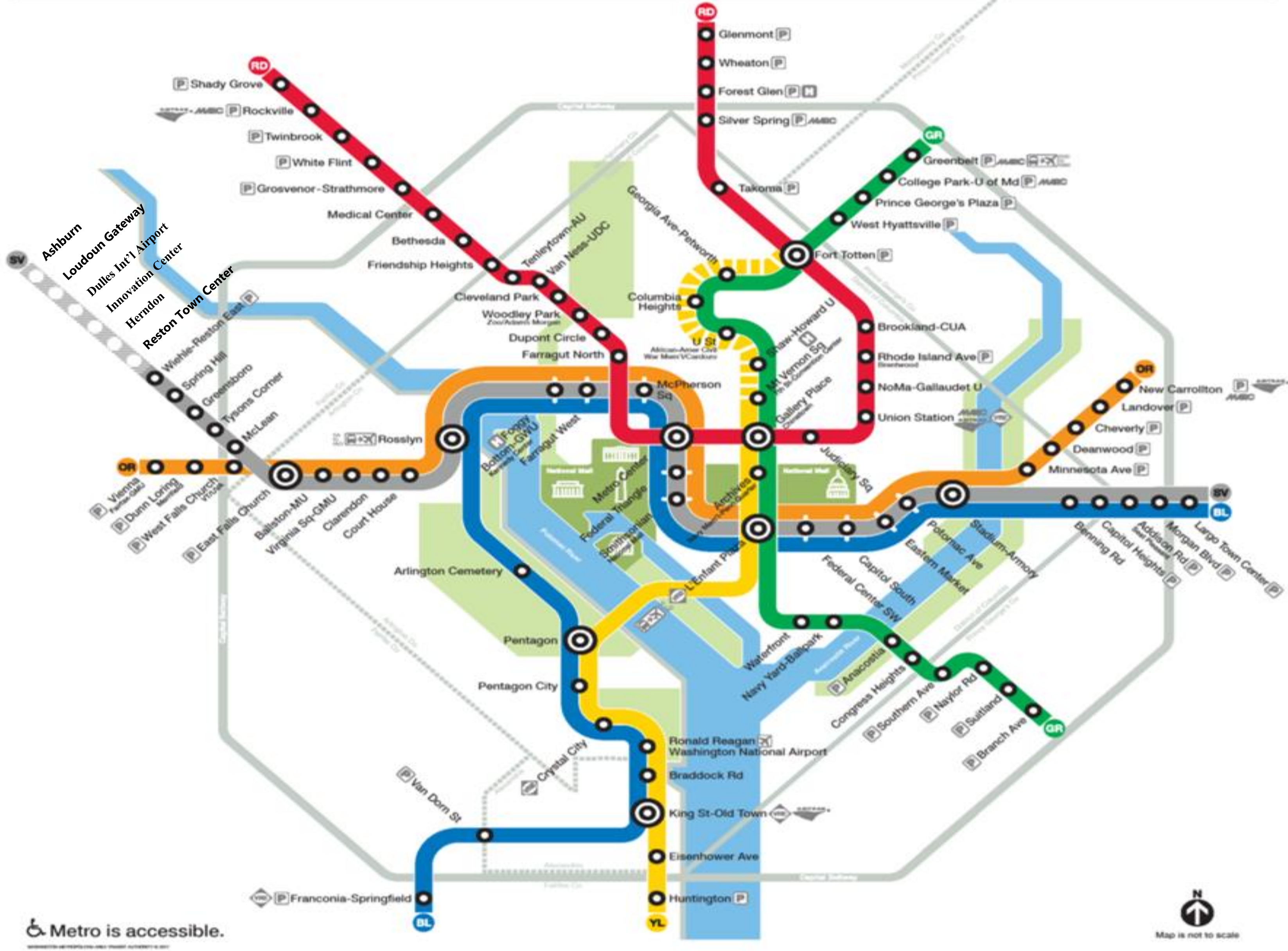
Key Presentation Take-Aways

- Overview of Dulles Corridor Metrorail Project
- Governance, Funding, & Contracting Structure
- Requirements of FTA Before and After Study
- Lessons Learned from Phase 1 Implementation
- A Look at Phase 2 Construction
- Conclusion



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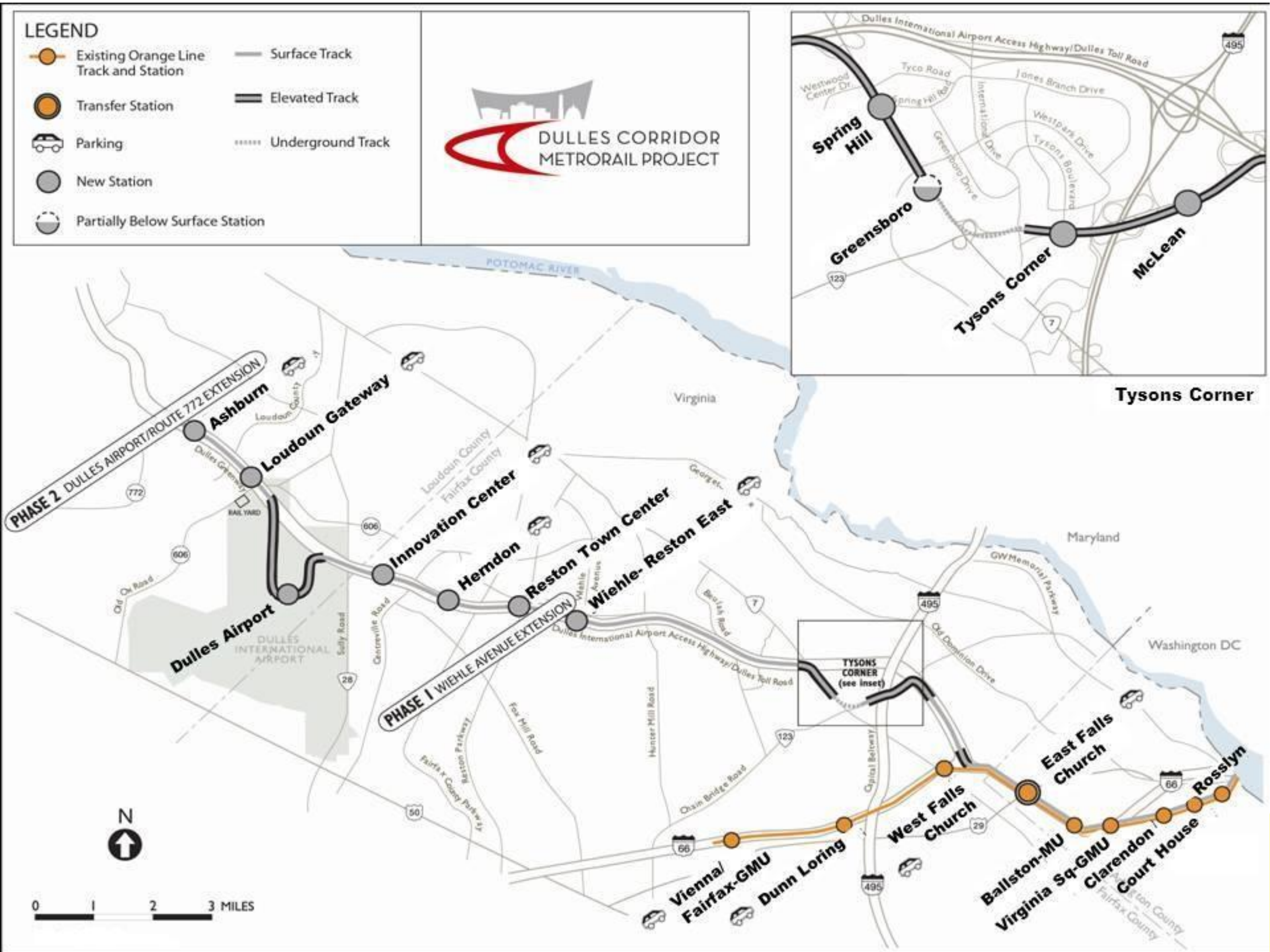

LEGEND
Existing Orange Line Track and Station
Transfer Station
Parking
New Station
Partially Below Surface Station
Surface Track
Elevated Track
Underground Track
DULLES CORRIDOR METRORAIL PROJECT
Tysons Corner
Spring Hill
Greensboro
Tysons Corner
McLean
Dulles International Airport Access Highway/Dulles Toll Road
Tyco Road
Westwood Center Dr.
Spring Hill Road
International Drive
Jones Branch Drive
Westpark Drive
Tysons Boulevard
Greensboro Drive
PHASE 2 DULLES AIRPORT/ROUTE 772 EXTENSION
PHASE 1 WIEHLE AVENUE EXTENSION
Ashburn
Loudoun Gateway
Innovation Center
Herndon
Reston Town Center
Wiehle- Reston East
Dulles Airport
DULLES INTERNATIONAL AIRPORT
RAIL YARD
Loudoun County
Fairfax County
POTOMAC RIVER
Virginia
Maryland
Washington DC
TYSONS CORNER (see inset)
East Falls Church
West Falls Church
Vienna/ Fairfax-GMU
Dunn Loring
Ballston-MU
Virginia Sq-GMU
Clarendon
Court House
Rosslyn
Old Ox Road
Sully Road
Centreville Road
Fox Mill Road
Reston Parkway
Fairfax County Parkway
Hunter Mill Road
Chain Bridge Road
Capital Beltway
Old Dominion Drive
GW Memorial Parkway
Beulah Road
Arlington County
N
0 1 2 3 MILES

Dulles Corridor Metrorail Project Overview and (Brief) History

- 1962 - Dulles Airport opens, Access Road median for transit
- 1966 - WMATA signed into law
- 1982/3 - I-66 Inside Beltway/Dulles Road Open
- 1986 - Metrorail Orange Line to Vienna Opens
- 1992 - DRPT established & Dulles Corridor MIS begins
- 1995 - Virginia PPTA legislation passed
- 1999 - Dulles NEPA commences
- 2004 - FTA and FAA RODs issued & PPTA Comprehensive Agreement executed

Dulles Corridor Metrorail Project Overview and (Brief) History (con't)

- 2004 - Phase 1 to Wiehle/Reston East PE begins
- 2007 - MWAA takes over as Project Sponsor
- 2009 - FFGA Approved for Phase 1; NTP issued to Phase 1 D-B
- 2014 – Phase 1 Revenue Operations to Wiehle/Reston East as WMATA's Silver Line
- 2013/4 – Phase 2 Contract Packages Awarded

Governance, Funding and Contracting Structure

- DRPT –original project sponsor
- MWAA (Airports Authority) – successor sponsor
- WMATA – ultimate owner and operator
- FTA – Federal Transit Administration
  - New Starts funding/NEPA
- FAA – Federal Aviation Administration -NEPA
- Additional funding partners
  - Commonwealth of Virginia
  - Fairfax County (inc. commercial tax district)
  - Loudoun County

Governance, Funding and Contracting Structure

DRPT
Virginia Department of Rail and Public Transportation

METROPOLITAN WASHINGTON AIRPORTS AUTHORITY

<u>Project Sponsor transition DRPT to MWAA</u>

- In 2007, VA privatized the Dulles Toll Road (DTR), concerns revenues for transportation would leave the corridor statewide, no guarantees rail would be built
- MWAA submitted own proposal to take over operations (and revenue) of DTR
- MWAA became project sponsor, FTA grantee and construction contracts holder, added technical capacity

Governance, Funding and Contracting Structure

- Dulles Transit Partners (DTP) – PPTA partner
  - JV of Bechtel and Washington Group
- DTP awarded comprehensive agreement in 2004
  - Fixed price Preliminary Engineering for Phase 1
  - Development Services (ROW, Utilities, Permitting, etc.)
  - Advance Phase 2 PE
  - Right to submit on Design-Build for Phase 1 following completion of Phase 1 PE

Governance, Funding and Contracting Structure

SOURCES OF CAPITAL FUNDING	PERCENT AT COMPLETE	Phase 1 TOTAL
Sec 5309 New Starts Federal Funds		
PE Grant		$54,412,526
Final Design Grant		159,001,838
ARRA		77,260,000
FFGA		609,325,636
Subtotal - New Starts	**28.64%**	**$ 900,000,000**
Other Federal Funds		
STP/Sec. 5307	**2.39%**	**$ 75,000,000**
Local Funds		
VTA 2000		$ 51,700,000
Commonwealth Transportation Bonds		125,000,000
Fairfax County Funds		523,750,000
Dulles Toll Road Revenues		1,467,021,634
Subtotal - Local Funds	**68.97%**	**$ 2,167,471,634**
Total Project Budget	**100.00%**	**$ 3,142,471,634**
Interrelated Highway Activities		123,208,229
DTR Revenues/Commonwealth Funds[3]		**$ 123,208,229**
	Phase 1 Total	**$ 3,265,679,863**

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Requirements of the FTA Before and After Study

- Required by Congress under Section 5309 Capital Investment Grants - New Starts funding
- Examines accuracy of predictions for capital costs and ridership at project milestones:
  - Project Development (NEPA)
  - Entry to Preliminary Engineering (previous milestone)
  - Entry to Final Design
  - Full Funding Grant Agreement (FFGA)
- Documents Before/After conditions, lessons learned
- Phase 1 Final Report to be completed late 2017

Lessons Learned from Phase 1 Implementation

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Lessons Learned from Phase 1 Implementation

- Stability - Not recommended to change lead Project Sponsor in middle of project!
- Competition is good! Comprehensive Agreement had an off ramp but not realistic based on delay a competitive procurement would required
- Avoid new alternatives being identified after ROD (tunnel)
- Cleary define Authorities Having Jurisdiction (AHJ)s and permitting entities as early as possible.
- Nail down code requirements/interpretations of each AHJ well in advance (check for conflicts with design criteria)

Lessons Learned from Phase 1 Implementation

- Commence right-of-way acquisition, utility relocation, and vehicle procurement as early as possible
- Specify requirements for a full-time ultimate owner/operator staff, empowered to make decisions and methods to resolve inter-departmental issues/conflicts
- All construction permits should be the Contractor's responsibility and the D-B Contract must state that Permits required for Work must be approved before construction of that Work may begin
- Public Outreach – DB should have responsibility to adequately staff internal and external communications efforts in neighborhoods impacted by construction

Lessons Learned from Phase 1 Implementation

- Require the D-B to comply with jurisdictional requirements regarding local land use processes and approvals
- Division 1 specifications should require the D-B Contractor to comply with change approval processes required by the permit review agencies.
- D-B to advise the Owner of potential design changes in a timely manner and obtain authorization from CO before committing substantial resources to additional design
- D-B to submit an Environmental Compliance Plan identifying all environmental laws, rules and regulations

Lessons Learned from Phase 1 Implementation

- Require design packages submitted for review should be comprehensive including drawings, specifications, and calculations for the portion of the project under review.
- Require SOE design to be submitted with the facility design submittal if it is intended that the SOE is to remain in place permanently and not be removed upon construction completion. Specify any qualifications or restrictions against leaving SOE in place.
- Systems Contracts packages for traction power, signal, communication, ETS, etc. should be combined to reduce or eliminate duplication

Lessons Learned from Phase 1 Implementation

- Review the Intergovernmental Agreements (IGAs) to ensure that all commitments to signatories are flowed down through the D-B Contract. Ensure all state/local construction and monitoring requirements are imposed on the Contractor or otherwise accounted for.
- DB should provide accurate information to subs based on commitments that were made to the community
- Obtain written acceptance of plans submitted to Utilities for records.
- Fieldwork areas and restrictions need to be shown on design/permit plans to avoid surprises to agencies/public

Lessons Learned from Phase 1 Implementation

- Significant mixed-use development and economic activity at stations in Tysons and Reston
- Tysons to be home to 200,000 jobs and 100,000 residents by 2030
- More than a million square feet of office space under construction and another 15 million has been approved
- Significant residential, retail and hotels also underway
- Wiehle-Reston East Station multimodal hub includes Fairfax County P3 large mixed-use development

#	Project	Developer	Office SF	Retail SF	Res. Units	Hotel Key
		JBG Companies	409,769	259,373	900	450
		Rosenthal Automotive Group	1,590,000	215,000	2,379	250
		Perseus Realty	950,000	91,000	900	200
		Sunburst Hospitality	N/A	N/A	1,938	N/A
		Georgelas Group	1,699,179	114,100	4,000	N/A
		Greystar	N/A	6,500	400	N/A
7	NADA Site	NADA	N/A	TBD	800	N/A
8	Westpark Plaza	Dittmar	N/A	24,500	1,900	150-300
9	The Boro	Meridian Group	1,995,864	380,000	1,379	150
10	Tysons Central	NV Commercial/Clyde's Restaurants/ Foulger-Pratt	490,000 + 600,000	173,000	1,509	200
11	Greensboro Park PL	Beacon Capital	N/A	N/A	480	N/A
12	Arbor Row - Block A	Home Properties, Inc.	N/A	8,000	894	N/A
13	Arbor Row - Blocks B-D	Cityline Partners	910,565	41,500	N/A	250
14	Arbor Row - Block E	Hanover	N/A	7,000	490	N/A
15	AMT Building	AMT/American Real Estate Partners	200,000	N/A	N/A	N/A
16	7915 Jones Branch Drive	Kettler/PS Business Parks	N/A	N/A	275-400	N/A
17	Capital One	Capital One	3,179,747	128,791	1,200	1,800
18	Scott's Run North	Cityline Partners	1,064,528	85,490	454	N/A
19	Scott's Run South	Cityline Partners	3,798,218	143,530	3,172	380
20	Garfield Parcel	JLB Partners	N/A	N/A	425	N/A
21	Mitre 4	Mitre	340,000	N/A	N/A	N/A
22	Mitre 5	Mitre	492,000	N/A	N/A	N/A
23	The Commons	LCOR	N/A	N/A	3,571	N/A
24	Tysons Technology Center	Meridian Group	400,000	TBD	TBD	N/A
25	Tysons I	Macerich	1,391,000	148,000	1,300	300
26	Tysons II	Lerner Enterprises	457,000	19,000	0	0

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Lessons Learned from Phase 1 Implementation

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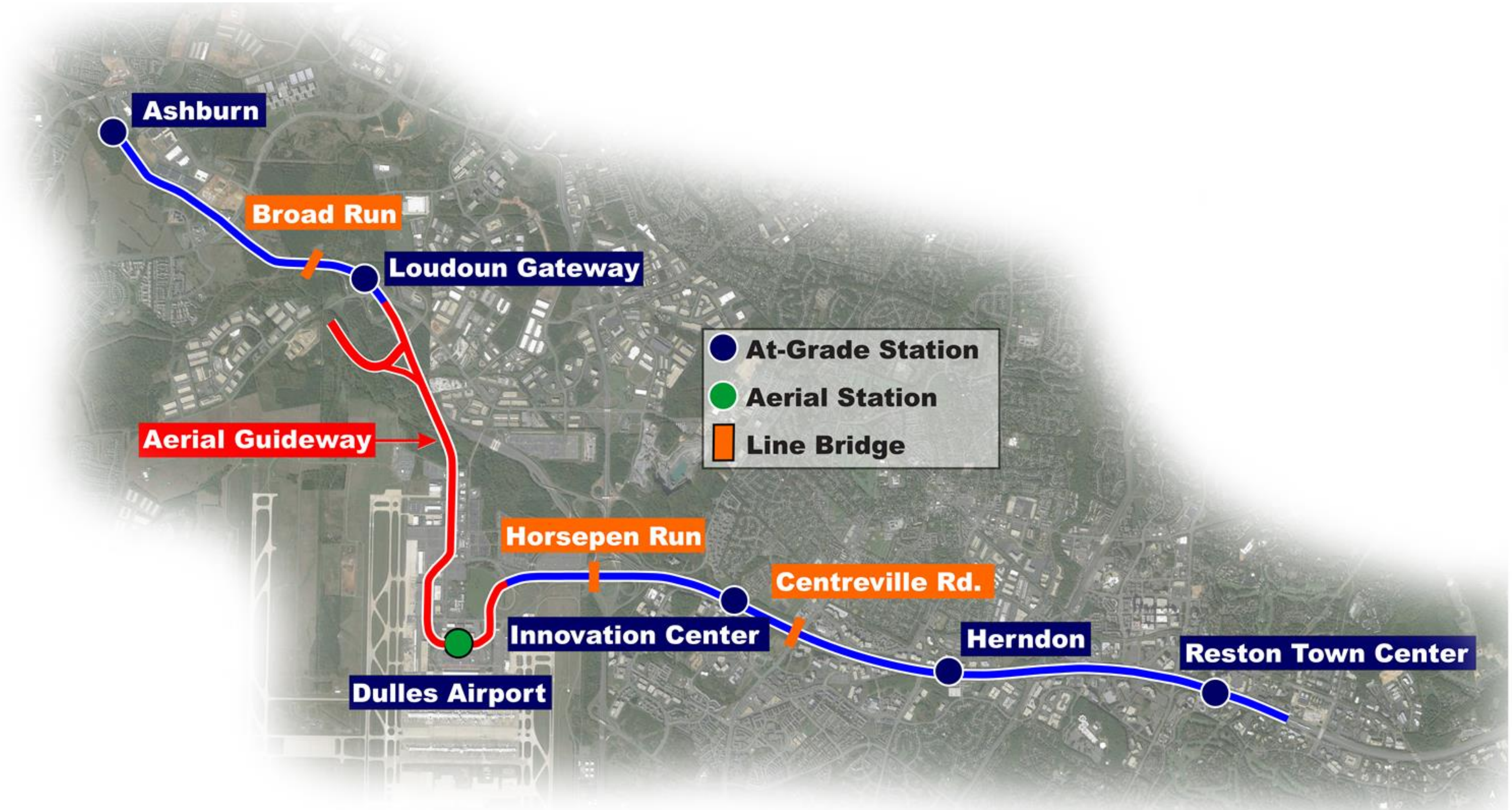
A Look at Phase 2



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A Look at Phase 2

- Phase 2 includes multiple packages competitively bid Design-Build:
  - Package A: Line, Stations and Systems
    - 6 Stations, 11.5 miles of revenue track
    - Construction 60% complete
    - Substantial Completion scheduled for late 2019
  - Package B: Service and Inspection Yard (major repair)
    - Largest in WMATA system, Storage for 184 vehicles, Expansion to 250
    - System Acceptance to commence in 2019

A Look at Phase 2

- Smaller packages for SWM ponds and Screenwall at IAD Station in procurement
- Localities Fairfax and Loudoun implementing parking garages at Herndon-Monroe, Innovation, Loudoun Gateway and Ashburn Stations
- Station at Dulles Airport was relocated during PE from “bowl” area underground to in front of north parking garage above ground (connection to terminal via pedestrian tunnel via moving sidewalks)
  - Value Engineering resulted in $600M+ cost reduction

A Look at Phase 2

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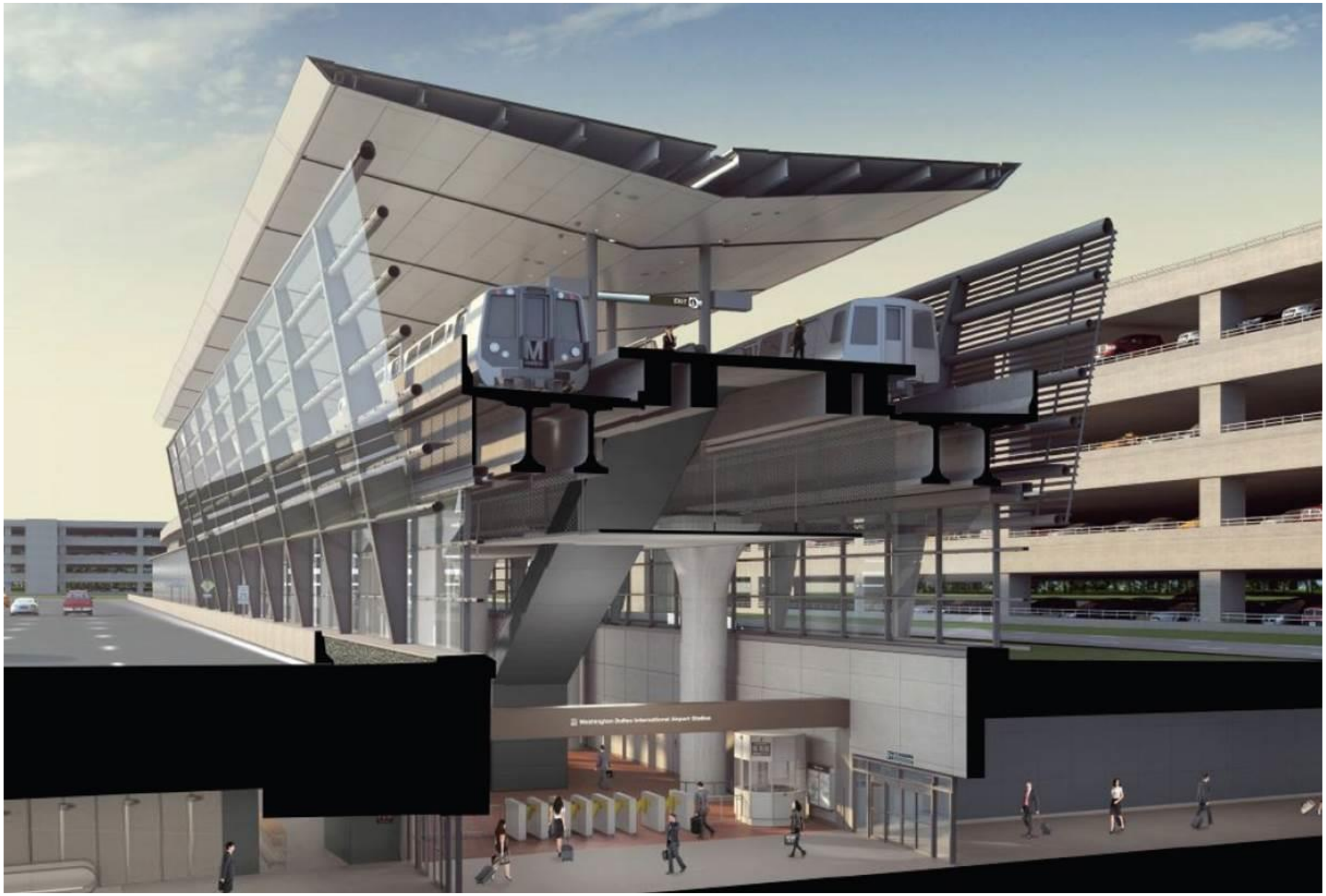

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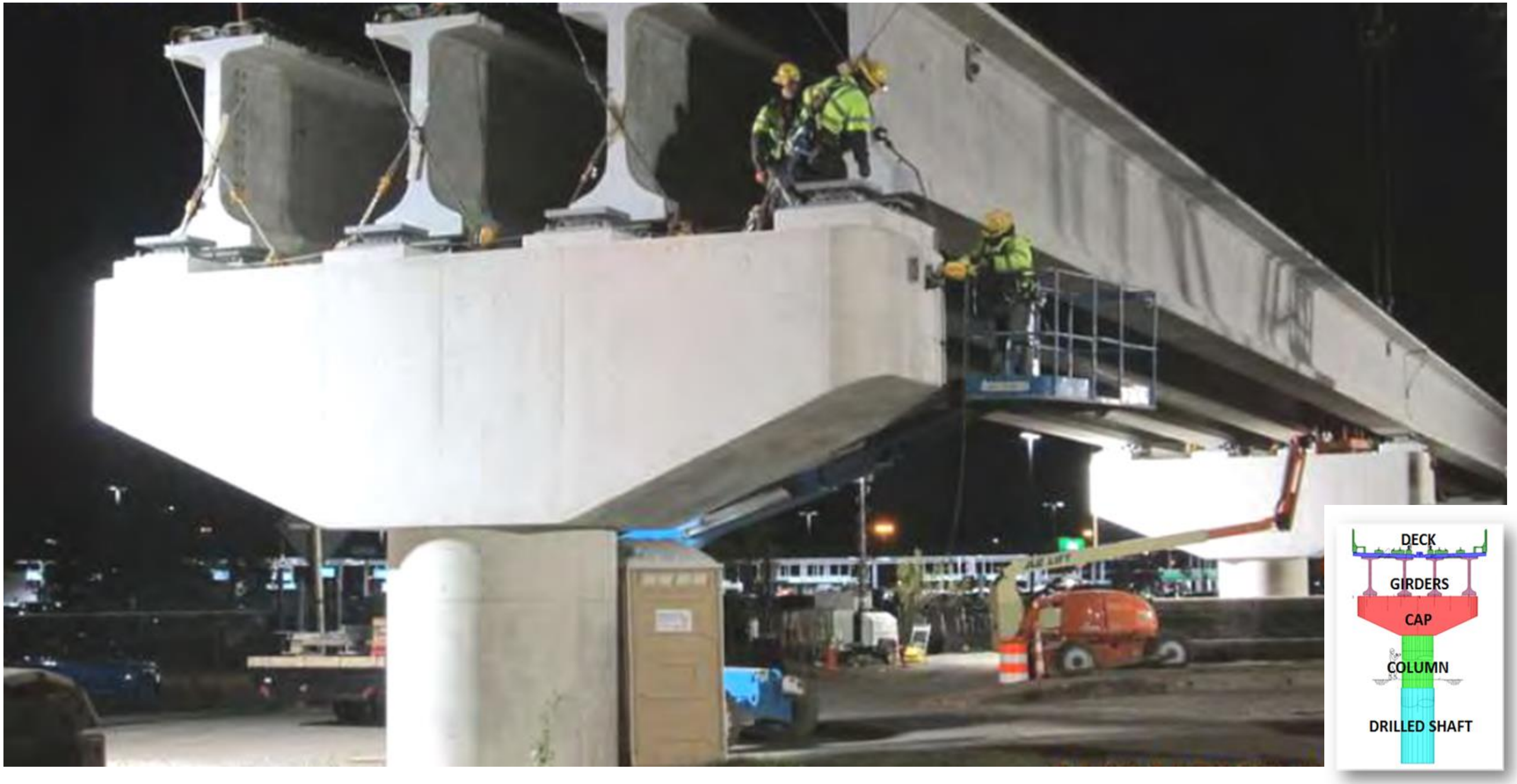

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Conclusion