



NOVA BICYCLE/PEDESTRIAN NETWORK STUDY

TPB Bicycle and Pedestrian Subcommittee

| May 28. 2024

Project Overview

Project Goal:

- **Identify, assess, and develop planning level cost ranges** for projected pedestrian/bicycle infrastructure needs in VDOT'S Northern Virginia localities over the next 5 to 10+ years.

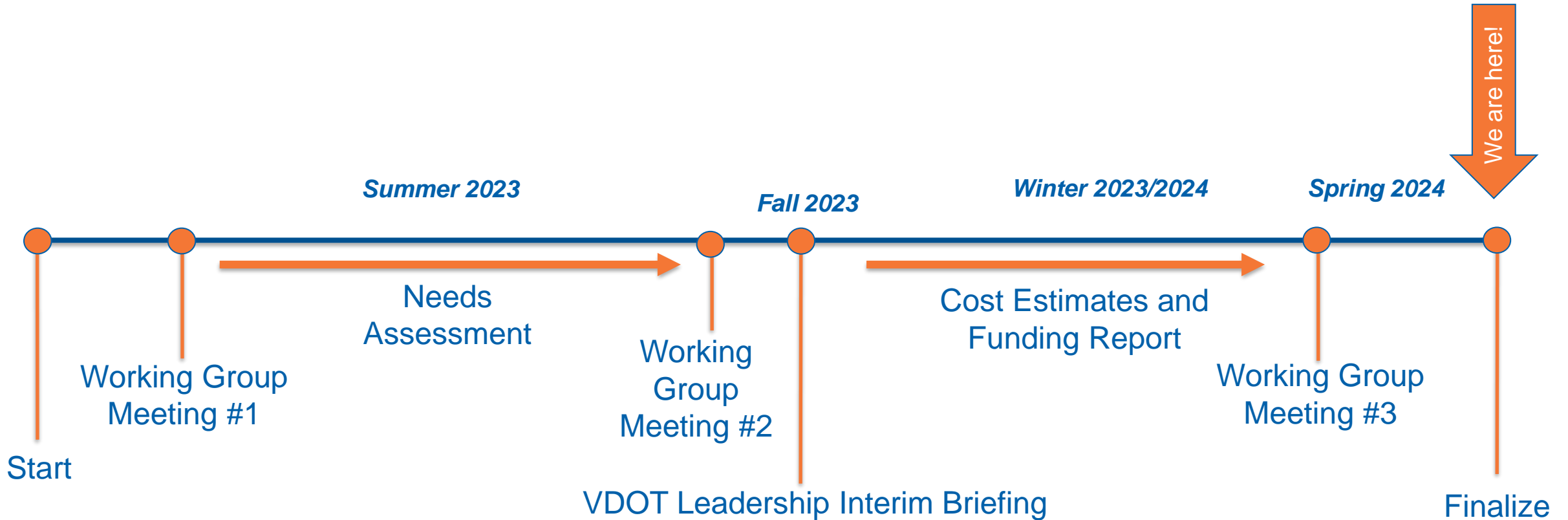
What this project is:

- Collaborative effort to develop a database, a map, and planning level cost estimate ranges of the *planned* bicycle/pedestrian infrastructure network

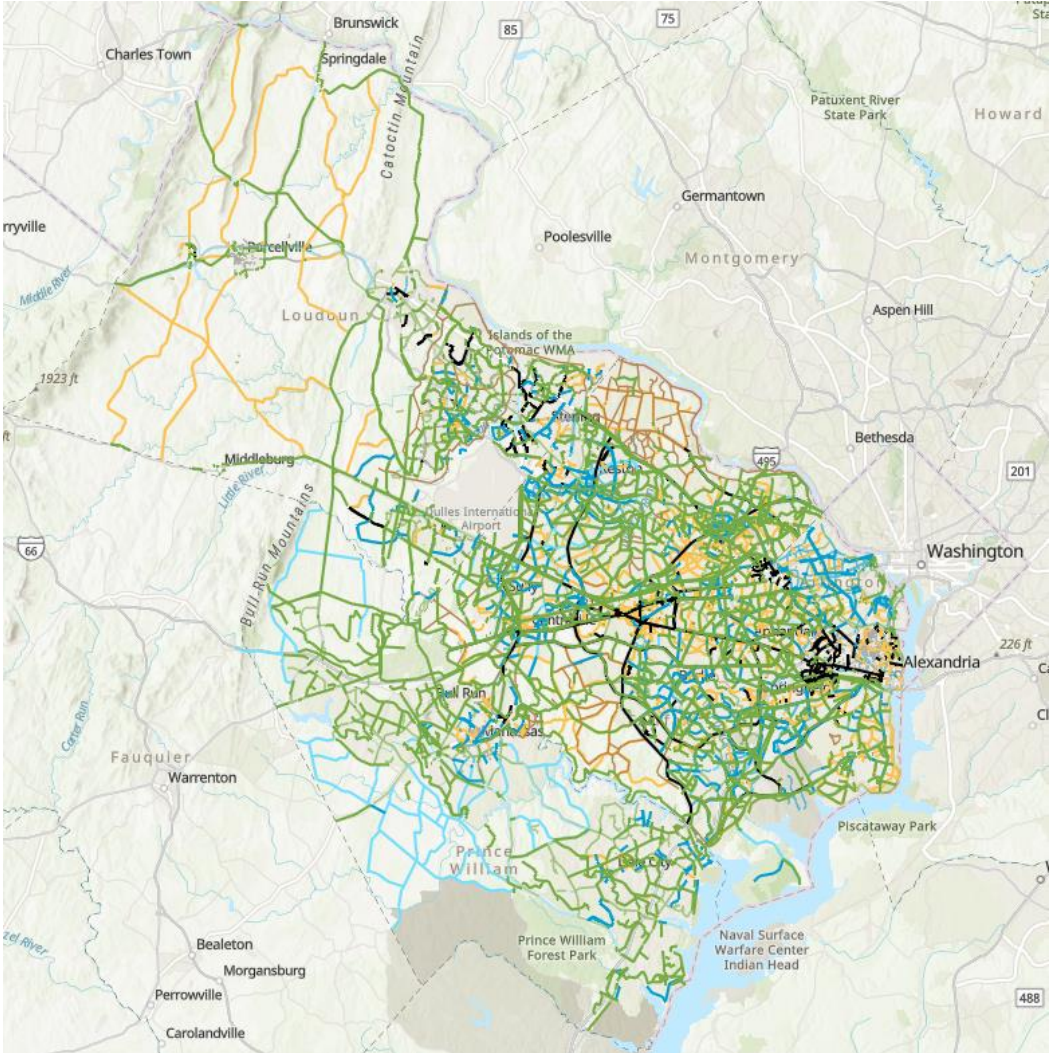
What this project isn't:

- Existing conditions review
- Gap analysis
- Project prioritization
- Active Transportation Plan

Project Status and Schedule



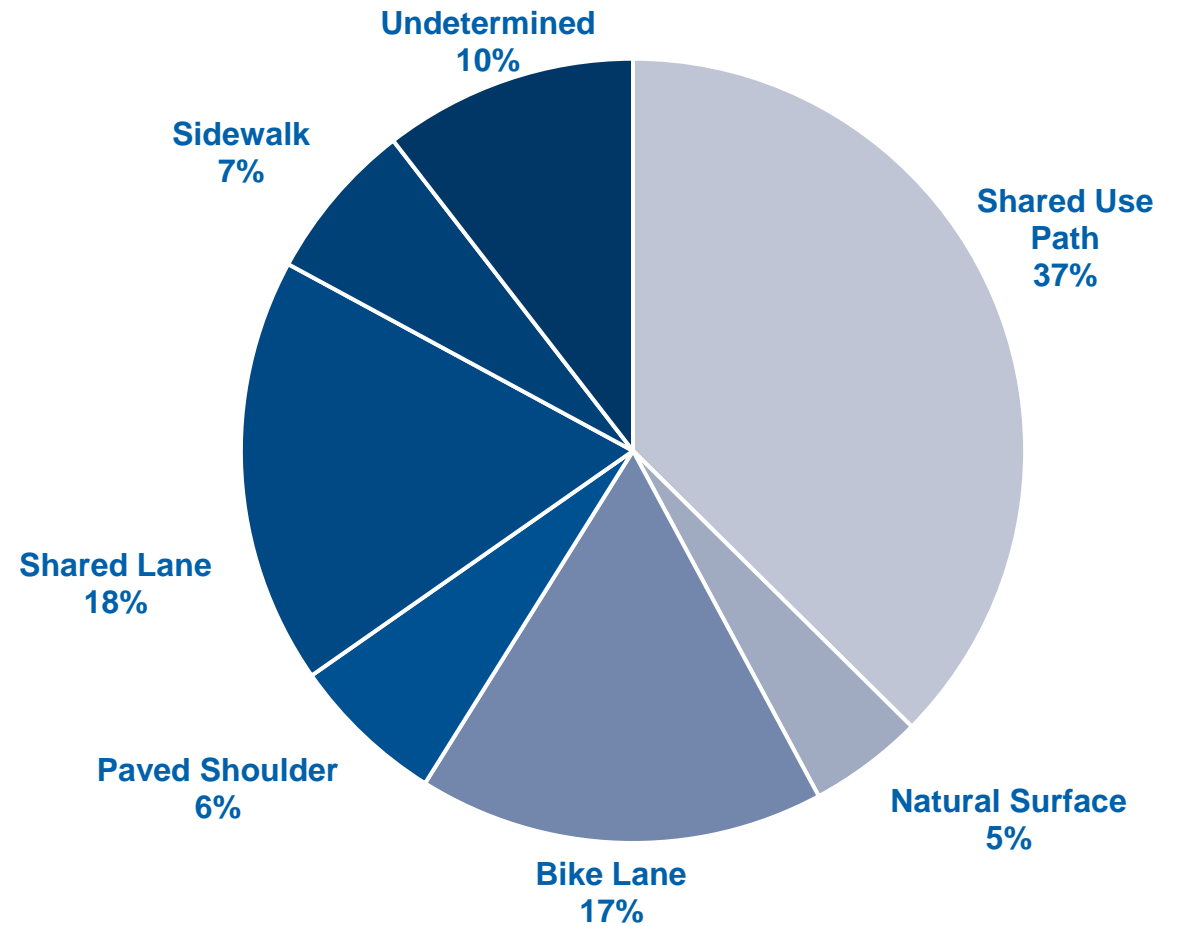
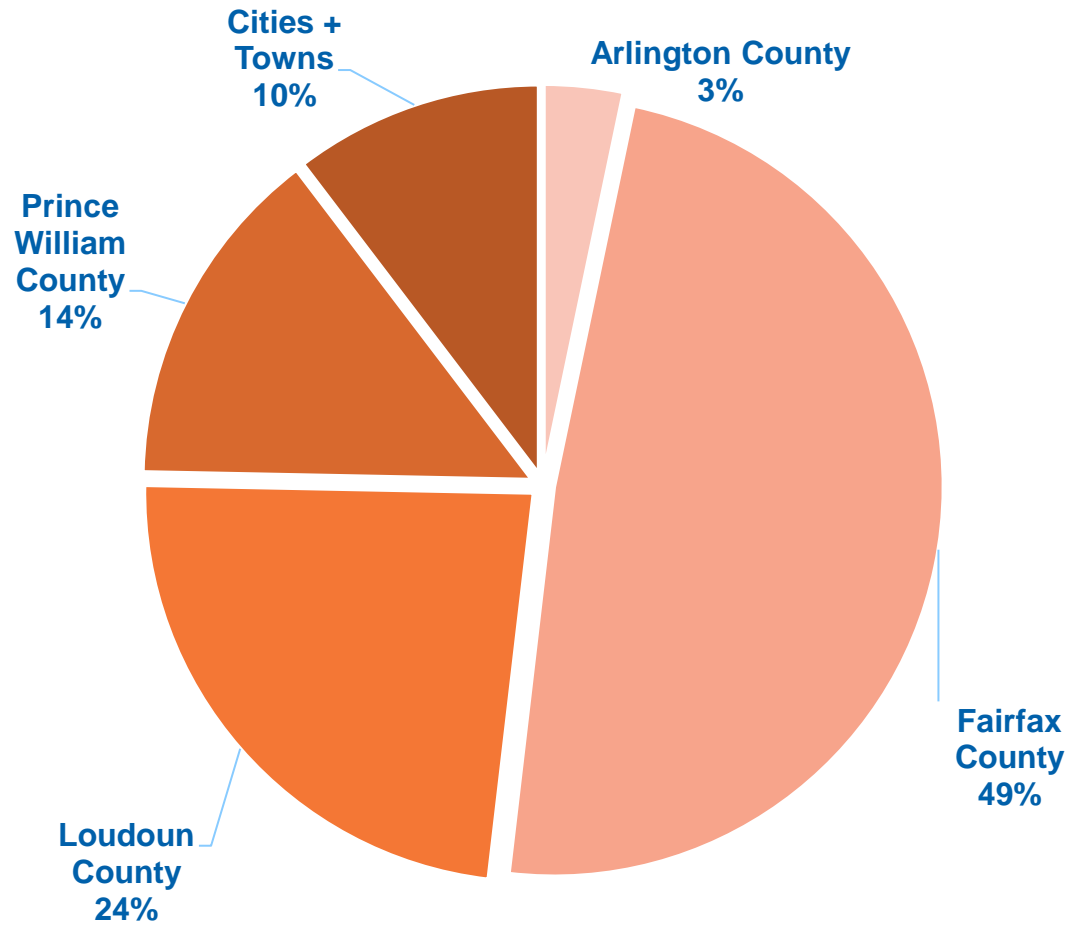
Finalized Planned Network Map



Planned Network Statistics

Jurisdiction	Shared Use Path (Mi)	Natural Surface (Mi)	Bike Lane (Mi)	Paved Shoulder (Mi)	Shared Lane (Mi)	Sidewalk (Mi)	Undetermined (Mi)	Total Mileage
Arlington	23	0	95	0	47	0	0	165
Fairfax	1,060	168	496	55	331	25	283	2,418
Loudoun	365	60	110	0	335	208	90	1,168
Prince William	348	1	76	263	26	0	0	714
Cities/Towns	68	7	57	0	139	97	148	516
Total Miles	1,864	236	834	318	878	330	521	4,981

Planned Network Statistics



Elements Analysis

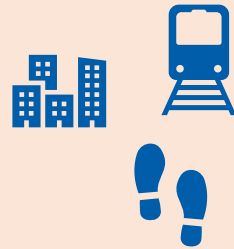
Analysis Intent

- Data sets which frame functionality of the network and help audiences focus in on key goals
 - What parts of the network meet different local and regional needs/goals (activity centers, transit access, regional trails...)
- May help provide support for funding

Elements Analysis

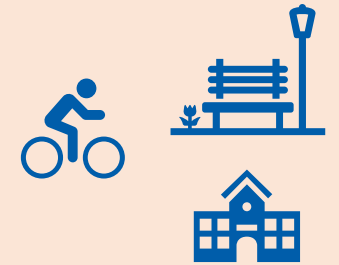
Focus Elements

- Activity Centers
- High-Capacity Transit
- Higher Need Populations
- Regional Trails



Standard Elements

- Capital Bikeshare Stations
- Park and Ride Lots
- Bus Stops
- K-12 Schools
- Colleges & Universities
- Regional Parks
- Local Parks
- Pedestrian Safety Action Plan Identified Corridor



Elements Analysis Methodology

Conduct a geospatial analysis on planned segments to evaluate connectivity

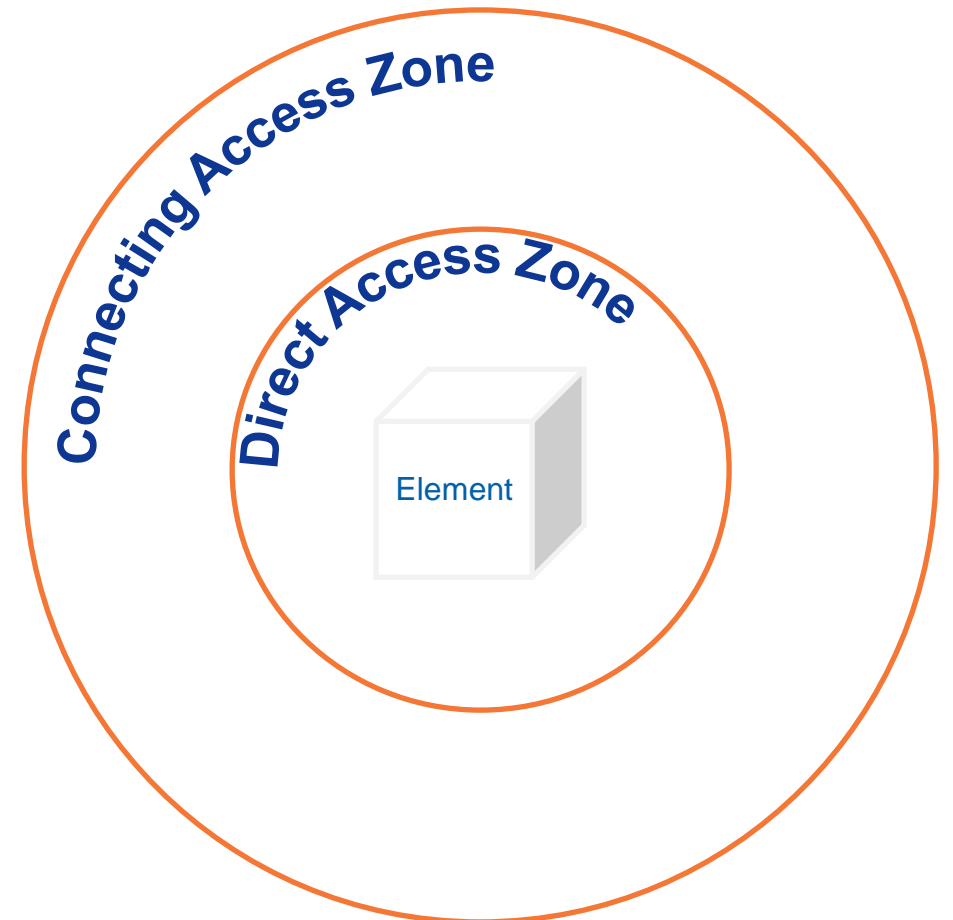
Direct Access Zone

Segments that provide direct access to the element

Connecting Access Zone

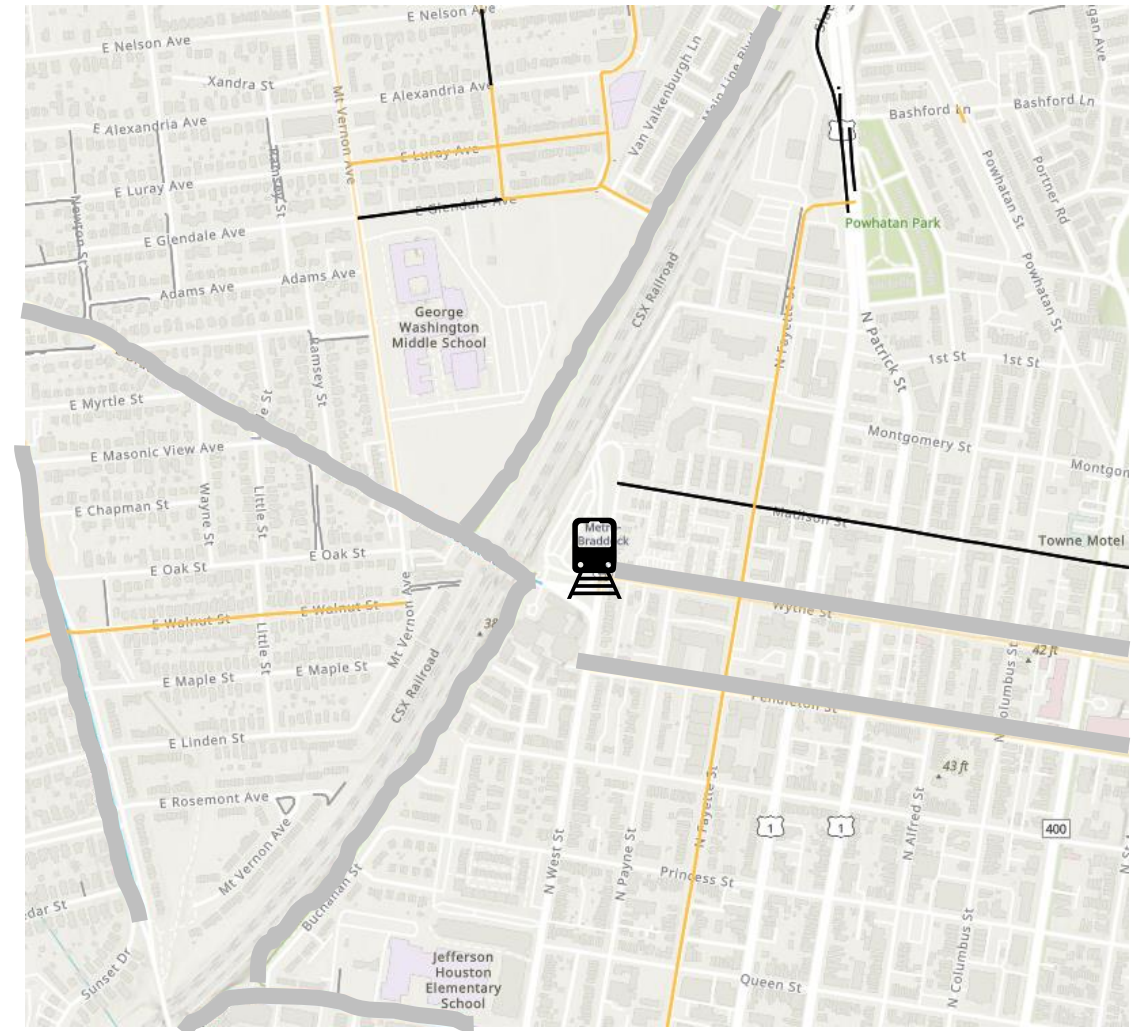
Segments that are further away from the element, but still provide enhanced connectivity specific to the element

**Zone distances vary based on element*



Elements Analysis Methodology

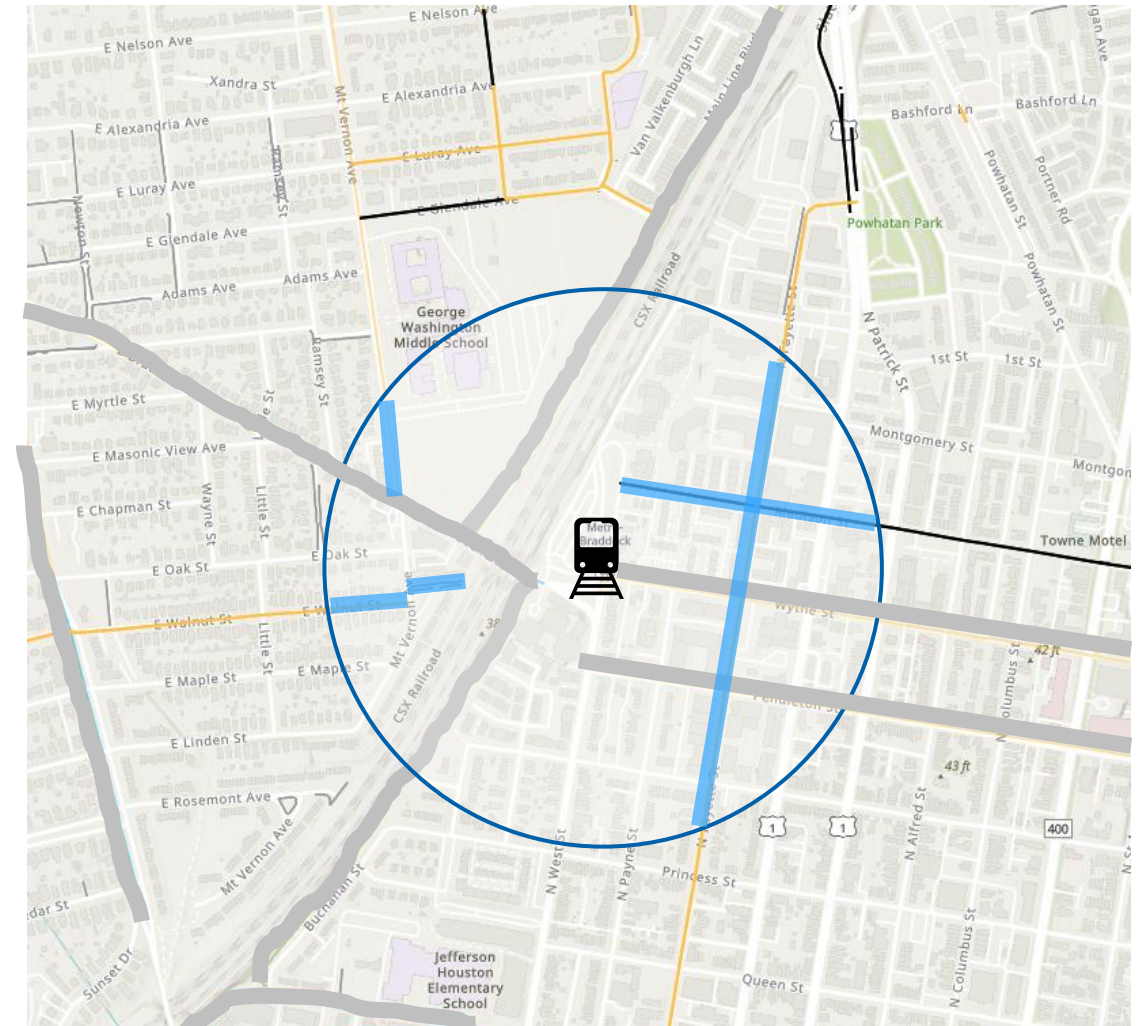
Example



Elements Analysis Methodology

Example

- Planned segments within the **direct access zone**, are included

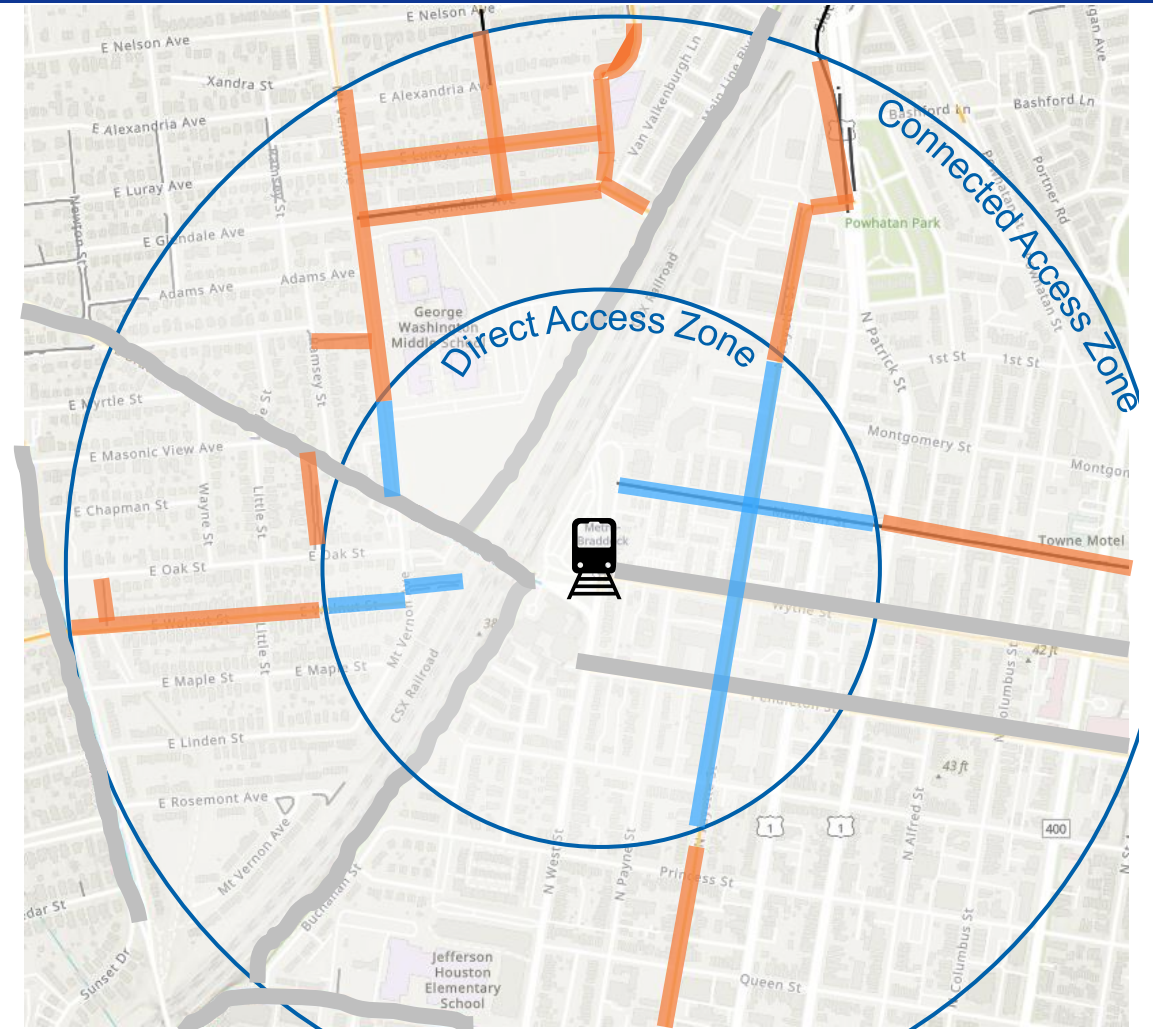


Existing segments
Planned segments captured through the direct access zone

Elements Analysis Methodology

Example

- Planned segments that connect to existing or planned facilities in the direct access zone, and are within the **connected access zone**, are included
- Segments within the **connected access zone** and disconnected from the existing or planned network, are not included

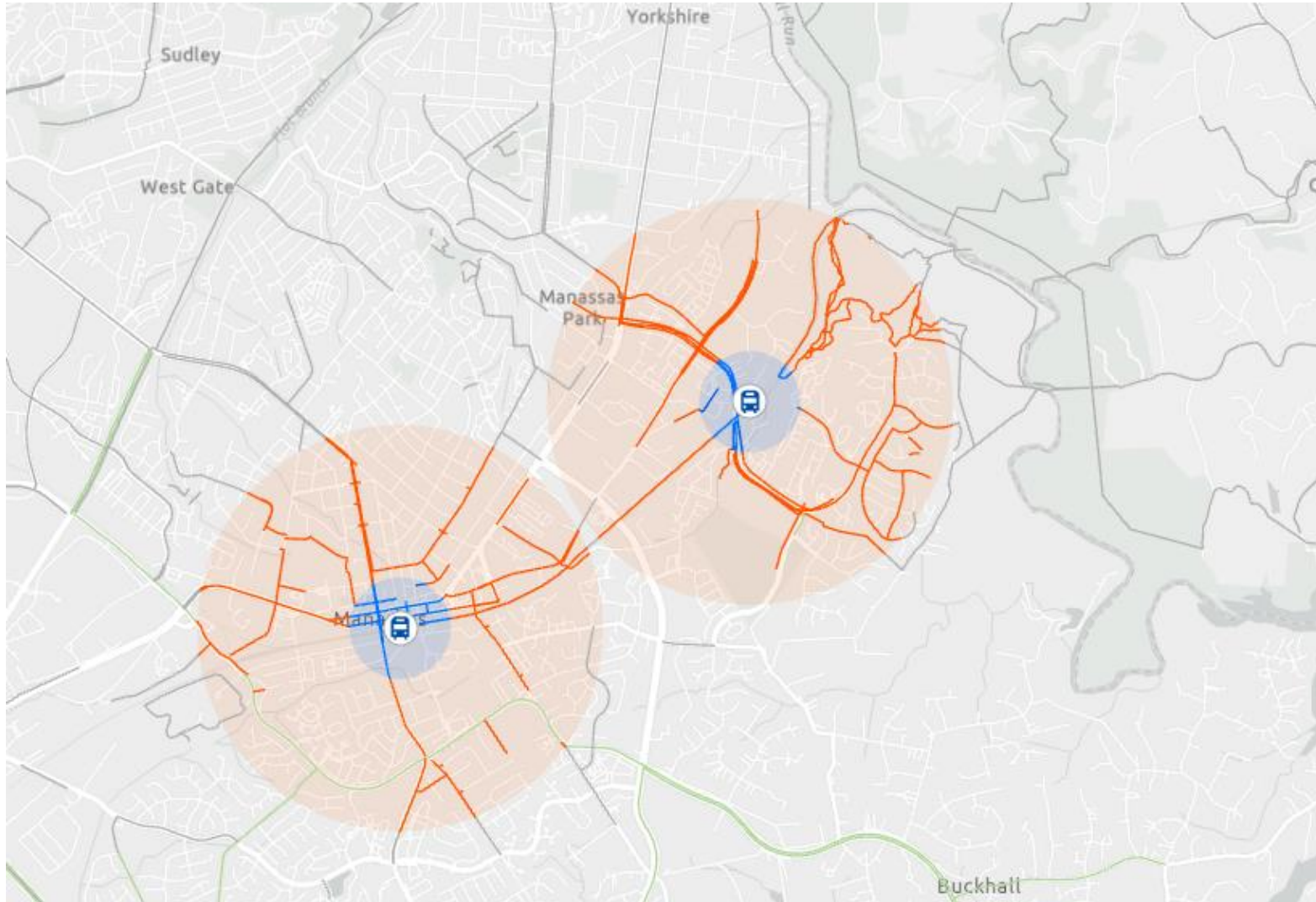


- Existing segments
- Planned segments captured through the **direct access zone**
- Planned segments captured through the **connected access zone**

Elements Analysis Results

Element	Direct Access (Miles)	Connected Access (Miles)	Total Access (Miles)	Percent of All Planned Facilities
Higher Need Populations	496	619	1,114	22%
Activity Centers	982	616	1,598	32%
High-Capacity Transit	93	507	600	12%
Regional Trails	744	1,179	1,923	39%
Capital Bikeshare Stations	27	253	280	6%
Park and Ride Lots	107	206	313	6%
Bus Stops	519	1,138	1,657	33%
Colleges & Universities	14	503	517	10%
Regional Parks	91	208	298	6%
Local Parks	738	954	1,692	34%
K-12 Schools	448	2,204	2,652	53%
Pedestrian Safety Action Plan Identified Corridor	941	484	1,425	29%

Elements Analysis – High-Capacity Transit

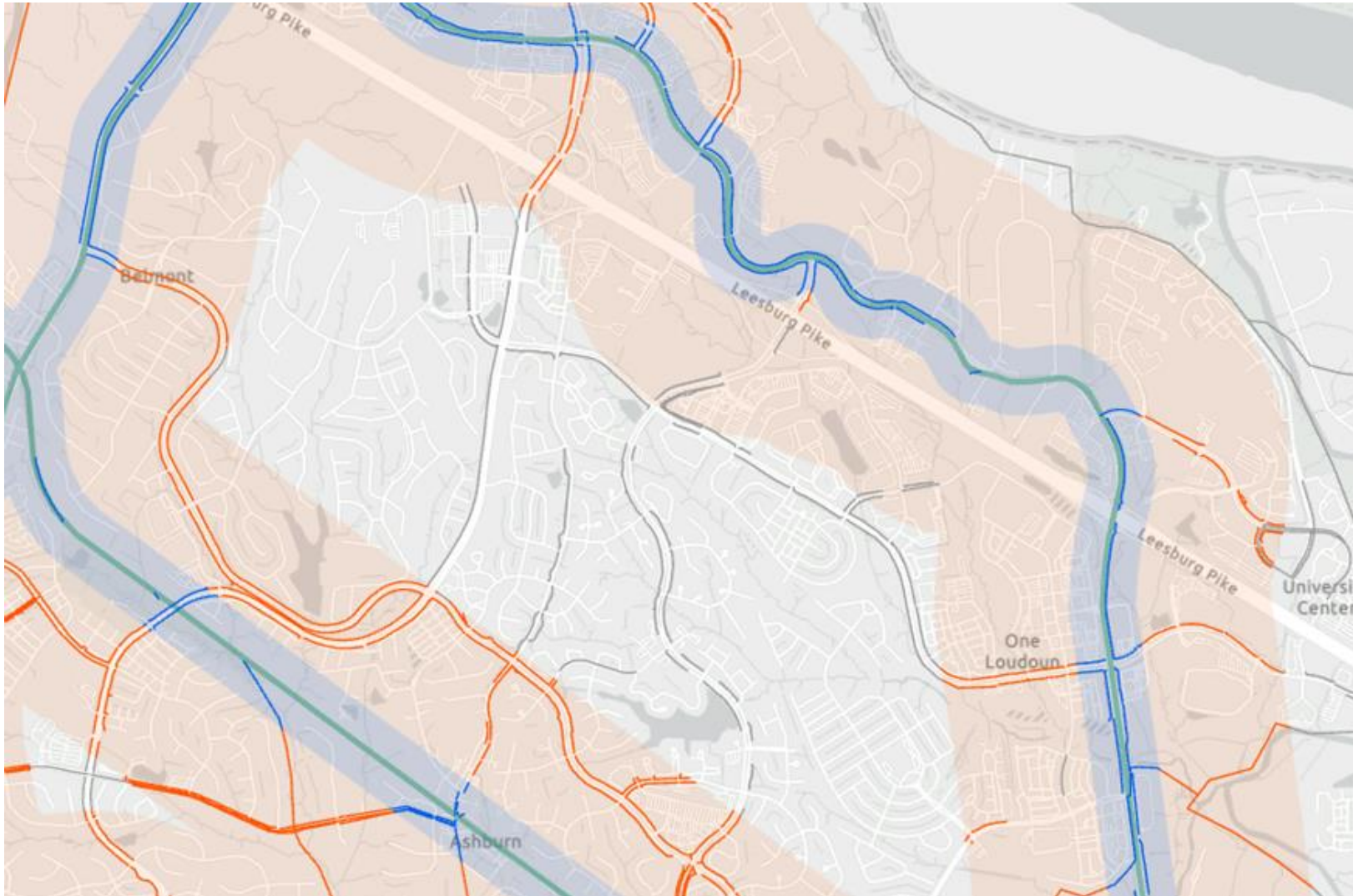


“Clipped” Planned Segments that Provide Access to High-Capacity Transit Stations (for mileage calculation)

Planned Facility Access to Transit Stations

Facility Type	Lane Mileage	Percent of All Planned Facilities
Shared Use Path	213	4%
Sidewalk	47	1%
Bike Lane	186	4%
Natural Surface Trail	4	~0%
Cycle Track	11	~0%
Shared Lane	99	2%
Undetermined Facility Type	41	1%
Total	600	12%

Elements Analysis - Regional Trails



“Clipped” Planned
Segments that Provide
Access to Regional Trails
(for mileage calculation)

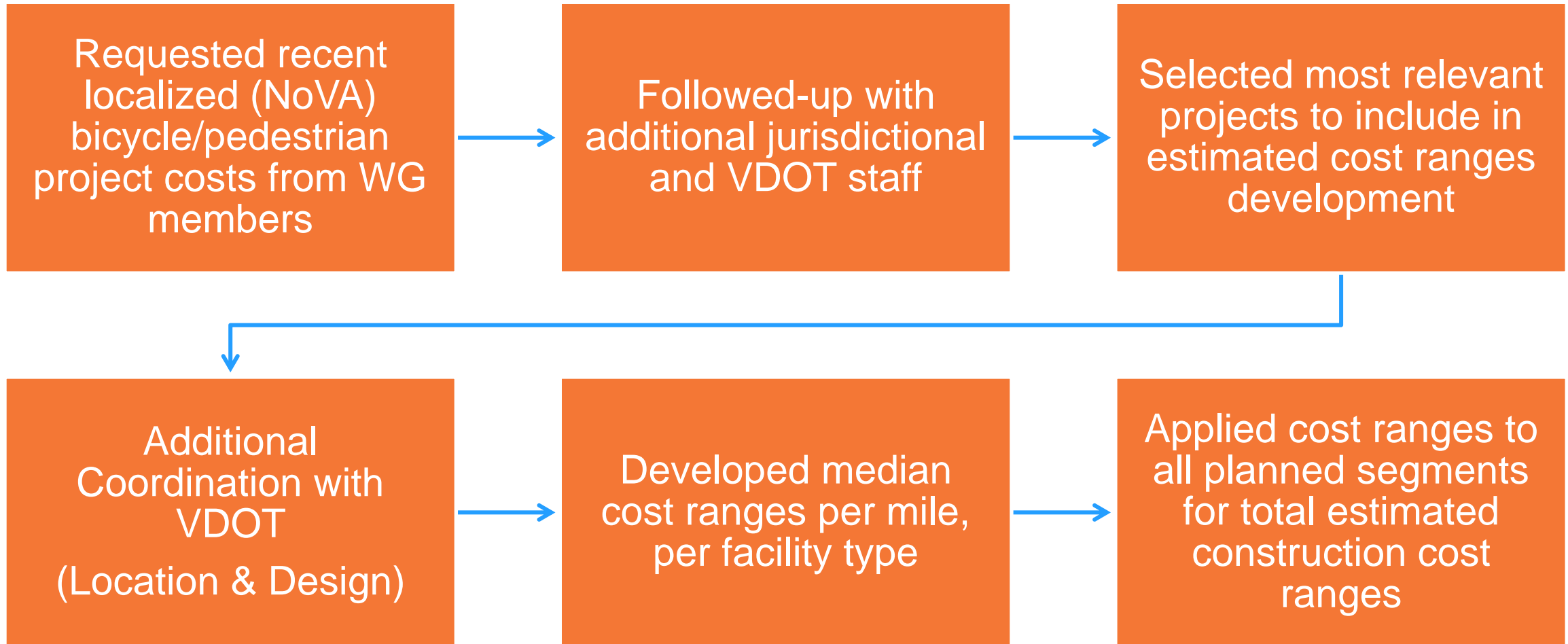
Planned Facility Access to Regional Trails

Facility Type	Lane Mileage	Percent of All Planned Facilities
Shared Use Path	835	17%
Sidewalk	126	3%
Bike Lane	395	8%
Natural Surface Trail	64	1%
Cycle Track	25	1%
Shared Lane	260	5%
Undetermined Facility Type	218	4%
Total	1,923	39%

Planning Level Cost Estimate Ranges

- **Develop planning level construction cost ranges for facility types based on recently constructed semi-local actual projects**
- ***Project costs include the facility itself along with a blend of other elements that were often found in projects in NOVA such as right-of-way, safety improvements, retaining walls, and/or intersection upgrades. These costs reflect land value and other factors specific to NOVA and may not be accurate for the other geographies within the Commonwealth.***

Cost Estimating Methodology



Planning Level Cost Estimate Ranges, Per Mile (NOVA)

Median Cost Estimates – per mile (NOVA)				
	2022 Low Cost Estimate	2022 High Cost Estimate	2034 Low Cost Estimate	2034 High Cost Estimate
Shared Use Path Project	\$4,385,000	\$9,110,000	\$7,020,000	\$14,580,000
Cycle Track Project	\$1,840,000	\$3,815,000	\$2,945,000	\$6,105,000
Sidewalk Project	\$2,340,000	\$4,860,000	\$3,745,000	\$7,780,000
Bike Lane	\$310,000	\$645,000	\$500,000	\$1,035,000
Shared Lane	\$30,000	\$55,000	\$50,000	\$90,000
Natural Surface Trail Project	\$205,000	\$420,000	\$330,000	\$675,000

Estimated Cost Ranges by Focus Element

Elements	Planned Access Miles	2022 Low-Cost Estimate	2022 High-Cost Estimate	2034 Low-Cost Estimate	2034 High-Cost Estimate
Higher Need Populations	1,114	\$2.1 billion	\$4.5 billion	\$3.5 billion	\$7.2 billion
Activity Centers	1,598	\$3.1 billion	\$6.5 billion	\$5.0 billion	\$10.4 billion
High-Capacity Transit	600	\$1.1 billion	\$2.3 billion	\$1.8 billion	\$3.7 billion
Regional Trails	1,923	\$4.1 billion	\$8.5 billion	\$6.6 billion	\$13.6 billion

Likely Timeframes for Completion

Shorter Term Projects

- Bike Lanes
- Shared Lanes
- Natural Surface Trails (depends)

Longer Term

- Shared Use Path
- Cycle Tracks
- Sidewalks

Next Steps

- Finalize Report
- Launch Online Map
- Materials will go to VDOT Executives, Secretary of Transportation, select Gen. Assembly members Summer '24

THANK YOU!

Final questions or comments

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