



Duke Street Service Roads & Intersections

November 2023

Question & Answers

- **Write Questions & Comments in chat**
- **If not all questions are answered by end of meeting, staff will share responses following the meeting**
- **If you would like to instead contact us directly please email - hillary.orr@alexandriava.gov and daniel.scolese@alexandriava.gov**

Agenda

▶ **01.**
**Meeting
Purpose**

▶ **02.**
**Duke Street
Transitway
Recap**

▶ **03.**
**Cambridge/
Roth
Intersection
Concepts**

▶ **04.**
**Service
Road
Design
Options**

▶ **05.**
**Next Steps
and Q&A**

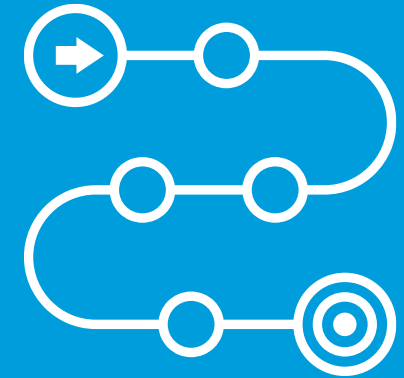
Meeting Purpose



Follow-up on design options from the Duke Street Transitway project concept



Get Community feedback on design options and priorities



Provide process and timeline for future discussions and decisions

DUKE STREET TRANSITWAY TIMELINE

2008

Duke Street
Identified as
future transit
corridor

2012

Transitway
Concept Plans
Approved

2018 &
2020

- \$12M
Planning
funding
awarded
- \$75M
Construc-
tion funding
awarded

2021

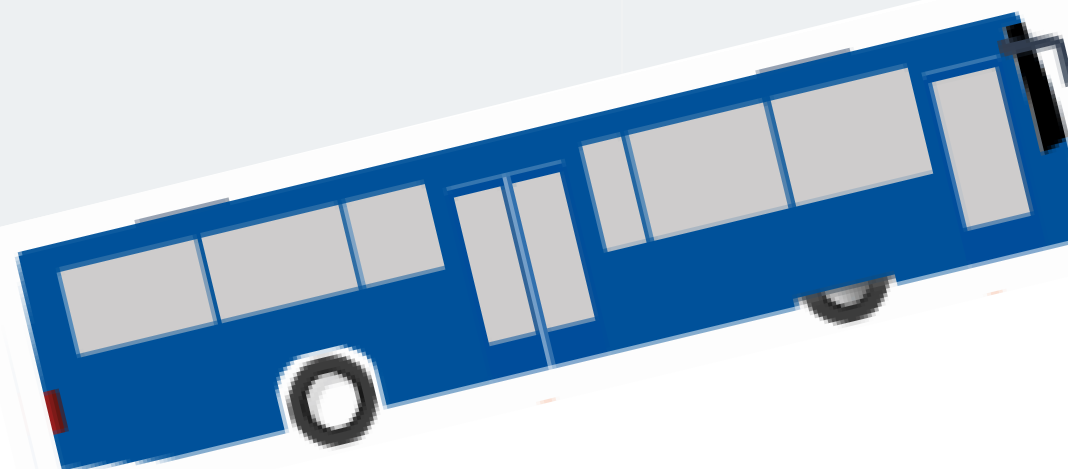
Phase I -
Community
Visioning

2022

Phase II -
Concept
Planning -
Community
Priorities &
Tradeoffs

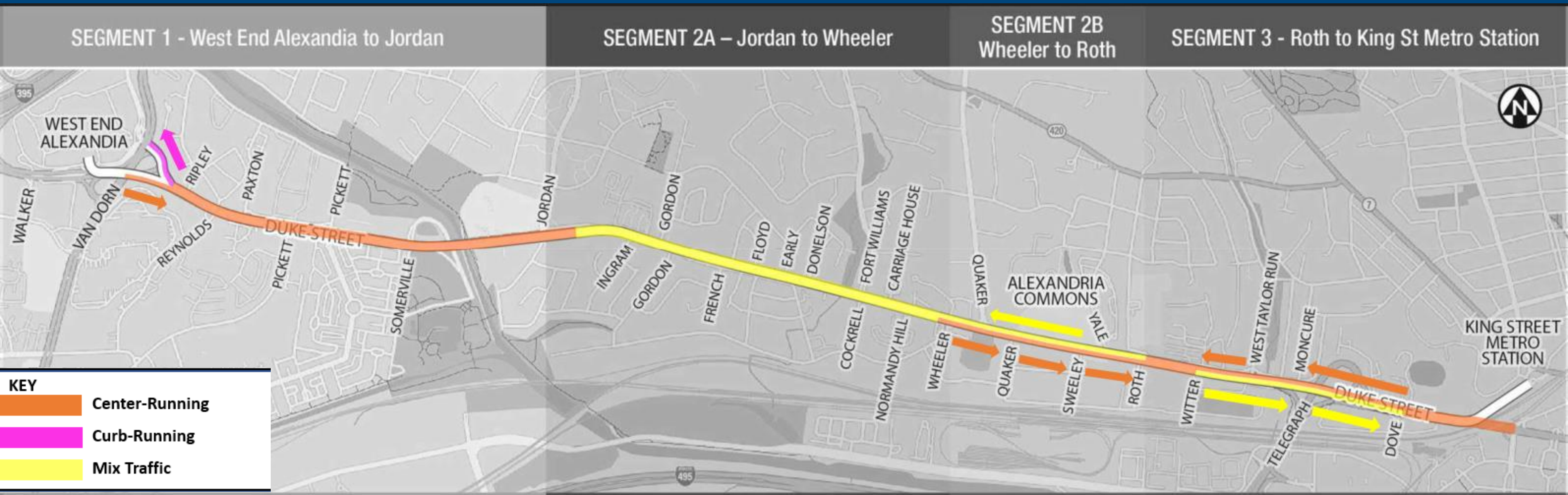
2023

- Phase III -
- Concept
Refinement
& Curb
Features
 - Council
Action



Duke Street Transitway Recap - What happened?

- City Council approved Concept A
- If cost becomes an issue near term, Quaker-Roth could become mixed traffic
- Continue discussions with community in Segment 3 regarding service road design



Cambridge & Roth Intersection

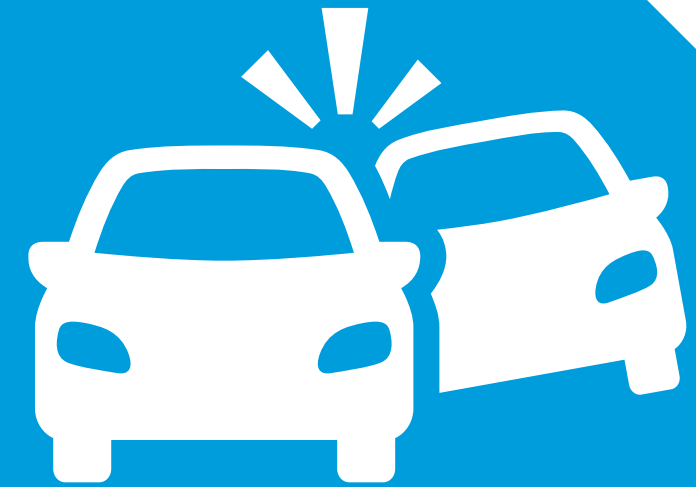
What is proposed and why we're talking about service roads



Community input to improve this intersection



Overall Intersection Level of service F (not good)



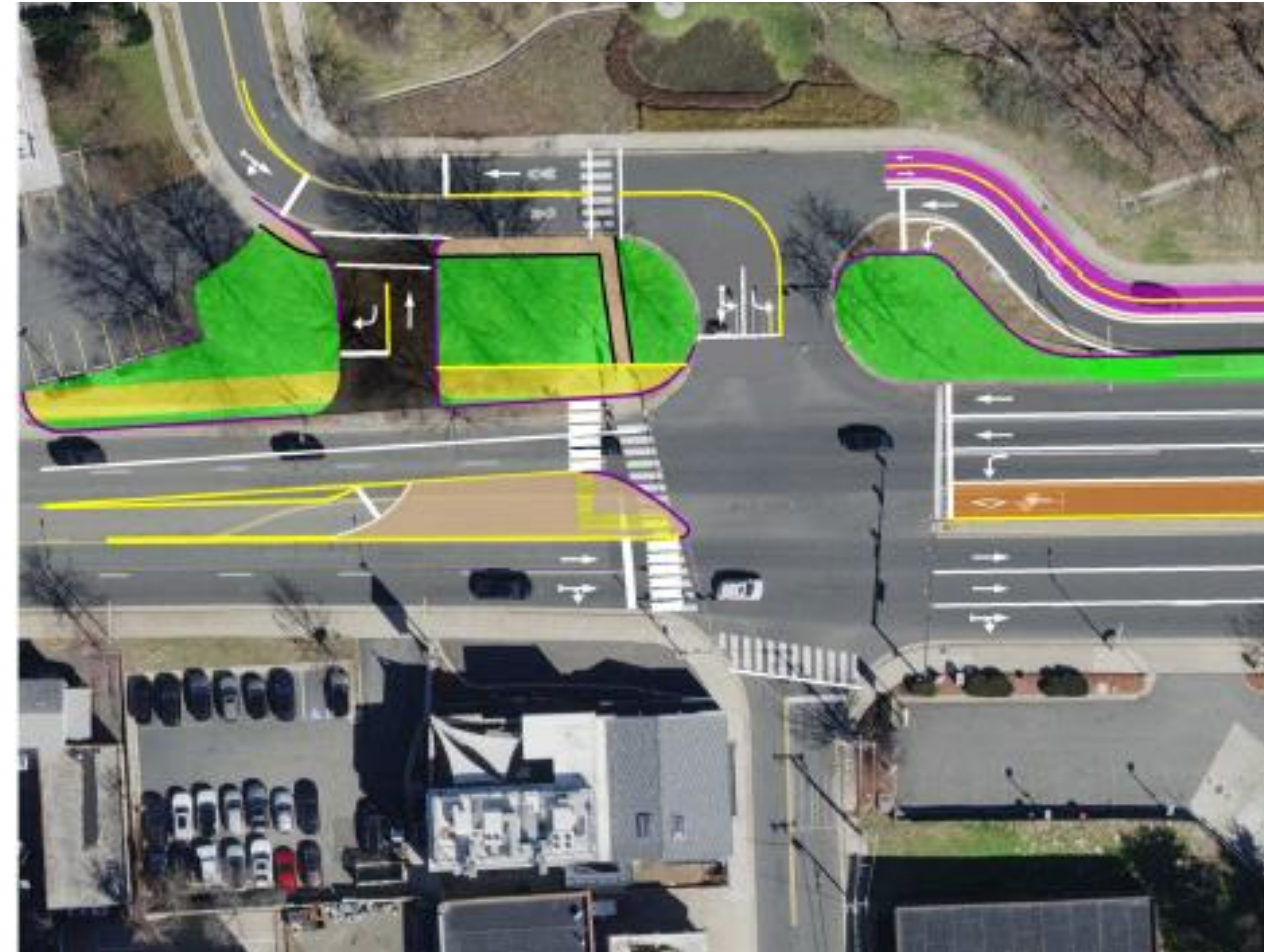
Multiple conflict points and concerns about safety

Option 1 - No Build



- No changes to the service road
- Right turns onto Cambridge in advance of intersection

Option 2 - Separated



- One-way service road
- Eastbound left-turns and southbound right-turns relocated to new spur road connecting to Cambridge Road

Option 3 - Through-cut



- One-way service road
- No through movement north/south through movement

Full Intersection LOS	137.0 seconds/vehicle - F	86.6 seconds/veh - F	30.6 seconds/vehicle - C
Cambridge Rd LOS	195.1 seconds/vehicle - F	80.9 seconds/vehicle - F	72.2 seconds/vehicle - F
Conflict Points / Safety	32 at Duke St and Cambridge Rd 9 at Cambridge Rd and Service Rd	25 at Duke St and Cambridge Rd 6 at Cambridge Rd and Service Rd	23 at Duke St and Cambridge Rd 4 at Cambridge Rd and Service Rd

Intersection Option 1 - No Build

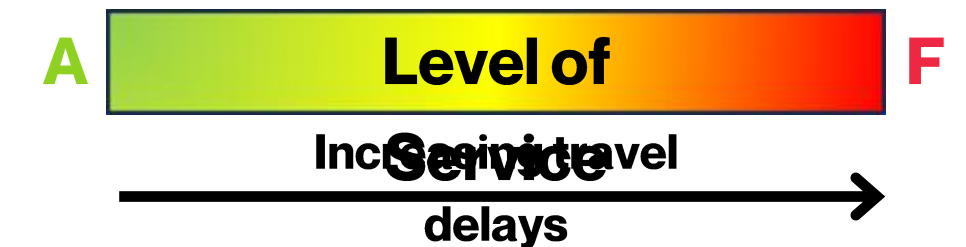


Intersection Description:

- Minimal changes to existing intersection
- No changes to the service road
- Right turns onto Cambridge in advance of intersection

Traffic Operations:

- Intersection Level of Service: **F**
 - **137 seconds** per vehicle
- Cambridge Road Level of Service: **F**
 - **197 seconds** per vehicle



Safety:

- Similar conflicts as existing intersection
- Modest pedestrian improvements
- Conflict Points: **32** at Duke & **9** at Cambridge



Conflict Point: Potential locations of where vehicle travel paths intersect and a collision risk occurs

Intersection Option 2 - Separated

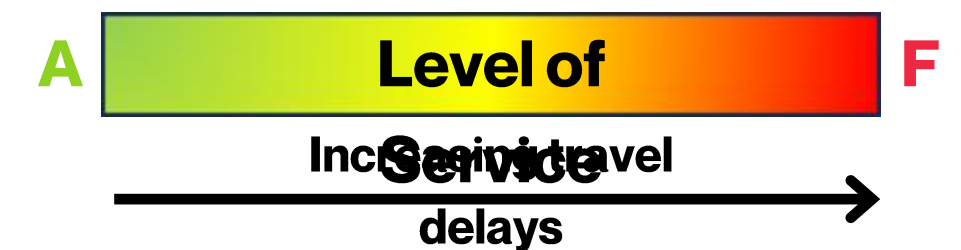


Intersection Description:

- One-way service road
- Eastbound left-turns and southbound right-turns relocated to new road connecting to Cambridge Rd.
- Right turns onto Cambridge Rd. in advance of intersection

Traffic Operations:

- Intersection Level of Service: **F**
 - **87 seconds** per vehicle
- Cambridge Rd. Level of Service: **F**
 - **81 seconds** per vehicle



Safety:

- Pedestrian refuge with less conflicting movement
- Conflict Points: **25** at Duke & **6** at Cambridge



Conflict Point: Potential locations of where vehicle travel paths intersect and a collision risk occurs

Intersection Option 3 - The Through-cut

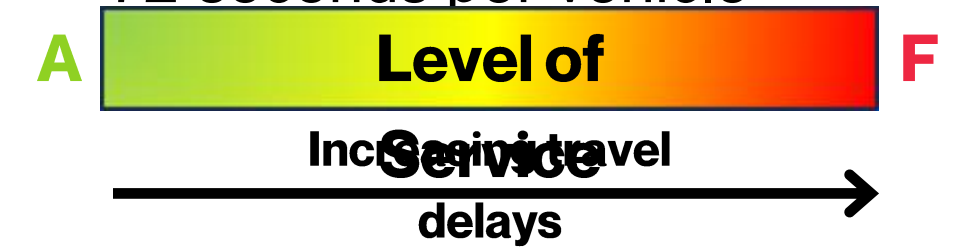


Intersection Description:

- Same as Option 2
- No southbound access from Cambridge to Roth (5 cars in peak)

Traffic Operations:

- Intersection Level of Service: **C**
 - 31 seconds per vehicle
- Cambridge Road Level of Service: **F**
 - 72 seconds per vehicle



Safety:

- Pedestrian refuge with less conflicting movement
- Minimal conflicts with all modes at service road
- Faster travel on Duke Street reduces cut-through traffic
- Conflict Points: **23** at Duke & **4** at Cambridge



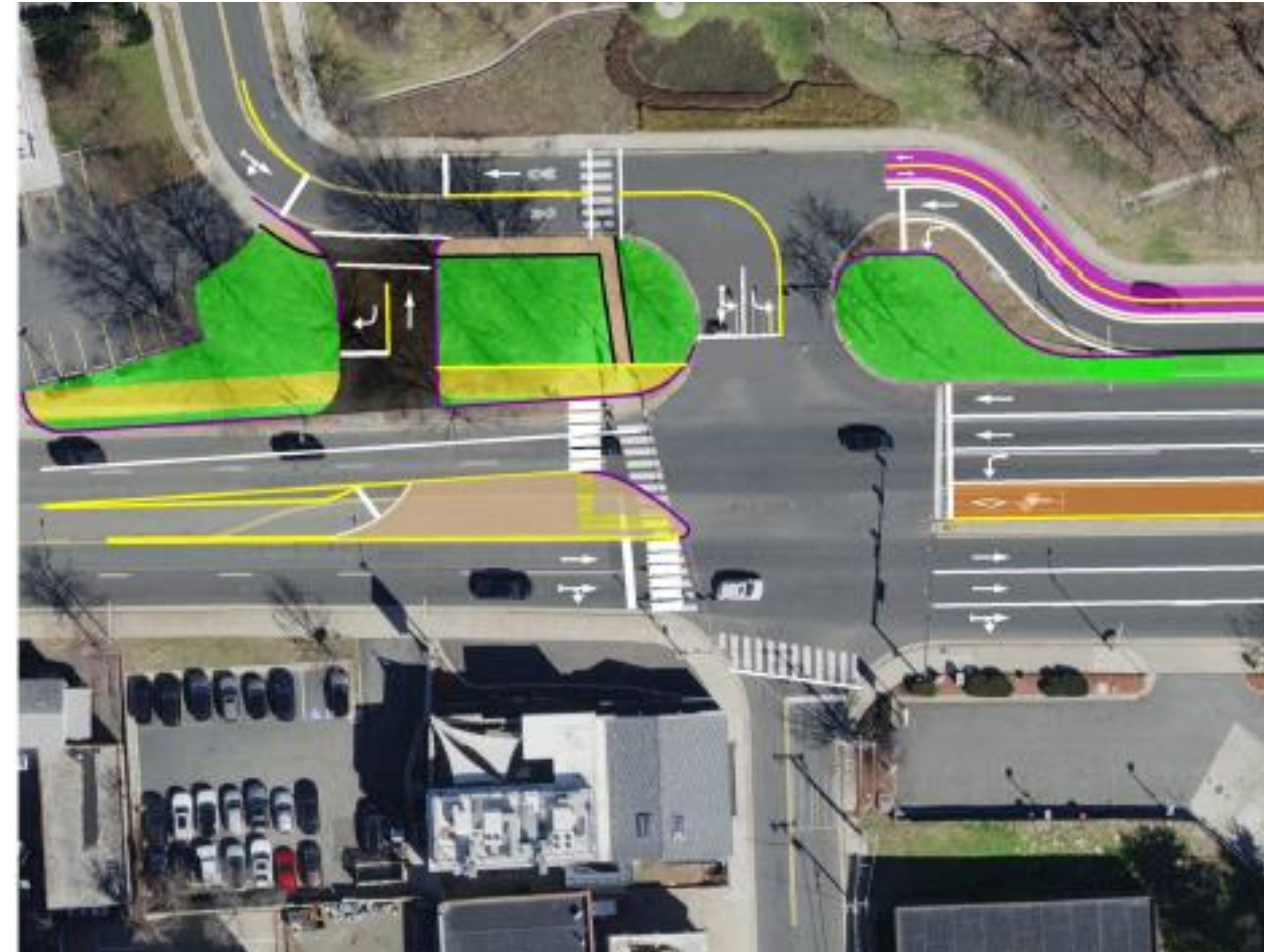
Conflict Point: Potential locations of where vehicle travel paths intersect and a collision risk occurs

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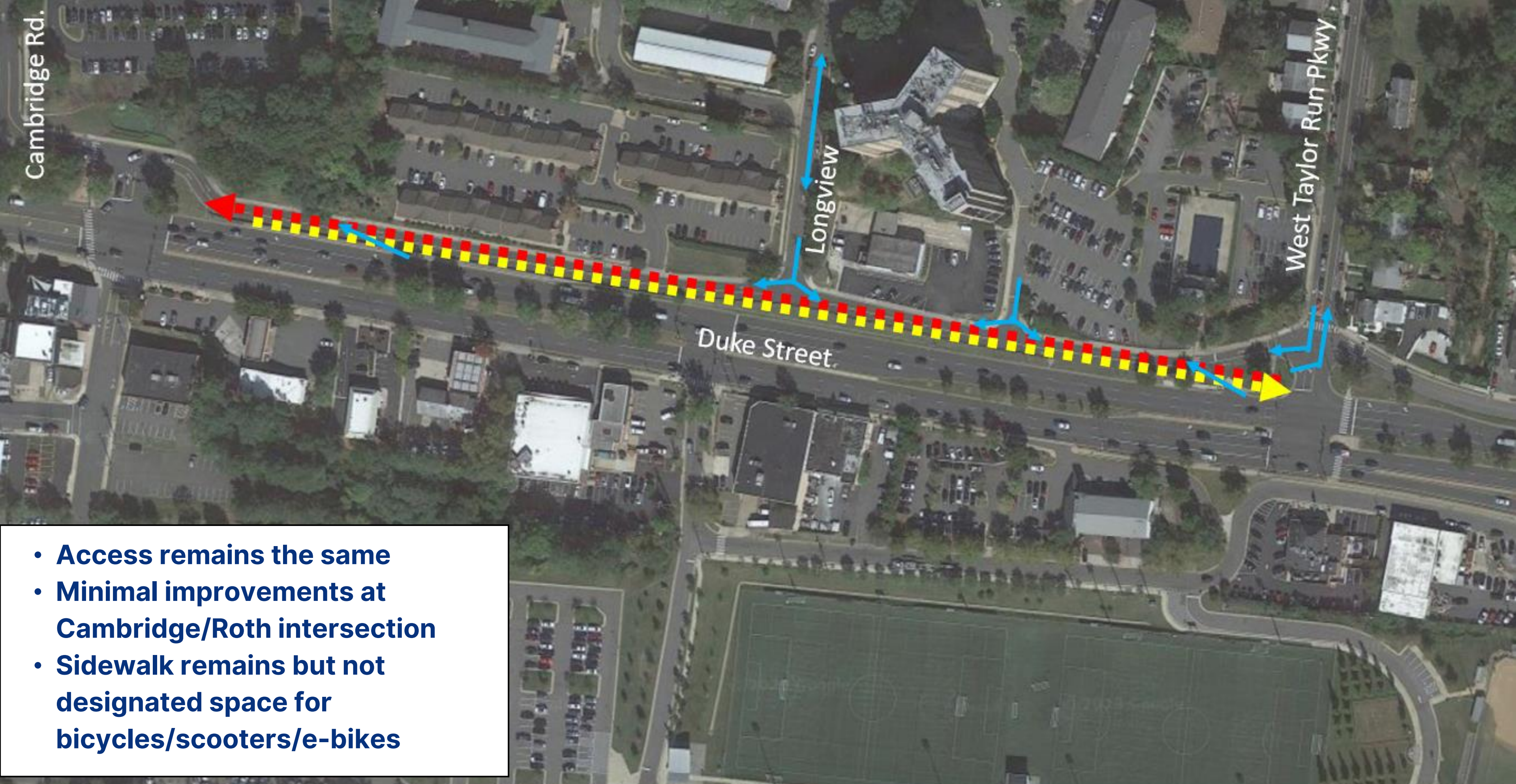
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Option 3 - Through-cut



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Cambridge Rd.

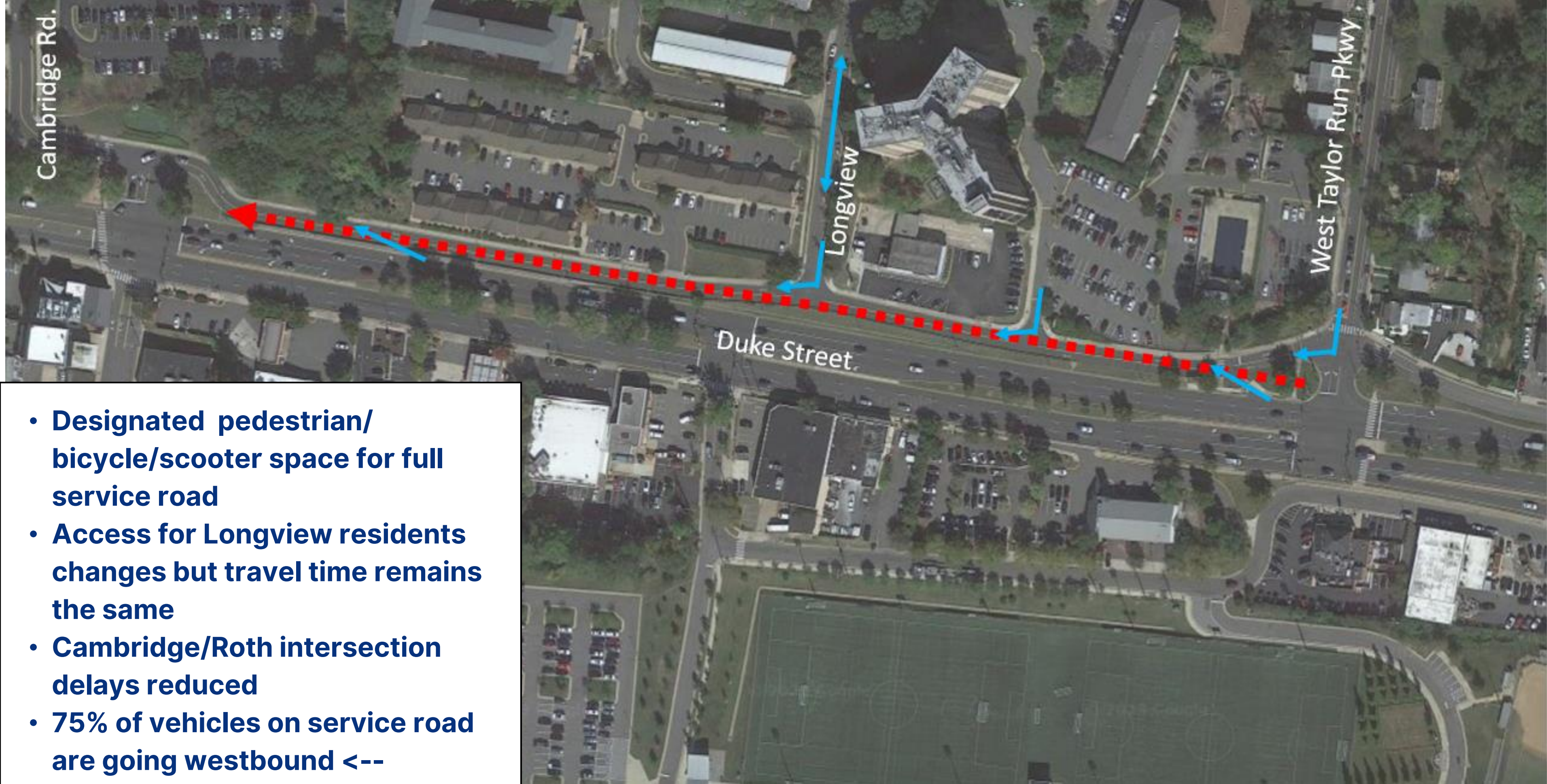
Longview

Duke Street

West Taylor Run Pkwy

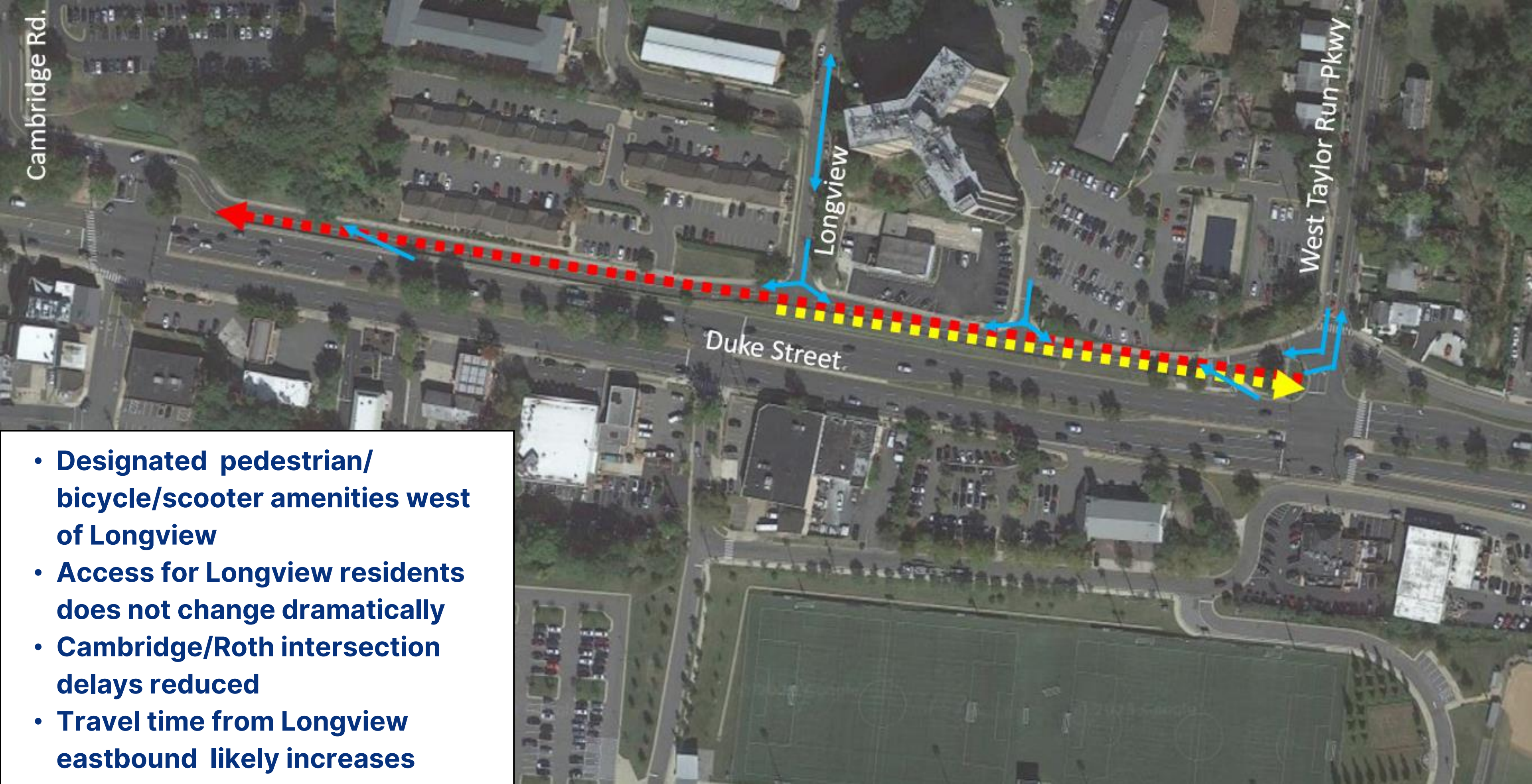
- Access remains the same
- Minimal improvements at Cambridge/Roth intersection
- Sidewalk remains but not designated space for bicycles/scooters/e-bikes

Service Road Option 1 - Two-way



- Designated pedestrian/ bicycle/scooter space for full service road
- Access for Longview residents changes but travel time remains the same
- Cambridge/Roth intersection delays reduced
- 75% of vehicles on service road are going westbound <--

Service Road Option 2 - One-way westbound

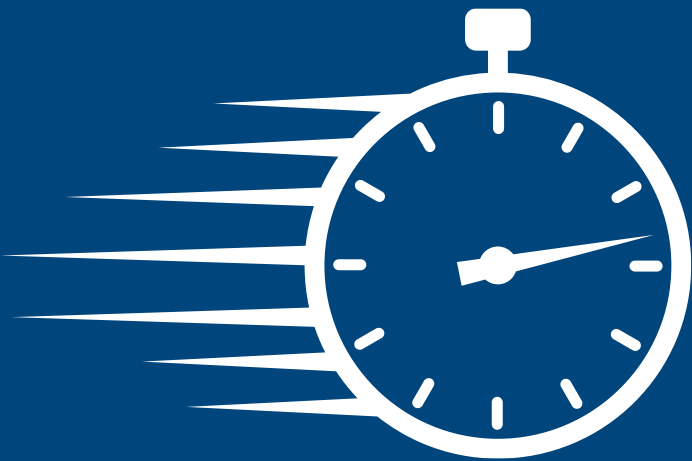


- Designated pedestrian/ bicycle/scooter amenities west of Longview
- Access for Longview residents does not change dramatically
- Cambridge/Roth intersection delays reduced
- Travel time from Longview eastbound likely increases

Service Road Option 3 - Partial One-way

Key Takeaways

For people using Longview Drive or 2727 Duke....



With Cambridge/Roth improvements, travel times do not change much with a one-way service road



One-way service road minimally impacts eastbound Duke to Longview trips (14AM & 20PM)



A partial one-way service road doesn't reduce travel time much more than a fully one-way street

WEST TAYLOR RUN

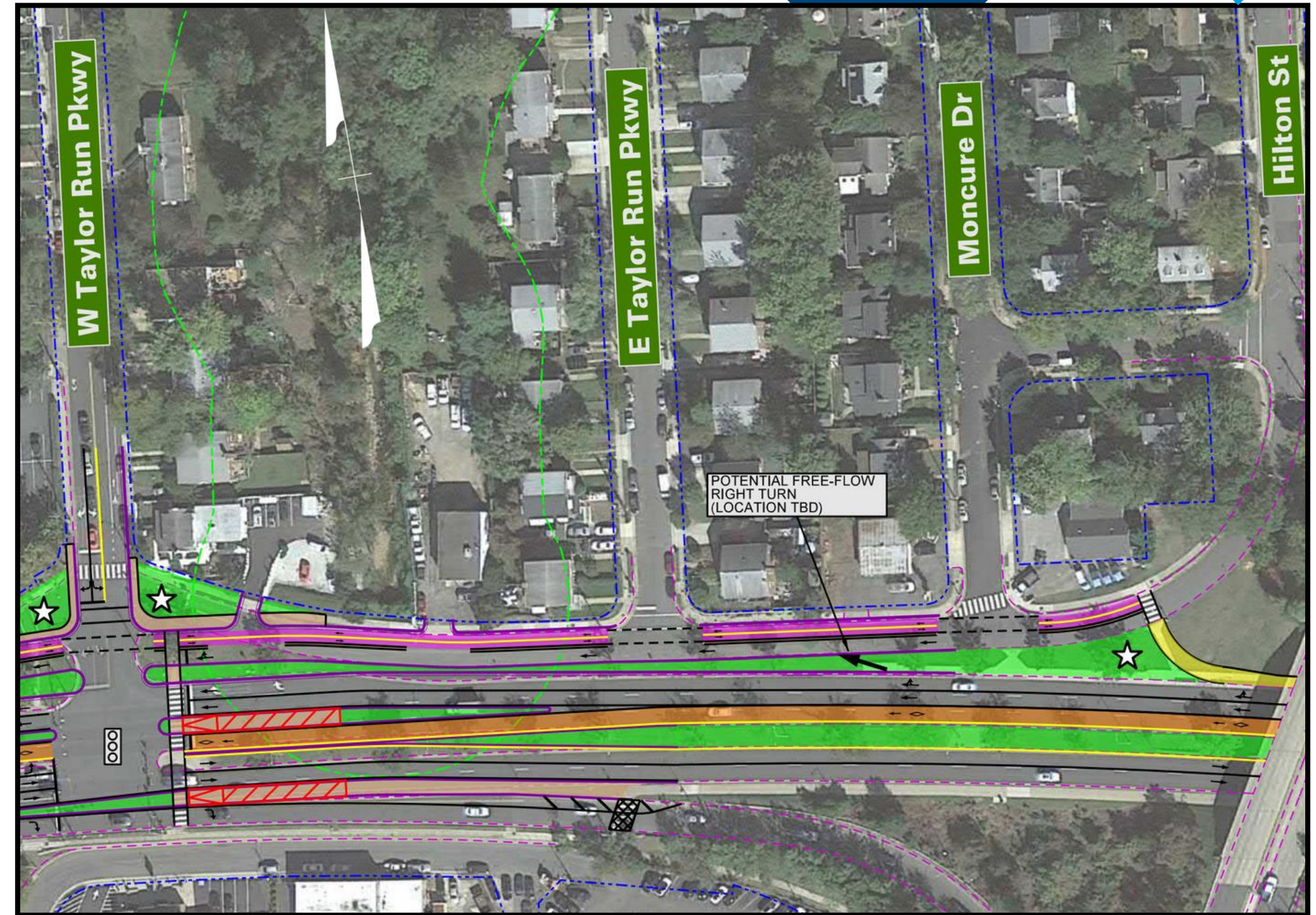
Staff has developed alternatives for the **service road and right turn location**.

The following elements are still being continued:

- Permanent access closure from West Taylor Run Parkway to Telegraph
- Improved pedestrian access between new Telegraph Road access point (compact intersection)

Alternatives for West Taylor Run service road and right-turn location are posted online at:

<https://www.alexandriava.gov/transportation-planning/duke-street-and-west-taylor-run-project>



More detailed information will be posted end of **November** and a public meeting will be held in **December 7th** at Bishop Ireton

Next Steps

Fall
2023

Community
Discussions &
Feedback on
service road
design

Narrow down
options

December

Community
meeting 12/7

Analysis of
feedback

Preferred
Option

Winter
2024

City Council
update

Recommendation
to Traffic &
Parking Board

Move into Design
Phase

2024-
2026

Continue
community and
Council updates

CONTACT AND PROJECT INFORMATION

DUKE STREET IN MOTION BUS RAPID TRANSIT



703.746.4017

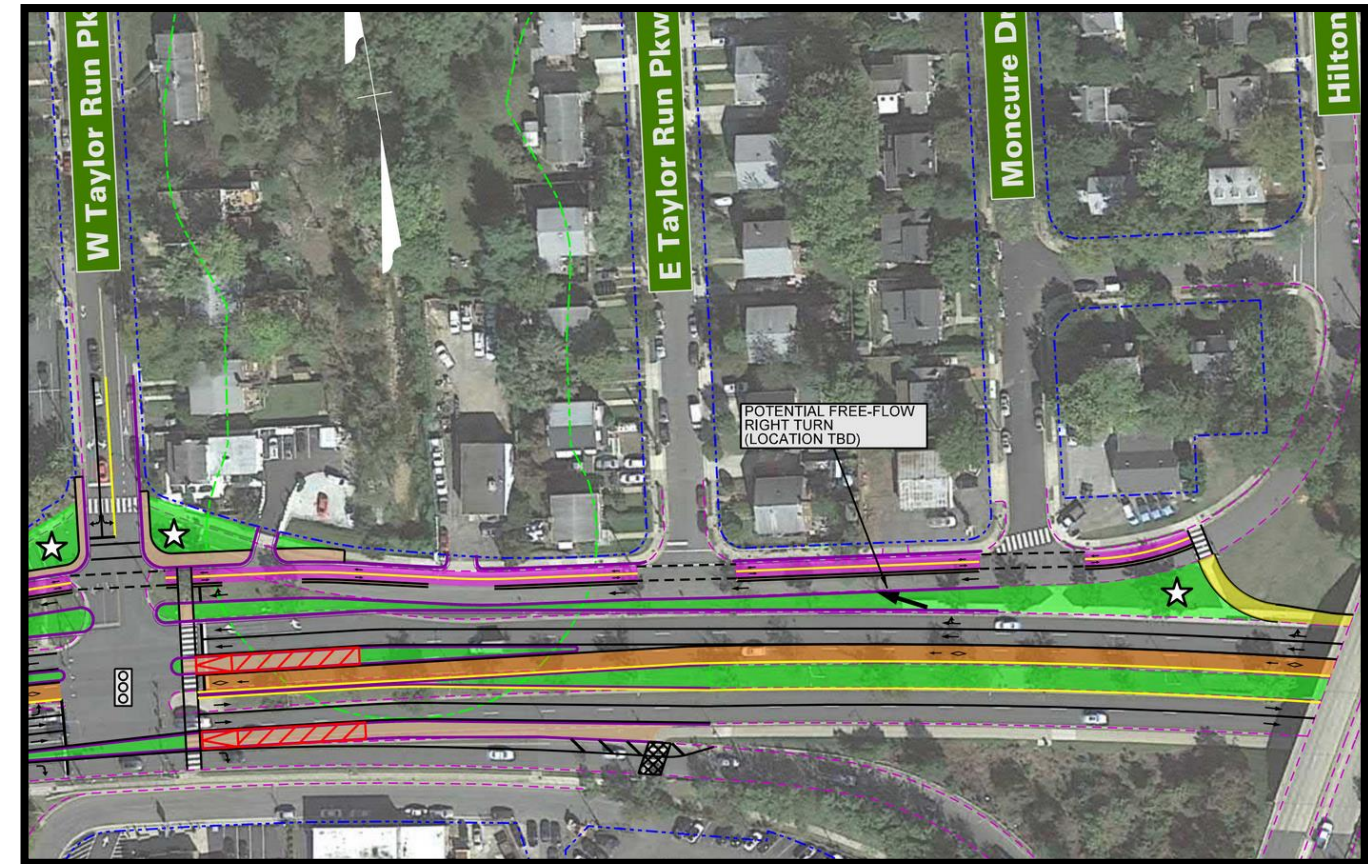


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<https://www.alexandriava.gov/DukeInMotion>

WEST TAYLOR RUN IMPROVEMENT PROJECT



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<https://www.alexandriava.gov/transportation-planning/duke-street-and-west-taylor-run-project>