

City of Alexandria, Virginia

Traffic and Parking Board

DATE: May 20, 2024

DOCKET ITEM: 6

ISSUE: Traffic and Signal Changes - Duke Street and West Taylor Run Parkway Service Road and Duke Street and Telegraph Road Access Ramp

REQUESTED BY: T&ES Staff

LOCATION: Duke Street and West Taylor Run Parkway Service Road and Duke Street and Telegraph Road access ramp

STAFF RECOMMENDATION: That the Board recommend the Director of T&ES:

- Relocate the right-turn lane to east of East Taylor Run Parkway on the Duke Street Service Road
- Install a new left-turn lane from eastbound Duke Street to Telegraph Road southbound
- Install a traffic signal at the new eastbound left-turn lane with Telegraph Road ramp

BACKGROUND: The intersection of Duke Street and West Taylor Run Parkway is located near Telegraph Road ramp. It is located near the Taylor Run Civic Association and Clover College Park Citizens Association. West Taylor Run Parkway is major connection for the neighborhoods but is also a cut-through route for traffic traveling through the City. The intersection has numerous safety issues for all users and has been identified in the City's [Vision Zero High Crash locations](#).

As a result of these issues, City staff engaged with the community to develop solutions. Between 2016 and 2018, staff worked with residents as part of the Central Alexandria Traffic Study to mitigate increased traffic, speeding and safety concerns in their neighborhoods. As part of that process, it was recommended to redesign the intersection at Duke Street and West Taylor Run Parkway. The recommendations and Traffic and Parking Board approval can be found in Attachment 2.

As a result of the recommendation from the community, staff applied for a grant to fund the full recommendation for West Taylor Run Parkway along with the new access at Telegraph Road. The grant was awarded in 2018 by the Virginia Department of Transportation (VDOT). In addition, staff advanced some changes to improve the location. The City developed the Duke Street Traffic Mitigation Pilots in 2022 to evaluating interim options to mitigate cut-through and improve Duke Street. The Pilots included multiple outreach opportunities as well as data to help inform the upcoming project at the intersection. A summary of the pilots can be found at

<https://www.alexandriava.gov/transportation-planning/duke-street-traffic-mitigation-pilots>. The results of the pilots informed this project, which included the permanent closure of access to Telegraph Road from West Taylor Run Parkway. During the mitigation pilot and grant application, the City set goals with the community that the pilot and capital project would be focused on improving safety for all, reducing cut-through traffic on neighborhood streets, reduce congestion on Duke Street, and improving resident quality of life.

In 2021, the City launched the Duke Street in Motion project to understand the community's vision for Duke Street and develop concept designs for the Duke Street Transitway. Through that process, this part of the corridor was also discussed. Staff engaged with the community on Taylor Run Intersection Improvement project purpose, service road, and function of Telegraph Road with Duke Street.

DISCUSSION: Staff began working on the Duke Street and West Taylor Run Parkway intersection capital project in August 2022 when the money became available from VDOT. Although concepts were shared back in 2018, the project team focused on re-engaging with the community on the project goals and recommendations. This included the permanent access closure from West Taylor Run Parkway to Telegraph, service road improvements, location of the right-turn lane onto West Taylor Run Parkway, improved pedestrian access between eastbound Duke Street travel lanes and the Ramp, relocation of the bus stops to the intersection, and a new Telegraph Road access point. Initial outreach in [Fall and Winter of 2022](#) focused on the right-turn location and the intersection options at the new Telegraph Road access point with Duke Street westbound. Outreach occurred in tandem with the Duke Street in Motion project, which is funded separately, but highly intertwined with the intersection project.

Initial feedback from the 2022 community outreach led staff in [April 2023](#) to recommend the right-turn location east of East Taylor Run Parkway and a compact design at Telegraph Road. Staff introduced the concept of service road options that were being explored as part of the Duke Street in Motion project. Feedback from the community was negative on the right-turn location and service, but there was support for the [compact intersection](#) and other elements of the West Taylor Run Parkway intersection. As a result, staff worked between Winter 2022 and Summer 2023 to reevaluate the right-turn location and the function of the service road. This included additional reviews of designs to determine constraints, costs, and impacts, as well as data to understand driver behavior trends. Staff developed four alternatives which can be found in attachment 3:

1. Right-turn lane located east of East Taylor Run Parkway with a two-way service road
2. Right-turn lane located east of East Taylor Run Parkway with a one-way service road and cycle facility
3. Short right-turn lane located east of Moncure Drive with a one-way service road and cycle facility
4. A service road with a full right-turn lane west of East Taylor Run and a small slip in east of Moncure Drive. The facility would be one-way with mixed traffic

During the fall and winter of 2023 staff worked directly with the Taylor Run Citizens Association (TRCA) leadership on these alternatives for the right-turn lane and service road. A

modification to option 3 was proposed by TRCA that was included in the upcoming feedback. It was conveyed by TRCA that access and cut-through traffic was a major concern that needed to be mitigated. Follow up correspondence occurred with TRCA leadership and nearby associations such as Longview and Clover College Park Civic Association on the alternatives. In [December 2023](#), staff presented the alternatives to the larger community with a feedback form. Based on over 400 responses, community correspondence and meetings, the results of that effort resulted in most supporting option 1 or option 2. However, based on both feedback from TRCA and analysis of the submitter's location, option 1 was the most supported recommendation by the immediately adjacent community.

Based on the community feedback and project goals, staff recommends:

- Permanently closing access from West Taylor Run Parkway to Telegraph Road
- Bus stop improvements
- Mobility and sidewalk improvements in the signal infrastructure and the construction of a sidewalk between the eastbound Duke Street lanes and Telegraph Road ramp
- Installing the eastbound left-turn lane at the new Telegraph Road access point with Duke Street westbound
- Install the right-turn lane located east of East Taylor Run Parkway with a two-way service road (Option 1).

In addition to subsequent comments from TRCA and feedback, the staff preferred recommendation will also be updated to include:

- Retaining the curb radius between the service road and Duke Street so that a vehicle could make a U-turn towards Moncure Drive. Note that a right-turn lane will not be provided and drivers will be using a shared right-turn lane.
 - The service road and Duke Street will be on concurrent phasing to discourage drivers abusing this access.
- Evaluation of a right-turn restrictions three months after project close-out on East Taylor Run Parkway. Staff will recommend a right-turn restriction should a 30% total increase from baseline traffic conditions occur between pre and post project AND community support from the TRCA leadership at that time.
 - TRCA leadership has requested a right-turn restriction as part of this project
 - 30% total increase from baseline traffic conditions is consistent but less than 10% of what the state considers cut-through traffic.
- Additional traffic calming measures to mitigate speeding concerns on East Taylor Run Parkway to Janney's Lane, separate from the right-turn restriction.

The staff recommendation is based on balancing needs for the community and the project goals to improve safety for all, reduce cut-through traffic, keep Duke Street moving and improving quality of life for residents. Attachment4 shows the staff recommendation.

OUTREACH: The concept designs were developed largely based on past community input received through emails, calls, letters, feedback forms, neighborhood meetings and Alex311. A summary of the community outreach can be found in Attachment 6.

Notable meetings and feedback :Opportunities

- November 11-15, 2022 West Taylor Run Project Overview
 - Attended Duke Street in Motion Project Meeting with Boards
- March 29, 2023 Pilot Phase II Recommendation & Discussion on West Taylor Run Project
- April 17, 2023 Staff Presentation on West Taylor Run Intersection Project
- December 14, 2023 Staff Presentation on West Taylor Run Intersection Project Right-turn Locations and Service Road

Staff will notify community associations, in particular TRCA, of the final recommendations. Staff will continue to reach out during the design and constructions phases for updates and notable dates.

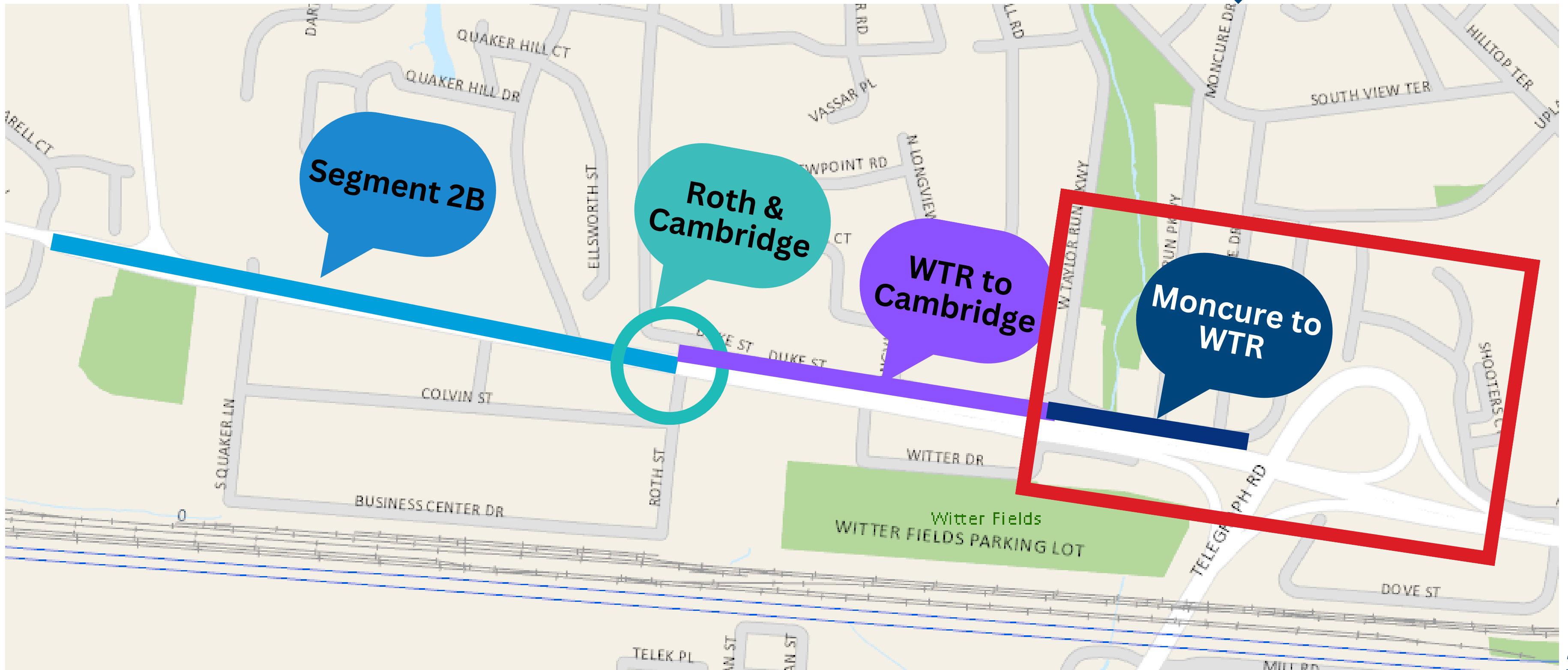


Duke Street and West Taylor Run Intersection Project

Traffic & Parking Board

May 20, 2024

Project Location



DUKE STREET TIMELINE

2017
Central
Alexandria
Traffic Study

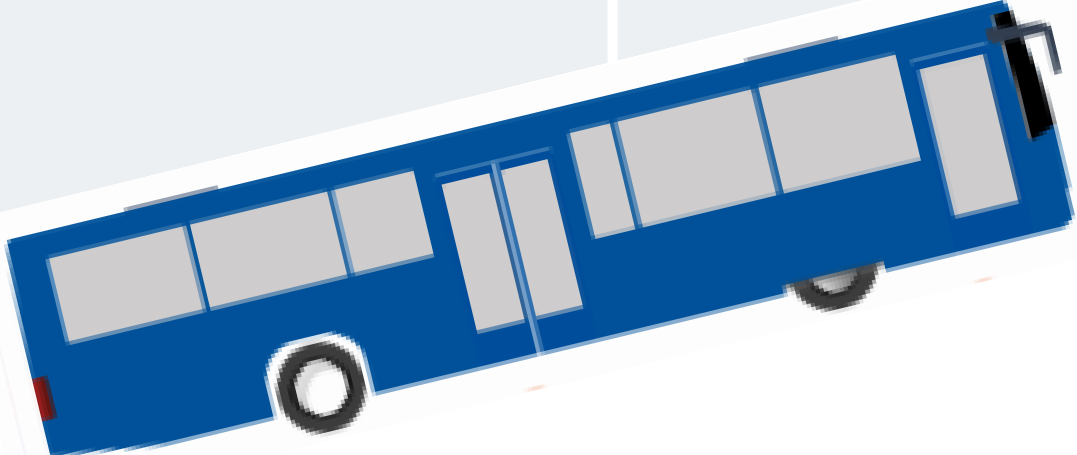
2018
Duke Street &
West Taylor
Run Funding
Request

2018 &
2020
Duke Street
Transitway
funded

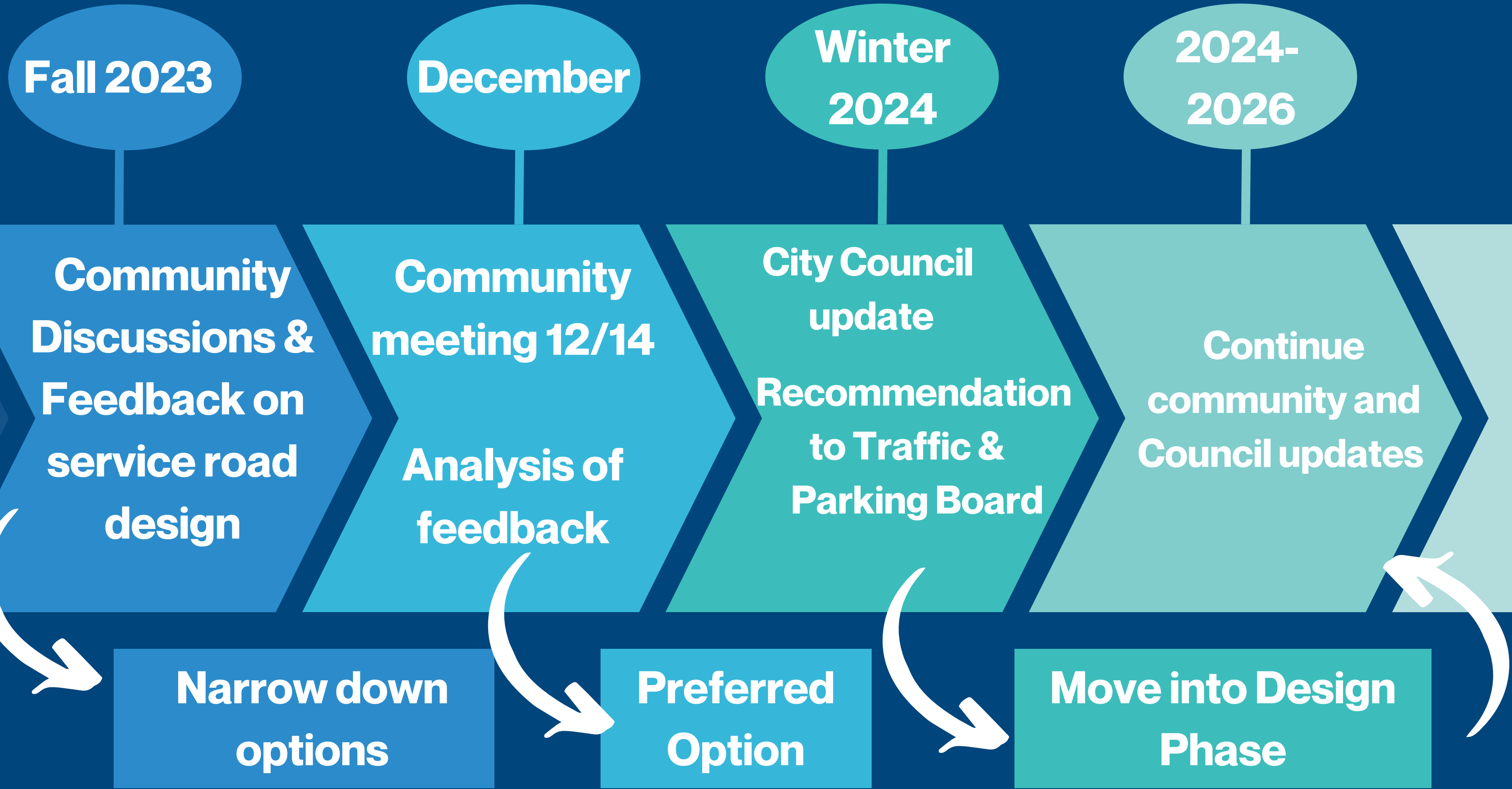
2021
Duke Street
Community
Visioning

2022
Traffic
Mitigation
Pilots

2023
Council
approval of
Transitway
concept &
Service Road
discussions



Project Schedule Continued



Community Engagement Summary

September 2023- Present

- 3 Civic Association/HOA Meetings
- 1 in-person Community Meeting with 75 attendees
- 400+ responses to online feedback form
- 4 Meetings with Community Leaders
- 3 Written Updates (City Council & Community Newsletters)
- 6 Board & Commission Staff Updates
- 2 City Council Oral Updates
- Numerous phone & email conversations with residents

Duke at West Taylor Run Intersection

Project Goals

The project purpose is focused on enhancing safety and access for people who walk, drive, bike and take transit.



Improve safety for all
people at the
intersections



Reduce cut-through
traffic on
neighborhood
streets

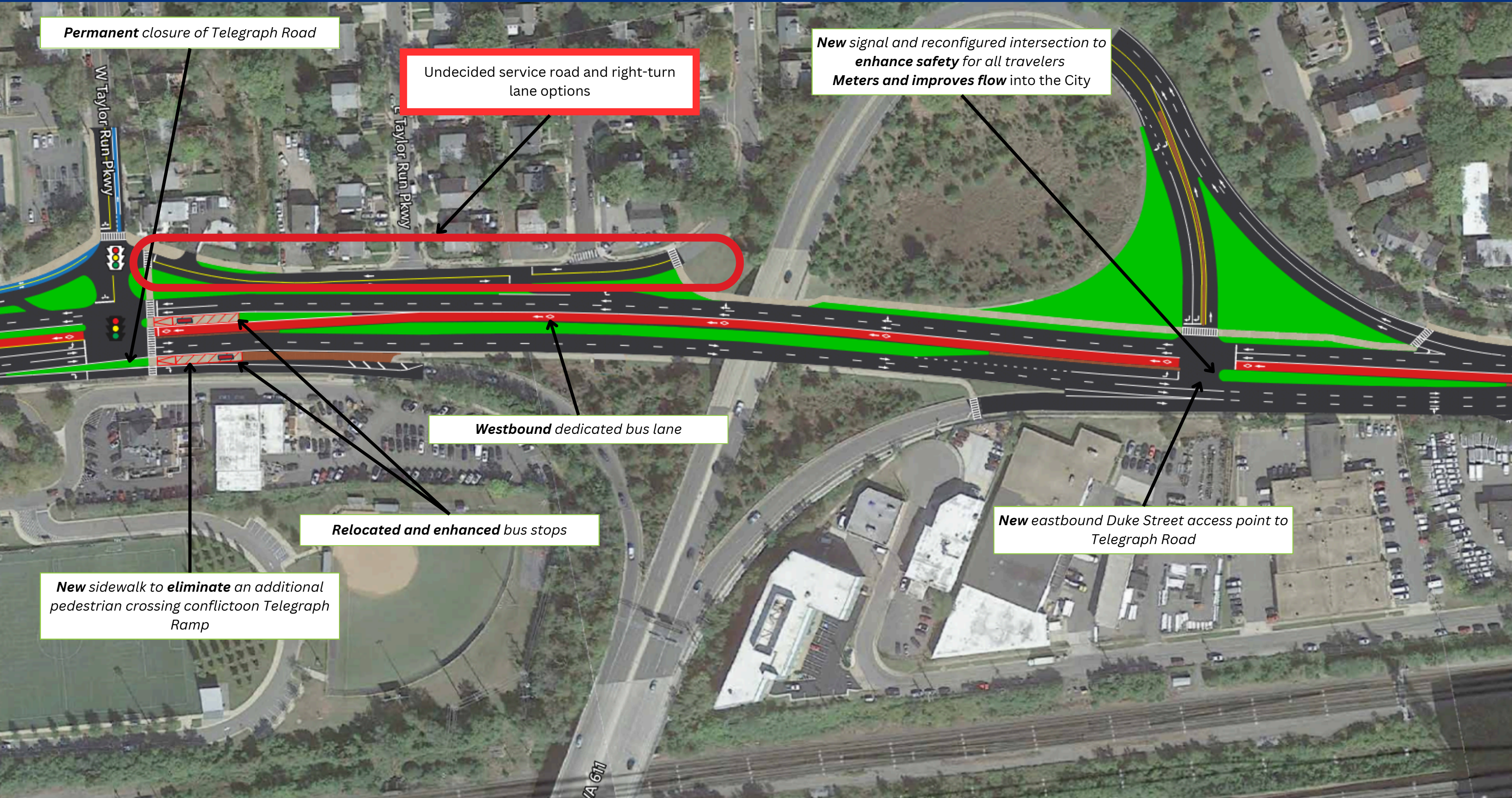


Reduce
congestion on
Duke Street



Improve the
quality of life for
residents

Proposed Plan



Permanent closure of Telegraph Road

Undecided service road and right-turn lane options

New signal and reconfigured intersection to **enhance safety** for all travelers **Meters and improves flow** into the City

Westbound dedicated bus lane

Relocated and enhanced bus stops

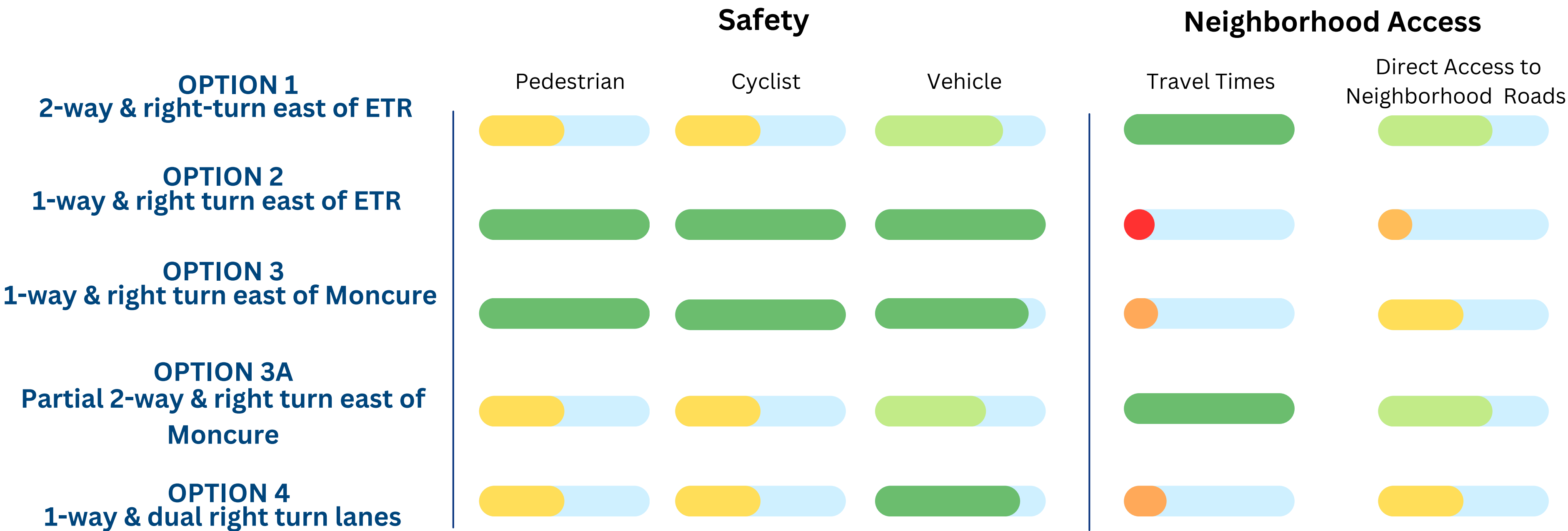
New sidewalk to **eliminate** an additional pedestrian crossing conflict on Telegraph Ramp

New eastbound Duke Street access point to Telegraph Road

I-611

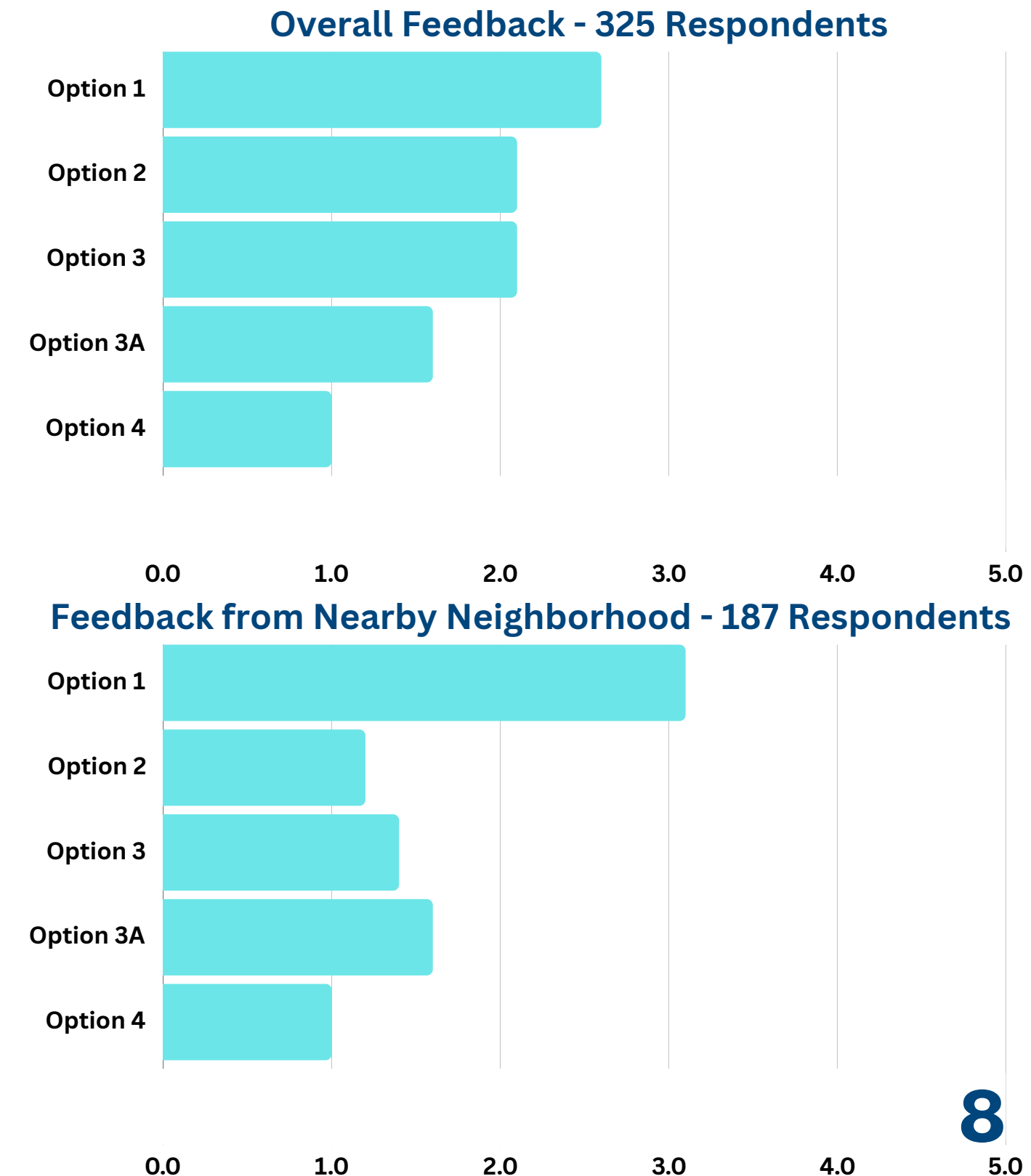
Moncure to West Taylor Run

Service Road and Right-turn Lane Comparision



Moncure to West Taylor Run Service Road

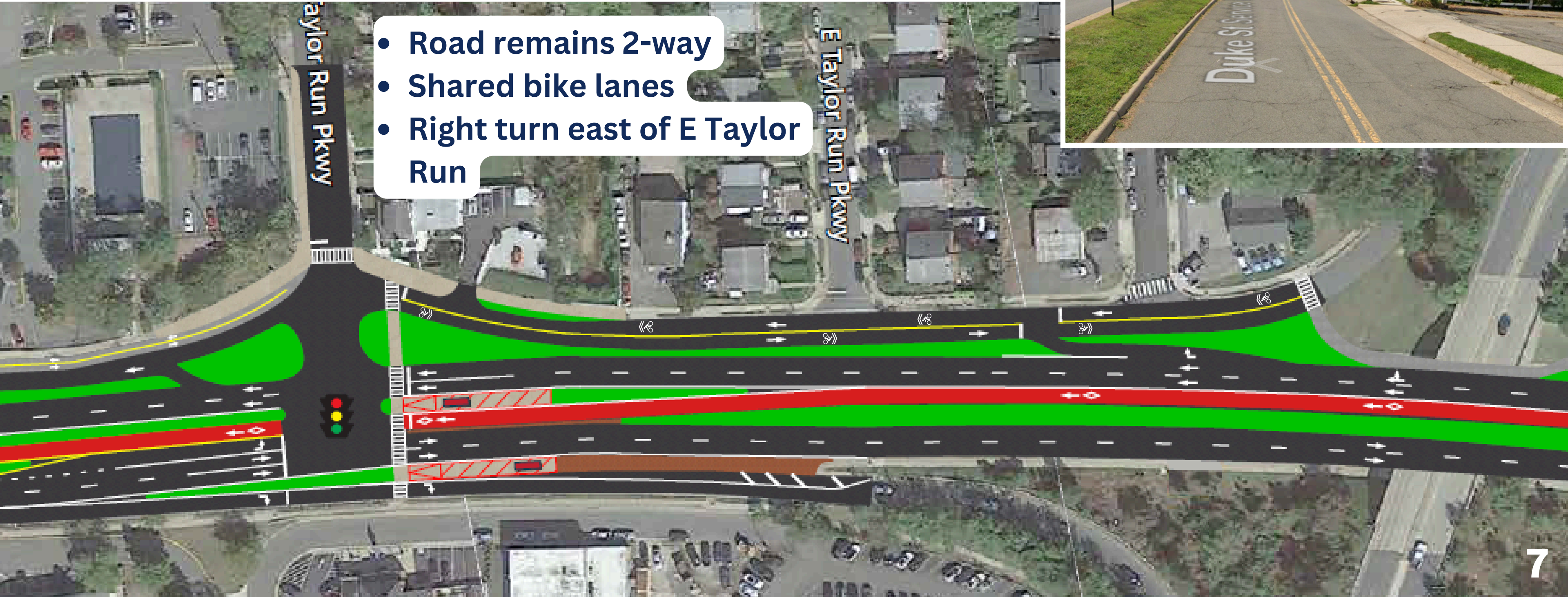
- **Recommendation: Option 1**
 - **General neighborhood support**
 - **Street remains two way**
 - **Low speed street for shared bicycle facilities**
 - **Allows u-turns to get to businesses**
 - **Works well with intersection improvements to decrease delay on Duke Street**



Moncure to West Taylor Run

Recommendation: Option #1

- Road remains 2-way
- Shared bike lanes
- Right turn east of E Taylor Run



Recommendation

That the Board recommend the Director of T&ES:

- Relocate the right-turn lane to east of East Taylor Run Parkway on the Duke Street Service Road
- Install a new left-turn lane from eastbound Duke Street to Telegraph Road southbound
- Install a traffic signal at the new eastbound left-turn lane with Telegraph Road ramp

ATTACHMENT 1: PROJECT LOCATION



**ATTACHMENT 2: TRAFFIC AND PARKING BOARD PILOT PHASE II
ENDORSEMENT**

City of Alexandria, Virginia

Traffic and Parking Board

DATE: April 24, 2023
DOCKET ITEM: #7
ISSUE: Intersection Changes – Duke Street and West Taylor Run

REQUESTED BY: T&ES Staff

LOCATION: Intersection of West Taylor Run Parkway, Duke Street and Telegraph Road ramp

STAFF RECOMMENDATION: That the Board recommend to the Director of T&ES that the Duke Street Pilot Phase II Mitigation be made permanent, restricting access from West Taylor Run Parkway to the Telegraph Road ramp.

BACKGROUND: The Duke Street Mitigation Pilots aimed to reduce regional cut-through traffic on neighborhood streets and to shift traffic to major arterials. As part of this, the pilots focused on signal times and access changes. The second phase of the pilot reinstated the signal timing changes from Phase I and restricted access to the Telegraph Road ramp directly from West Taylor Run Parkway. The goals of this phase:

- Reduce West Taylor Run Parkway traffic further than that of phase I
- Continued reduction of neighborhood cut-through traffic
- Reduce congestion on eastbound Duke Street stemming from the backup at the West Taylor Run Parkway signal

By reducing this congestion along Duke Street, using the arterials will be a preferable alternative for cut-through traffic, further reducing traffic on residential streets.

The pilot was originally slated to end on March 31, 2023 but was recommended to extend to May 31, 2023 by the Traffic and Parking Board at the request of City Staff to address data collection and civic associations input to explore the possibility of extending the pilot permanently.

City staff did collect additional data between February and March 2023 and found that all the goals were met.

DISCUSSION: Staff collected multiple traffic counts over the course of the Pilot (August 2022, October 2022, January 2023, February 2023, March 2023). Staff also used traffic counts from 2019 in order to help calculate differences of volumes. In addition to the traffic count data staff used Streetlight 2019 and 2022 sources to help calculate regional cut-through traffic. As part of the cut-through analysis (2019 versus 2023) staff found that:

- Quaker Lane volume increased by 39%
- West Taylor Run Parkway decreased by 54%
- Cambridge Road decreased by 48%
- Yale Drive decreased by 76%
- Fort Williams Parkway decreased by 47%

Based on the increase on Quaker Lane and the decreases on the neighborhood roadways cut-through traffic re-directed to Quaker Lane, all traffic cut-through goals have been met.

A notable statistic found that the Telegraph Ramp peak hour volumes met or exceeded pre-COVID volumes (2019). This is important as a probable outcome of this pilot that as access improved to get onto Telegraph Road from Duke Street due to the free-flow lane onto Telegraph Road, it's possible that regional (including local) traffic to get to Telegraph Road from other areas increased due to improved reliability and travel times on Duke Street.

The travel times and congestion goals were measured using INRIX software and qualitative field reviews. INRIX software uses data from commercial and public fleets, as well as connected vehicles to be able to determine travel times, speeds, travel time reliability, and congestion on arterial roadways, such as Duke Street. The data found that travel times on Duke Street eastbound decreased between 5% and 10% during the peak hours but remained relatively the same in the westbound direction of Duke Street. Staff noticed less stop-and-go traffic on eastbound Duke Street, especially during the peak hours. Staff also observed that pedestrian activations can cause the free-flow lane to back-up similar to before but reverts to flowing operations after a cycle or two.

Overall, the pilot successfully met the goals for pilot phase II. Staff presented the outcomes and recommendations to the public on March 29, 2022.

The West Taylor Run Parkway and Duke Street Capital Project is expected to be finalized this spring. A public meeting was held on Monday, April 17th 2023. More information about the capital project will be presented during a future traffic and parking board meeting.

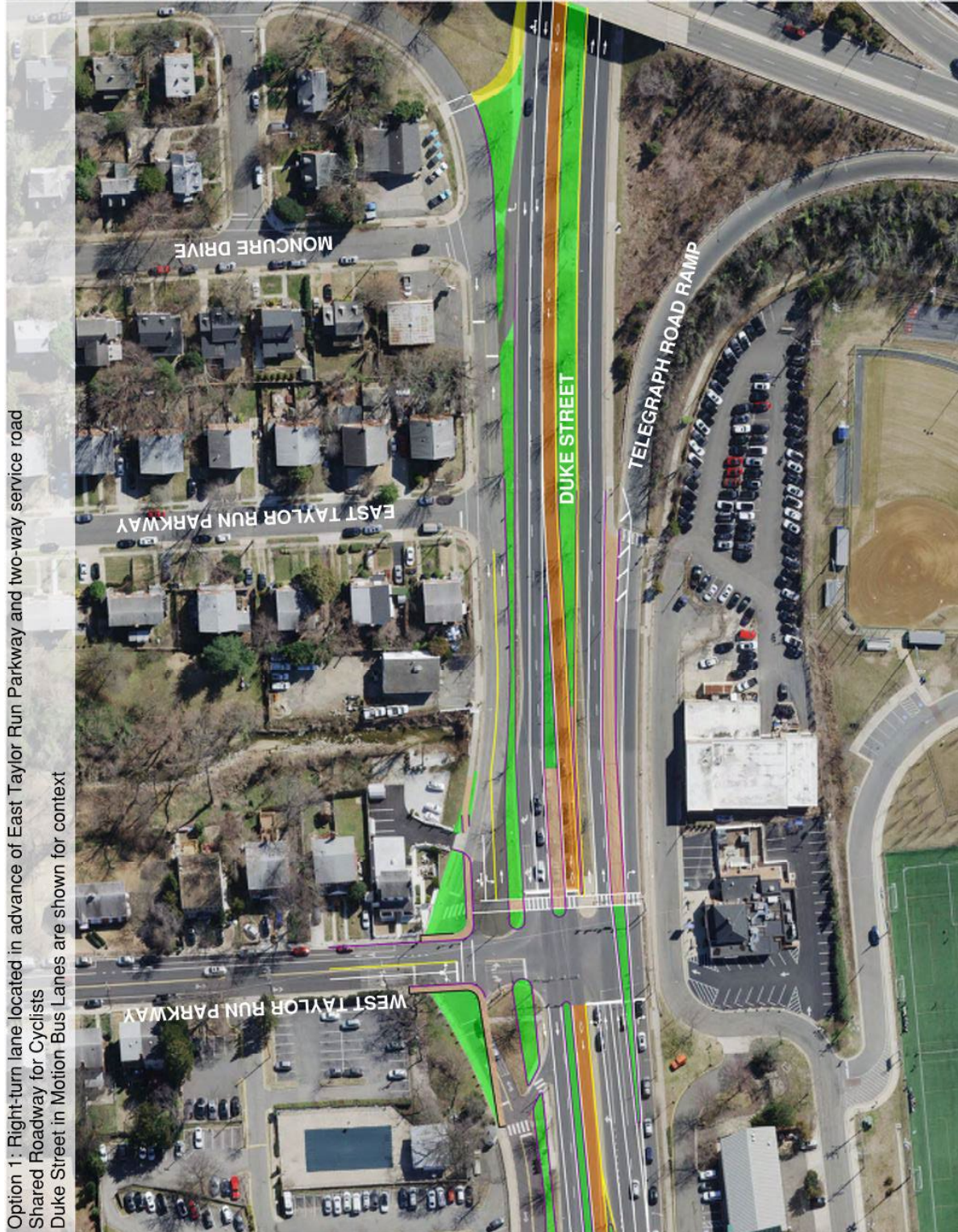
Based on the civic associations support and the supporting data, staff are recommending to extend the pilot permanently until the construction of the West Taylor Run Capital project slated for FY26-27.

OUTREACH:

- Staff met with Traffic and Parking Board on October 25th to present preliminary data about the progress of the pilot and also public input about Quaker Lane and access from the neighborhoods to Telegraph Road.
- Staff met with nearby civic associations about the progress of the pilot and questions about extending the pilot permanently on Feb 13, 2023. At this meeting we heard support from the associations to continue the pilot and feedback about concerns that were similar to the March 29th meeting. (attached civic association letter)
- Staff presented the outcomes and recommendations to the public virtually on March 29, 2022. A recording of the presentation can be found here https://alexandria.granicus.com/ViewPublisher.php?view_id=29&coa_view_id=29&coa_clip_id=5808
- Community and civic association feedback were the following:
 - AM impacts on Duke Street need to be explored
 - Congestion at Duke Street and Quaker Lane intersection
 - Access to Telegraph Road
 - Improved safety using the Dove Street access.
 - Duke Street and Cambridge Road vehicle interactions on the service roads
 - General signal operations at West Taylor Run
 - Focus on other corridors such as King Street and westbound Duke Street
- Staff acknowledges the concerns and will monitor and tweak accordingly. If the board concurs with the recommendation, staff will begin reviewing the above concerns as the pilot infrastructure will become permanent.
- Staff has informed impacted civic associations of the April 2023 Traffic and Parking Board meeting and City Staff's recommendation to make the pilot permanent.

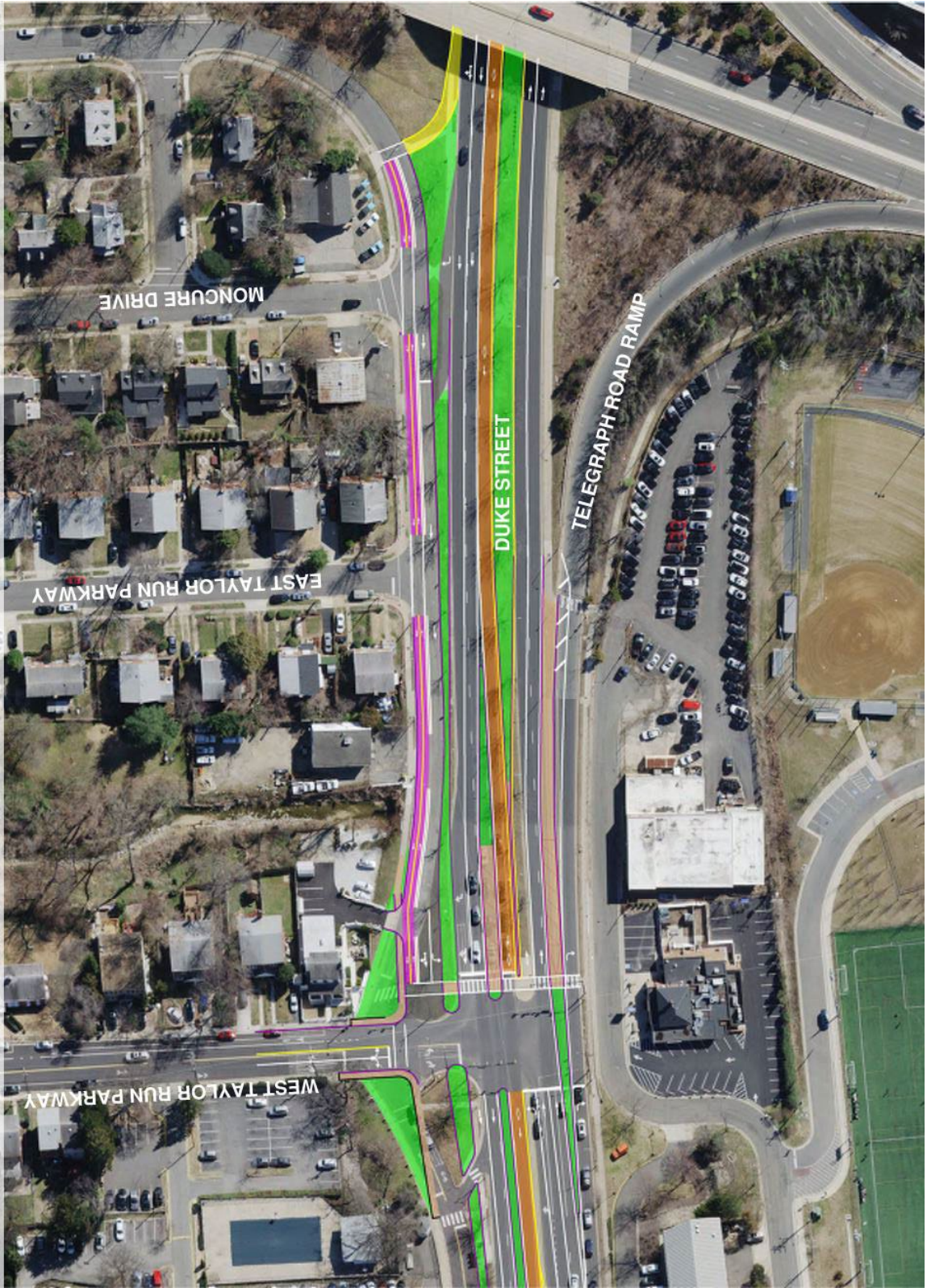
ATTACHMENT 3: CONCEPT DESIGN OPTIONS & ALTERNATIVES PERFORMANCE

OPTION ONE

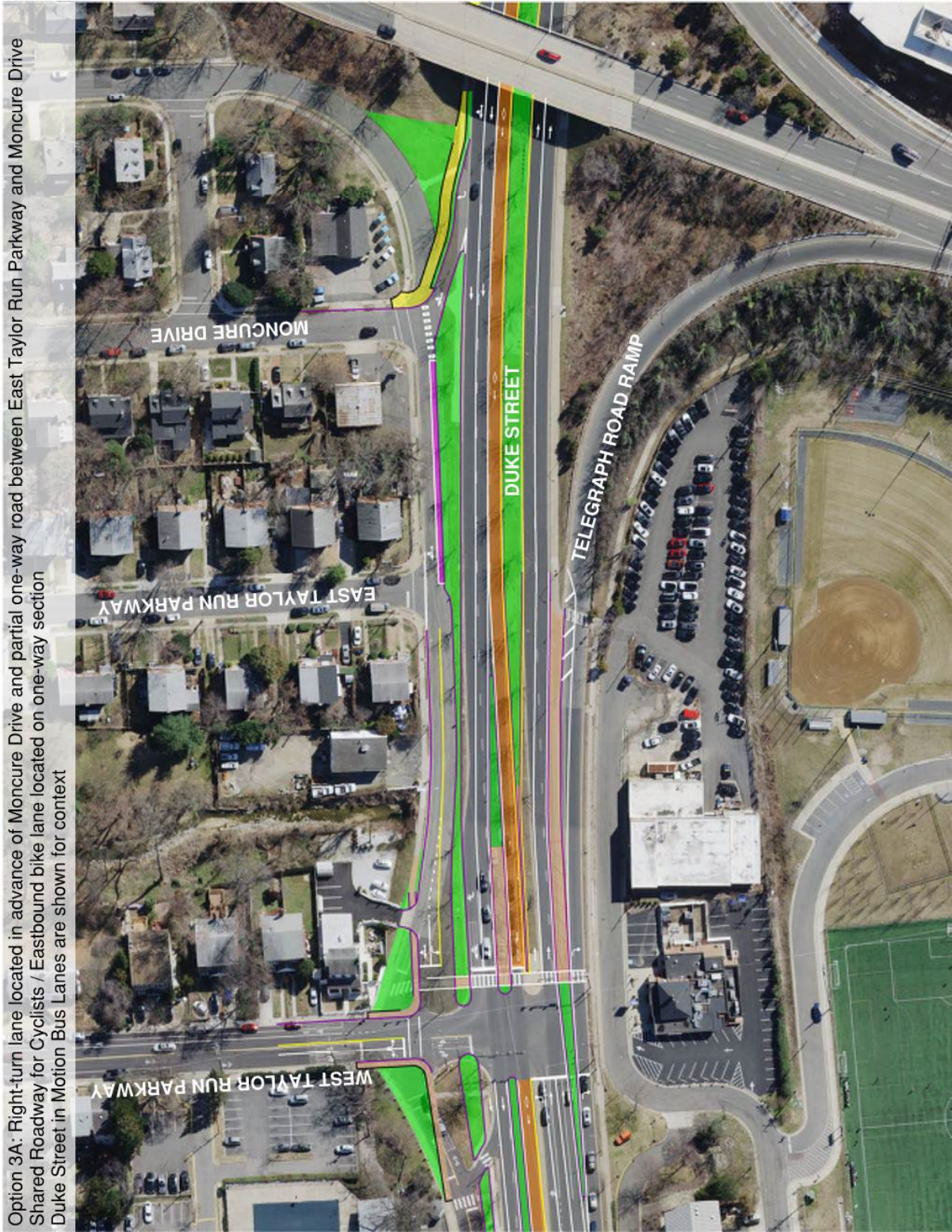


OPTION TWO

Option 2: Right-turn lane located in advance of East Taylor Run Parkway and one-way road towards West Taylor Run Parkway
Two-way Cycle-track
Duke Street in Motion Bus Lanes are shown for context

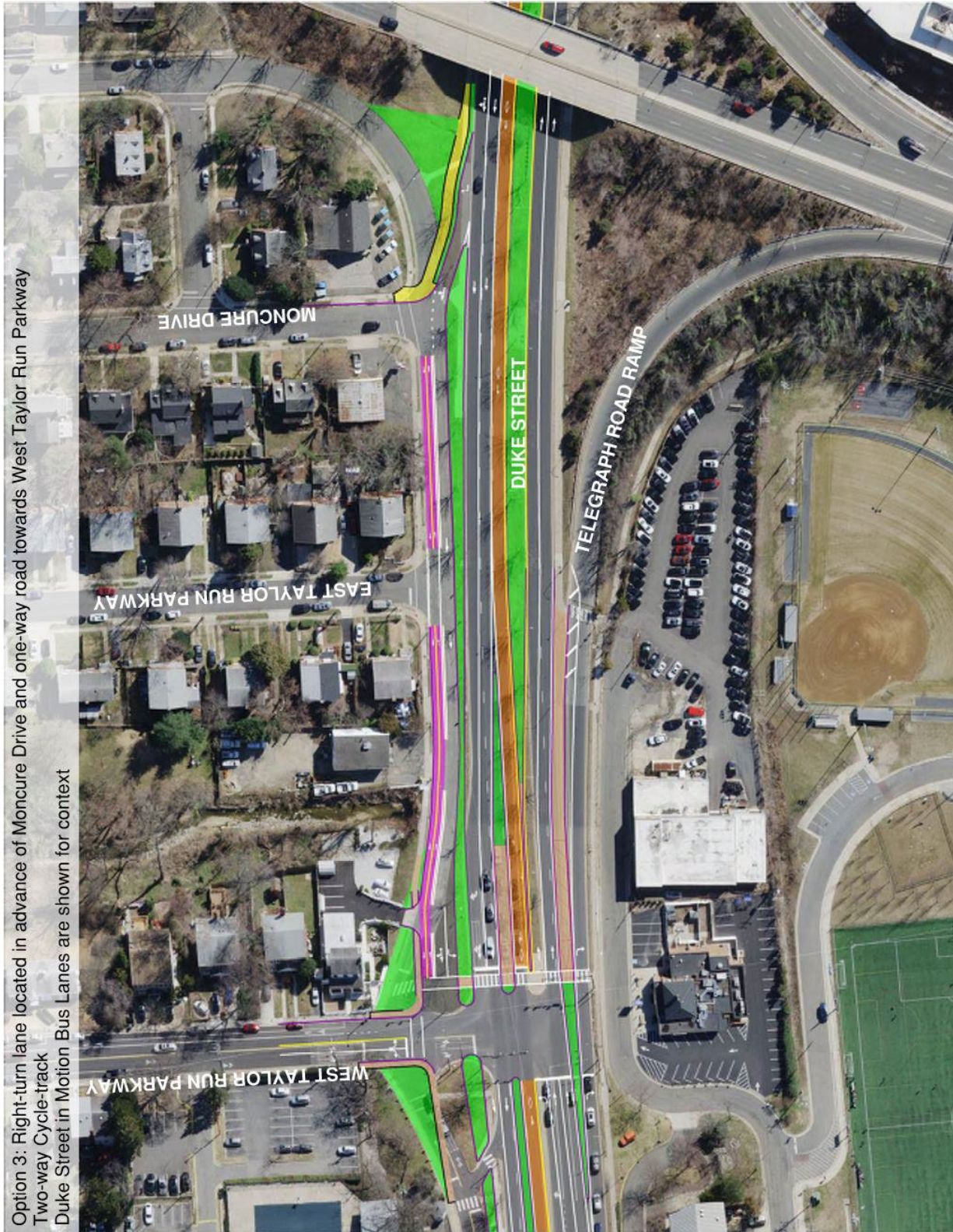


OPTION THREE A



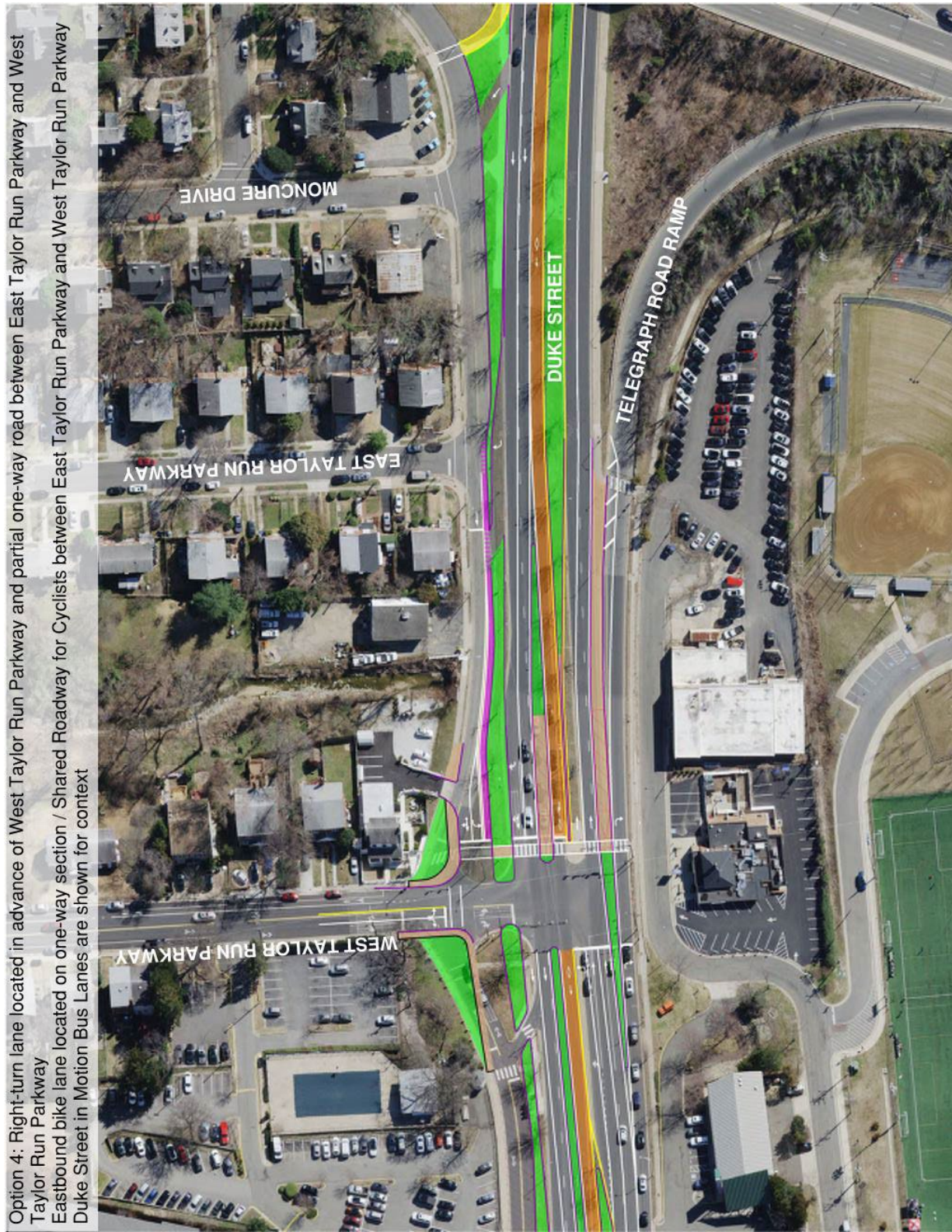
Option 3A: Right-turn lane located in advance of Moncure Drive and partial one-way road between East Taylor Run Parkway and Moncure Drive Shared Roadway for Cyclists / Eastbound bike lane located on one-way section Duke Street in Motion Bus Lanes are shown for context

OPTION THREE



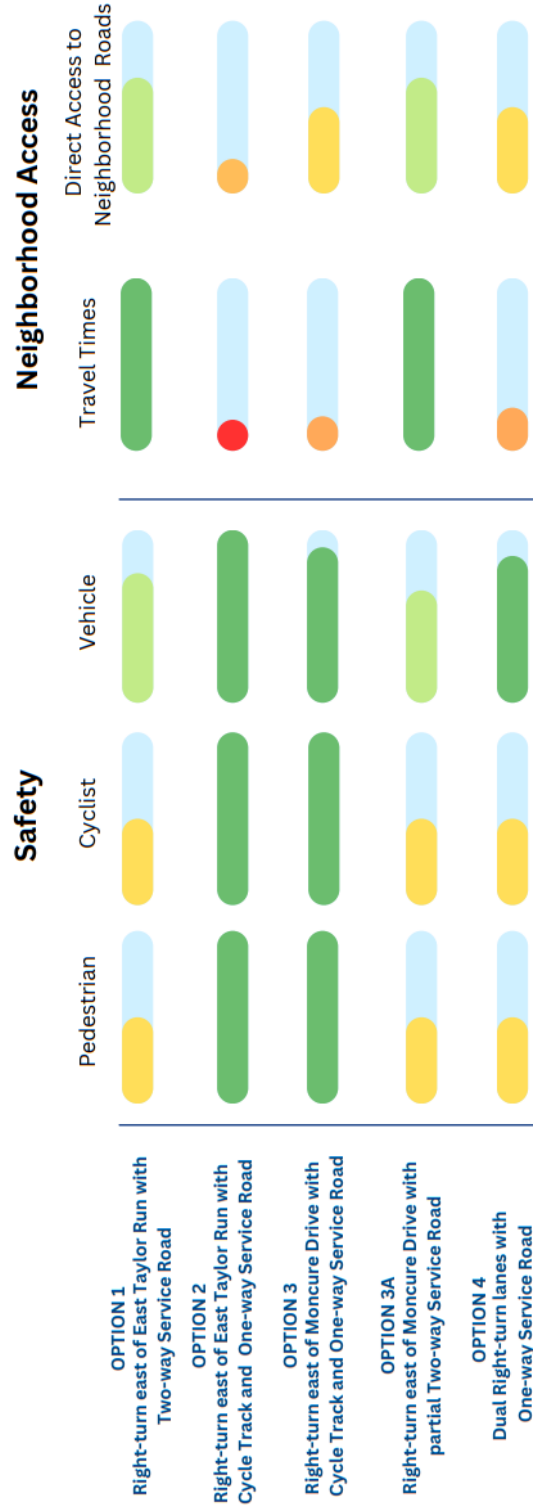
Option 3: Right-turn lane located in advance of Moncure Drive and one-way road towards West Taylor Run Parkway
Two-way Cycle-track
Duke Street in Motion Bus Lanes are shown for context

OPTION FOUR

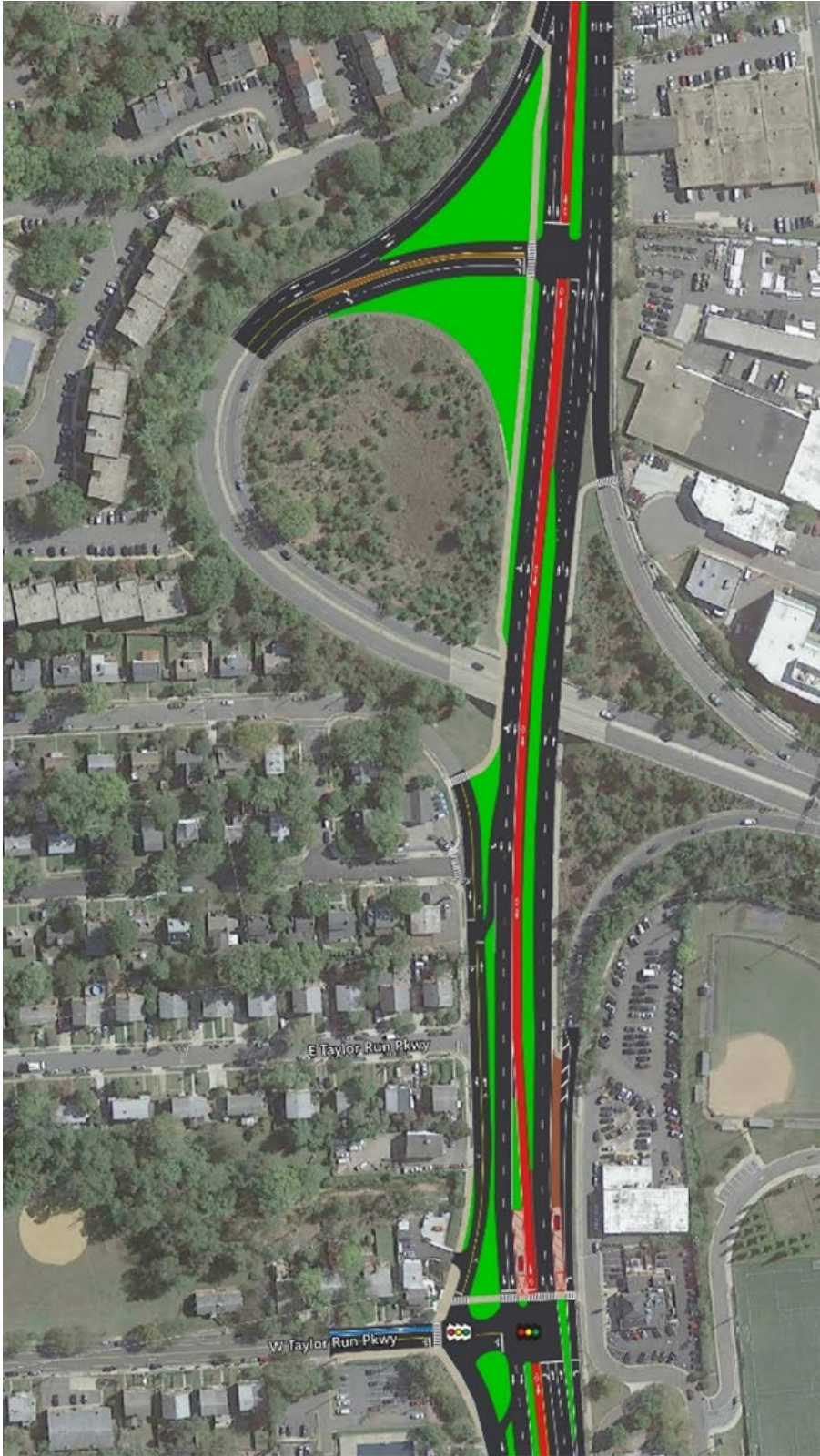


Option 4: Right-turn lane located in advance of West Taylor Run Parkway and partial one-way road between East Taylor Run Parkway and West Taylor Run Parkway
Eastbound bike lane located on one-way section / Shared Roadway for Cyclists between East Taylor Run Parkway and West Taylor Run Parkway
Duke Street in Motion Bus Lanes are shown for context

Duke at West Taylor Run Intersection Service Road and Right-turn Lane Comparison



ATTACHMENT 5: STAFF RECOMMENDATION



ATTACHMENT 6: COMMUNITY FEEDBACK SUMMARY

Community Outreach Log

Project: Duke Street and West Taylor Run Intersection Improvement Project

General Outreach

August 11, 2022 – Pilot Phase II Community Meeting. Covered Pilot Plan and Goals. Included discussion on upcoming West Taylor Run Project

November 11-15, 2022 – West Taylor Run Intersection Project overview and preliminary recommendations of intersection, potential locations of the right-turn lane, and Telegraph Road access point. [Recording](#). [Boards](#) at meeting.

March 29, 2023 – Pilot Phase II Community Meeting for Final Recommendation on Pilot. Included discussion on upcoming West Taylor Run Project

April 17, 2023 – Duke Street and West Taylor Run Intersection Improvement Meeting on staff recommendation for right-turn location, Telegraph Road access point configuration, and design update. Included discussion of how Duke Street in Motion tied into the project and the service road configurations. Result was to re-evaluate the staff recommendation for the right-turn lane and service road configurations. [Presentation](#).

December 14, 2023 – Cambridge Road and Duke Street AND West Taylor Run and Duke Street Intersection Meeting on right-turn location and service road configurations. [Presentation](#) and [recording](#) for West Taylor Run Intersection Improvement can be found here. Feedback form ran from December 14, 2023 to January 19, 2024.

Community Associations

August 10, 2022- Clover College Park Civic Association Pilot Phase II Community Meeting. Covered Pilot Plan and Goals. Included discussion on upcoming West Taylor Run Project

February 13, 2023 – Discussion with Clover College Park Civic Association, Taylor Run Civic Association, Seminary Hill Civic Association leadership on pilot results and project next steps.

May 13, 2023 (Email) – Status update to new Taylor Run Citizens Association leadership on Duke Street and West Taylor Run Intersection Improvement Project.

September 25, 2023 (Email) – Update and to schedule meeting on service road and right-turn lane with Taylor Run Citizens Association leadership

September 28, 2023 – Meeting with Taylor Run Citizens Association leadership on project purpose, status, and new alternatives on right-turn lane and service road.

October 26, 2023 (Email) – Correspondence on alternative option recommendation from Taylor Run Citizens Association leadership regarding service road and right-turn lane location.

November 9, 2023 - Staff attended Clover College Park Civic Association community meeting regarding the service road and both intersections at Cambridge Road and West Taylor Run Parkway. Presentation and answered questions regarding recommendations and alternatives.

November 29, 2023 - Staff attended Longview Residents community meeting regarding the service road and both intersections at Cambridge Road and West Taylor Run Parkway. Presentation and answered questions regarding recommendations and alternatives.

December 1, 2023 (Email) – Correspondence on upcoming winter community meeting and West Taylor Run right-turn lane and service road presentation with Taylor Run Citizens Association leadership

December 11, 2023 – Staff attended Taylor Run Citizens Association community meeting on West Taylor Run Citizens Association right-turn lane and service road. Presentation and answered questions regarding recommendations and alternatives.

December 12-15, 2023 (Email) – Correspondence with Taylor Run Citizens Association leadership on questions and comments regarding the alternatives and recommendations for the right-turn lane and recommendation.

February 7, 2024 (Call & Email) – Discussion of results with Taylor Run Citizens Association leadership and their preferred alternative for right-turn lane and service road.

Email from Taylor Run Citizens Association leadership

“Although some groups not directly affected by the WTR project are pushing Slip Lane option #2, the residents who are directly affected are split in their support of Option 1 and 3A with one board member supporting 4 and no known support for 2 or 3.

The supporters of 3A are primarily people who remember the last traffic nightmare when ETR became a cut-through despite not being designed that way. They have fear of option #1 because it feeds directly from Duke to ETR making it a cut-through again. It seems impossible to believe anyone would choose an option other than ETR. (For example: choosing WTR involves an additional right turn and potentially 2 traffic lights). If Option #1 is chosen we would need immediate traffic calming and a “no through 7-9 AM” at the least would seem mandatory during construction. A member last night expressed grave concern if we waited for some traffic level to kick in to get that sign as those things seem to take a lengthy period of time.”

March 5, 2024 (Email) – Correspondence on next steps and Taylor Run Citizens Association preferred alternative for right-turn lane and service road.

May 10, 2024 (Email & Call) - Correspondence on staff next steps for the right-turn lane and service road with Taylor Run Citizens Association leadership

Boards & Commissions:

July 25, 2022 – Traffic and Parking Board – Recommendation of permanent closure of ramp to Telegraph Road from West Taylor Run, formalize pilot phase II until construction of West Taylor Run Intersection Project. Included discussion on upcoming West Taylor Run Project

January 1, 2024 – Traffic and Parking Board – Updates on the Duke Street project at Cambridge Road Intersection, West Taylor Run Parkway Intersection, and the service roads. Also gave update on feedback received to date.

MAY/JUNE – Traffic and Parking Board – Staff to present staff recommendation on right-turn location and service road.

Individual/Alex311

Over 60 plus 311 tickets responded to regarding the West Taylor Run Project recommendations and pilot since January 2023

Correspondence with active Taylor Run Citizens Association member since October 31, 2023 regarding the right-turn lane and service roads

Correspondence with active members of the Alexandria Bicycle and Pedestrian Advisory Committee since November 7, 2023 regarding the service road

Correspondence with Caribbean Pool Service since April 2023, December 2023, and January 2024 regarding project, service road and right-turn lane location