DETAILED STUDY ALTERNATIVES CARRIED FORWARD

I-77 South Express Lanes

Mecklenburg County

STIP Project I-5718

North Carolina Department of Transportation

Division 10

MERGER CONCURRENCE POINT NUMBER 2

November 19, 2025 – 10:00 AM

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1. Introduction

The Federal Highway Administration (FHWA) is the lead federal agency for this project. Primary points of contact are included in **Table 1**.

Table 1. Primary Points of Contact

Agency	Name
Federal Highway Administration (FHWA)	Clarence Coleman
US Army Corps of Engineers (USACE)	Stephen Brumagin
North Carolina Department of Water Resources (NCDWR)	Beth Plummer
North Carolina Department of Transportation (NCDOT)	Felix Obregon
North Carolina Turnpike Authority (NCTA)	Jennifer Harris (HNTB)
RS&H	Jenny Noonkester

In accordance with NCDOT's Section 404/National Environmental Policy Act (NEPA) Merger Process, NCDOT is seeking consensus from the Section 404/NEPA Merger Team (Merger Team) on the following:

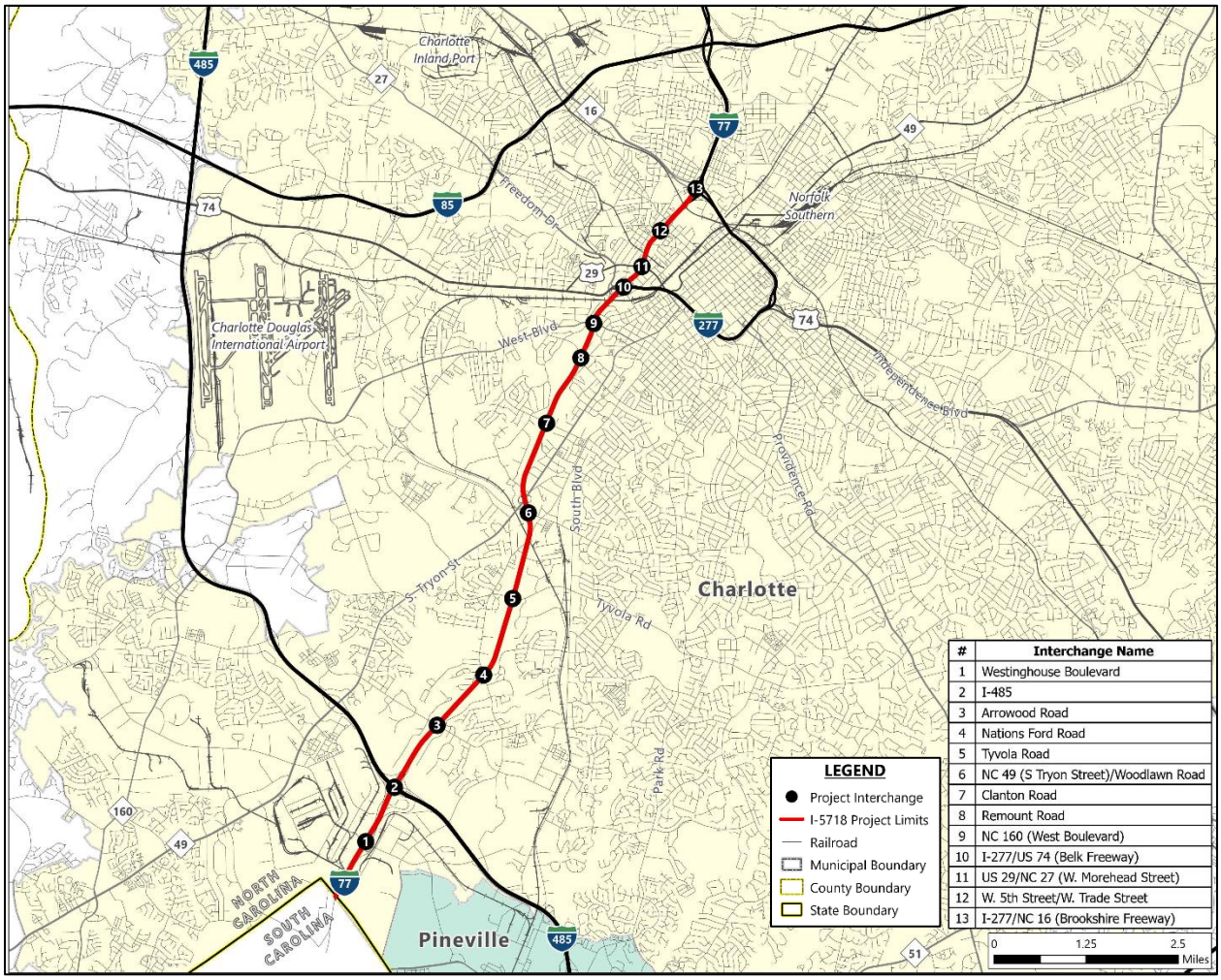
- **Concurrence Point 2 – Detailed Study Alternatives Carried Forward**

For Concurrence Point (CP) 2, this report provides a brief description of existing conditions, presents the proposed No-Build and Build Alternatives and gives a summary of potential impacts.

1.1. Project Description

The North Carolina Department of Transportation (NCDOT), in cooperation with FHWA, proposes to widen 11 miles of I-77 in Charlotte from the North Carolina/South Carolina State Line to I-277/NC 16 (Brookshire Freeway) (**Exhibit 1** – Project Limits Map). Proposed improvements include the addition of express lanes or general purpose and express lanes, reconstruction of interchanges and non-interchange bridges, and addition of access points and direct connectors to the express lanes. Cross street improvements are proposed as needed to tie into proposed improvements and provide acceptable traffic operations.

Exhibit 1. Project Limits Map



#	Interchange Name
1	Westinghouse Boulevard
2	I-485
3	Arrowood Road
4	Nations Ford Road
5	Tyvola Road
6	NC 49 (S Tryon Street)/Woodlawn Road
7	Clanton Road
8	Remount Road
9	NC 160 (West Boulevard)
10	I-277/US 74 (Belk Freeway)
11	US 29/NC 27 (W. Morehead Street)
12	W. 5th Street/W. Trade Street
13	I-277/NC 16 (Brookshire Freeway)

1.2. Cost Estimate and Merger Plan

The proposed project is included in the Charlotte Regional Transportation Planning Organization (CRTPO) *2050 Metropolitan Transportation Plan* (MTP) and *NCDOT's 2026-2035 State Transportation Improvement Program (STIP)*. The I-5718 project was previously included as Segments A and B in the *2024-2033 STIP* with Segment A from the North Carolina/South Carolina State Line to I-277/US 74 (Belk Freeway) and Segment B from I-277/US 74 (Belk Freeway) to I-277/NC 16 (Brookshire Freeway)[1]. With the adoption of the *2026-2035 STIP*, the I-5718 project is included as one segment and funded through construction[2].

[1] The 2024-2033 STIP funded Segment A for Preliminary Engineering only and Segment B was Unfunded.
[2] NCDOT 2026-2035 STIP Webpage

The project corridor is included within the NCDOT Strategic Transportation Corridor (STC) network and US Department of Transportation (USDOT) Strategic Highway Network (STRAHNET).

The costs for the project are estimated in the current STIP and shown in **Table 2**. The proposed project schedule is included in **Table 3** and is based on the I-5718 Merger Plan. The project cost estimates and milestone schedule will be updated as the design progresses.

*Table 2. 2026-2035 STIP I-5718 Cost Estimate**

Phase	Estimated Cost
Right of Way	$1,508,000,000
Utilities	$42,000,000
Construction	$2,763,315,000
Total	**$4,313,315,000**

** Estimated costs are subject to change*

Table 3. STIP Project I-5718 Schedule Milestone Targets

Milestone	Anticipated Format	Schedule*
Public Meeting	In-Person	November 2025
Concurrence Point 2	In-Person	November 2025
Concurrence Point 2A	Virtual	Spring 2026
Environmental Assessment	Electronic Distribution	March 2026
Public Hearing	In-Person	Summer 2026
Concurrence Point 3	In-Person	Fall 2026
FONSI	Electronic Distribution	December 2026
Concurrence Point 4A/4B/4B	TBD	TBD
Begin ROW Acquisition	-	TBD
Begin Construction	-	TBD

** Schedule is draft and subject to change – dates beyond CP4A will be determined based on the P3 procurement schedule.*

The current STIP includes right-of-way acquisition, utility relocation, and construction beginning in Fiscal Year (FY) 2029. The project will be delivered as a P3 (Public Private Partnership) project[3], and the construction schedule will be determined based on the procurement contract.

[3] The Draft Request for Proposals (RFP) for the P3 procurement is anticipated in March 2026 with contract award anticipated in 2027.

2. Summary of CP 1 – Project Purpose and Need

The Merger Team met on November 14, 2024, to discuss the project study area and project purpose and need for the I-5718 project. Following the meeting, the Merger Team reached a consensus and signed the formal Concurrence Point 1 Agreement (**Attachment 1**). Under this agreement, the project need, project purpose, and project study area were defined as shown in Sections 2.1, 2.2, and 2.3, respectively. Additional information is provided in the CP 1 Packet.

2.1. Identified Needs

The needs to be addressed by the proposed project are:

- Poor existing and projected traffic operations
- Lack of travel time reliability
- Inability to serve high-speed regional travel consistent with the designations and goals of federal, state, and local transportation plans

2.2. Project Purpose

The primary purpose of the proposed project is to:

- Manage congestion by providing an option for reliable travel time along I-77 from the North Carolina/South Carolina State Line to I-277/NC 16 (Brookshire Freeway)
- Implement managed lanes consistent with recommendations from the *Fast Lanes Study*[4] and *CRTPO 2050 MTP*[5]
- Improve traffic operations by increasing travel speed and increasing throughput along I-77 from the North Carolina/South Carolina State Line to I-277/NC 16 (Brookshire Freeway)

2.3. Project Study Area

The project study area includes the I-77 corridor with a 500' buffer on each side of the centerline (1,000' total width) and generally extends one-quarter mile from ramp termini intersections with a minimum width of 400' along the cross streets.

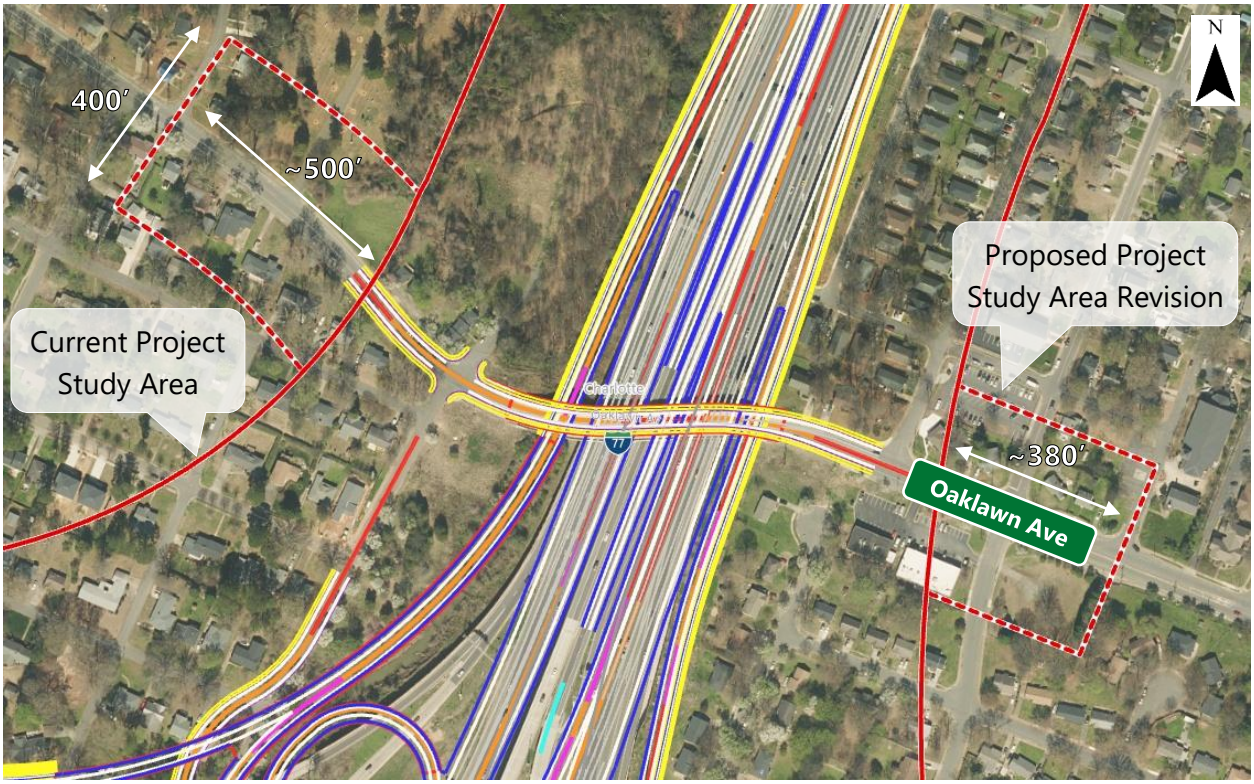
2.3.1. Proposed Study Area Revision

The project study area was set intentionally broad to allow for the full evaluation of a range of design alternatives and was further expanded as needed at complex interchanges to minimize the risk of study area revisions in the future. However, after further evaluation of options at the

[4] A 2007 study that analyzed existing and planned highways in ten counties to identify locations where High Occupancy Toll (HOT) lanes/High Occupancy Vehicle (HOV) lanes/truck-only facilities could help manage congestion (https://crtpo.org/resources/fast-lanes/)
[5] CRTPO 2050 MTP Webpage (https://crtpo.org/projects-plans-programs/metropolitan-transportation-plan/2050-mtp/)

northern end of the project, it was determined that the study area will need to be expanded along Oaklawn Avenue since the bridge carrying Oaklawn Avenue over I-77 at this location would need to be replaced. Additional length is needed to tie the new bridge back to the existing street network. The changes to the study area since CP 1 (red dashed line) are shown below in **Exhibit 2** and in the updated project study area shown on **Figure 1** (attached).

Exhibit 2. STIP Project I-5718 Proposed Study Area Revision



Note – Linework shown on inset map represents the draft alignment on the Public Meeting Maps. This exhibit is for context only and does not indicate final design plans.

NCDOT is seeking consensus from the Merger Team on this study area revision.

3. Alternatives Analysis

3.1. No-Build Alternative

The No-Build Alternative preserves the existing network (which does not include managed lanes south of Uptown Charlotte) and includes projects in the future year 2050 network based on fiscally constrained MTP projects for each MPO in the Metrolina Region. Highway projects outside of the CRTPO planning area were considered if they were included in their respective state (NC or SC) transportation improvement plan documents.

While the No-Build Alternative would result in minimal additional impacts to streams, wetlands, other natural or cultural resources, community resources or relocations within the project study area, this alternative would not make any improvements to I-77 through the project study area and would not address the existing and future traffic congestion and unreliable travel times along the corridor.

The No-Build Alternative would not provide improvements to existing and future traffic operation, improve travel time reliability, nor meet demands for high-speed regional travel required to meet the Purpose and Need of the project.

However, the No-Build alternative will be carried forward as it serves as a baseline for comparing the impacts and benefits of the alternatives carried forward for detailed study.

3.2. Build Alternatives

3.2.1. Design Criteria

The Build Alternatives were developed in coordination with NCDOT and NCTA using American Association of State Highway Transportation Officials (AASHTO) and NCDOT standards for an urban interstate with a 60-mile per hour (MPH) design speed. General purpose and express lanes are all 12' wide with northbound and southbound separated by a median barrier. Express lanes will be separated from general purpose lanes by a buffer with flexible delineators. The project corridor will remain full control of access with some changes around ramps. No bicycle or pedestrian facilities are provided along the I-77 mainline but are being included along cross streets where improvements are proposed with the project.

3.2.2. I-77 Mainline Alternatives

Mainline alternatives previously considered included three, four, or five general purpose lanes in addition to two express lanes in each direction. These options were developed from the findings of the feasibility study and focused on four main areas – traffic operations, traffic and revenue forecasts, environmental impacts, and right of way impacts. Initial concepts evaluated included:

- Mainline Concept 3+2 – *3 general purpose lanes + 2 express lanes in each direction*
- Mainline Concept 4+2 – *4 general purpose lanes + 2 express lanes in each direction*

- Mainline Concept 5+2 – *5 general purpose lanes + 2 express lanes in each direction*
- Mainline Concept 5+2 Elevated – *5 general purpose lanes + 2 elevated express lanes in each direction*

Based on stakeholder input, additional mainline concepts were reviewed at a high level to determine feasibility:

- Mainline Concept 4+1 – *4 general purpose lanes + 1 express lane in each direction*
- Mainline Concept 3+2 Elevated – *3 general purpose lanes + 2 elevated express lanes in each direction*
- Express Lanes Tunnel Concept – *2 express lanes in each direction on a tunnel under the existing highway*

Based on the preliminary screening and analysis results of the four feasibility study mainline concepts evaluated, the project team and stakeholders agreed that the 3+2 and 4+2 concepts were more feasible than the 5+2 and 5+2 Elevated concepts. The 3+2 and 4+2 mainline concepts had lower to moderate impacts, respectively, when compared to the 5+2 concept. Although the 5+2 Elevated concept had comparable impacts to the 4+2 concept, the additional construction impacts and costs, projected longer delivery schedule, and additional maintenance issues and costs associated with the elevated concept precluded its selection to be advanced for further study.

When comparing the 3+2 and 4+2 mainline concepts, the traffic and revenue potential of the 3+2 concepts provide substantial opportunities for improved funding and therefore, higher probability of being delivered sooner than the 4+2 option. In addition, the 3+2 concept has lower potential impacts compared to 4+2 or 5+2, making this the more favorable concept from a regulatory and permitting standpoint. Based on this, NCDOT and NCTA concluded to carry forward the 3+2 concept for further evaluation and interchange designs to provide total corridor cost estimates, possible/potential interchange forms and overall impacts. In addition, NCTA and NCDOT recommended to carry forward a 3+2 Elevated Option (Bi-Directional and Uni-Directional) for design, costs and impacts.

The 4+1 mainline concept would have a similar footprint resulting in similar impacts as the 3+2 concept; however, the traffic flow conditions, express lane operations, revenue potential and public perception of these options are expected to be very different. Based on evaluation of these factors, the benefits of adding two express lanes in each direction that are provided with the 3+2 option outweighs that of the benefits of adding one express lane in each direction; therefore, NCDOT and NCDOT agreed that further consideration of the 4+1 concept is not warranted.

The express lanes tunnel concept was eliminated from further consideration based on high costs, additional right of way needed for open pits and equipment staging, conflicts with buried infrastructure, high maintenance costs, longer construction time, and higher risk/uncertainty.

Additional information regarding the development of mainline options and the evaluation methodology can be found in the draft *Concept Screening Report* (October 2025), provided under separate cover.

3.2.3. Interchange Alternatives

An iterative screening process was used for the initial development of interchange concepts. The development and evaluation of interchange design concepts leading up to the functional design options is presented in the draft *Concept Screening Report* (October 2025), provided under separate cover. Interchange concepts were developed, evaluated and refined by the project team based on traffic needs and design constraints, and through extensive coordination with NCTA, NCDOT, and City of Charlotte stakeholders. Stakeholder meetings held in 2023 and 2024 presented initial interchange concepts which were evaluated and refined into the functional design options presented at stakeholder meetings from January to July 2025.

The alternatives analysis was conducted in multiple phases which initially evaluated potential impacts by interchange but were subsequently developed into the two complete alternatives (at-grade and elevated). Based on evaluation of costs and impacts, as well as coordination with NCDOT, NCTA and stakeholders, the elevated express lanes option begins at Remount Road. Interchanges south of Remount Road were evaluated independently with regard to potential impacts; however, interchanges from Remount Road and north were considered as one alternative since alternating between at-grade and elevated express lanes is not feasible.

An overview of the two full-corridor options is presented below, including reasoning for eliminating or carrying forward options considered at each interchange.

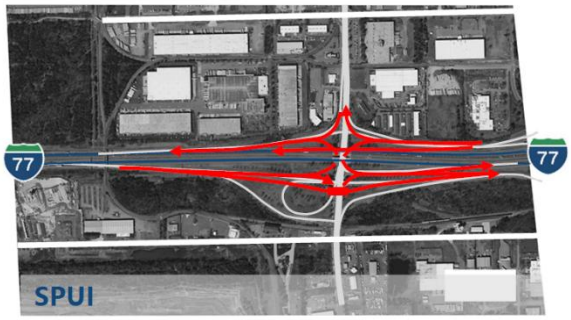
At-Grade Alternatives

An overview of at-grade design options evaluated for each interchange is provided below, including a brief discussion of why options were retained or eliminated. Due to the nature of project surroundings, impacts associated with interchanges south of Remount Road predominantly focus on streams, wetlands, relocations, and construction costs while impacts associated with interchanges north of Remount Road also include a notable presence of public recreation resources, schools, cemeteries, and historic resources.

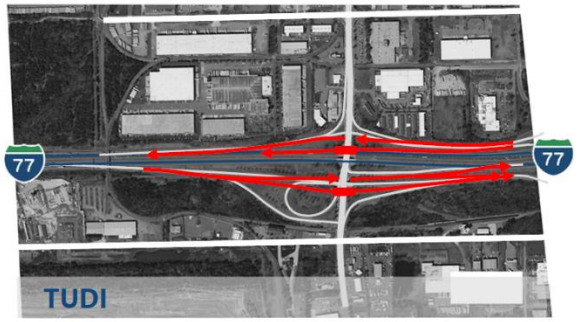
Stream and wetland impacts were calculated based on functional design slope stakes plus 25 feet along the I-77 mainline and slope stakes plus 15 feet along the Y-lines.

Westinghouse Boulevard

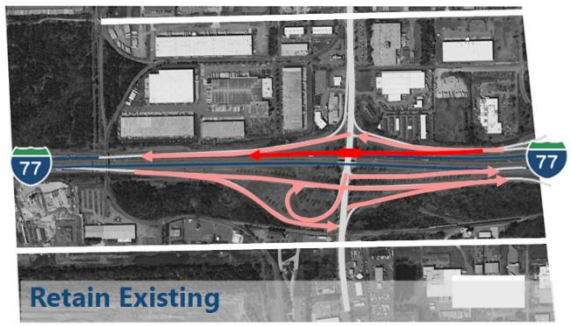
- Single Point Urban Interchange (SPUI) ***– Eliminated***



- Tight Urban Diamond Interchange (TUDI) ***– Eliminated***



- Retain Existing with express lane termini shifted to the north ***– Carried Forward***

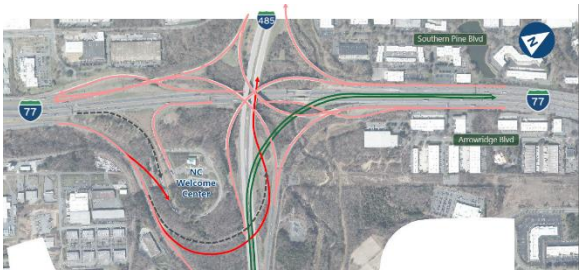


Both eliminated options (SPUI and TUDI) had higher environmental impacts, right-of-way (ROW) impacts, and construction costs while providing similar mainline traffic operations as the Retain Existing option. Wetland impacts for the SPUI and TUDI options were similar with 0.6 and 0.5 acres of wetland impacts, respectively. Stream impacts were estimated at 550 linear feet for the SPUI and 455 linear feet for the TUDI option. Both options were anticipated two require two relocations and just under 22 acres in total additional ROW.

The Retain Existing option at Westinghouse Boulevard provides similar mainline traffic operations to the SPUI and TUDI options, which is improved from the No-Build option. However, wetland impacts, stream impacts, ROW area, and construction costs are expected to be notably lower compared to the two eliminated options.

I-485

- Northeast Quadrant Direct Connectors between I-485 and I-77 express lanes ***– Carried Forward***



- Since only one option was carried forward to functional level design, no options are recommended for elimination.

The Northeast Quadrant Direct Connectors option retains the existing I-485 interchange but adds a direct connection between the express lanes on I-77 to the north and the express lanes (under construction, nearing completion) on I-485 to the east. This option provides increased throughput along I-77 and creates a reliable travel time connection between I-77 and I-485. Traffic analyses indicate this build option is able to process approximately 20% higher volumes in the AM peak and 17% higher volumes in the PM peak (compared to No-Build) and the direct connection provides a free-flow connection between express lanes on I-77 to the north and I-485 to the east.

Arrowood Road

- Diverging Diamond Interchange (DDI) ***– Eliminated***

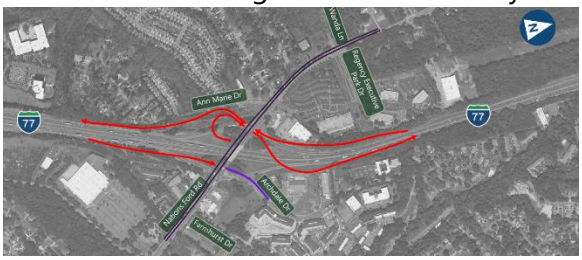
- SPUI ***– Carried Forward***

Mainline traffic operations were similar for both the DDI and SPUI options, but PM peak traffic operations were worse for interchange traffic with the DDI. Additionally, stream impacts were estimated at roughly 50 percent more for the DDI at 755 linear feet (compared to 510 linear feet for the SPUI). Additional ROW needs for the DDI were anticipated to include approximately 14.5 acres and five relocations, compared to 12.6 acres for the SPUI. Anticipated construction cost was also slightly higher for the DDI at approximately $159.2M.

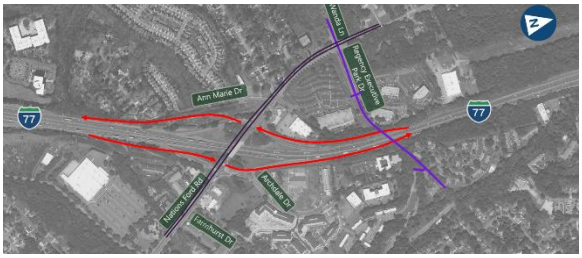
The No-Build option at this interchange results in northbound off-ramp spillback onto the I-77 mainline. The SPUI option improves throughput along the I-77 mainline and provides better interchange operations than the DDI option during the PM peak with less anticipated stream, wetland, and ROW impacts.

Nations Ford Road

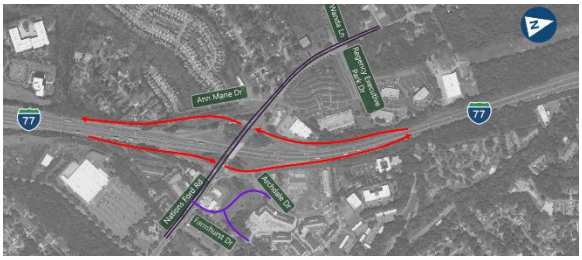
- Diamond Interchange with northwest flyover and southwest loop ***– Eliminated***



- TUDI with Archdale Drive to the West ***– Eliminated***



- TUDI with Archdale Drive to the East ***– Carried Forward***



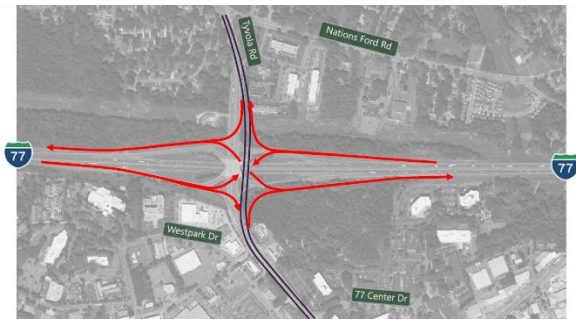
The Diamond option was eliminated because it was projected to have ramp queues impacting mainline traffic, would require the most relocations of the options considered, and it leaves Archdale Drive aligned with the I-77 northbound off ramp which is not a preferred configuration. The TUDI with Archdale to the West had the most stream impacts of all options

(350 linear feet) and impacts a church driveway and parking lot. This option also had the highest anticipated construction cost.

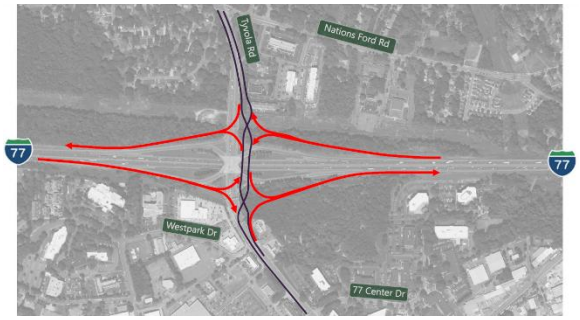
The TUDI with Archdale to the East option had similar impacts to natural resources as the Diamond alternative but fewer community impacts. Total ROW area was anticipated to be higher than the other two options at 15.1 acres, but relocations were expected to be less than the Diamond option. The TUDI with Archdale to the East option also included the fewest number of structures needing long-term maintenance and had the lowest anticipated construction cost. Overall, the TUDI with Archdale to the East option balances improvements and costs with potential impacts and improves throughput on I-77 by addressing the ramp queueing issue.

Tyvola Road

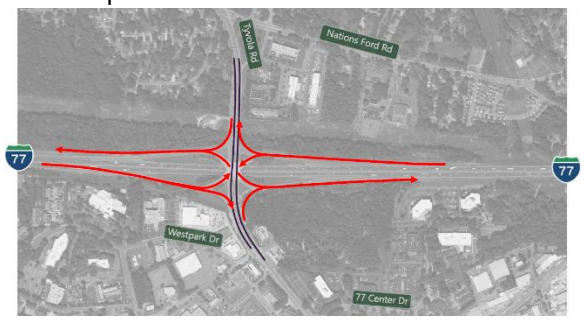
- SPUI **– *Eliminated***



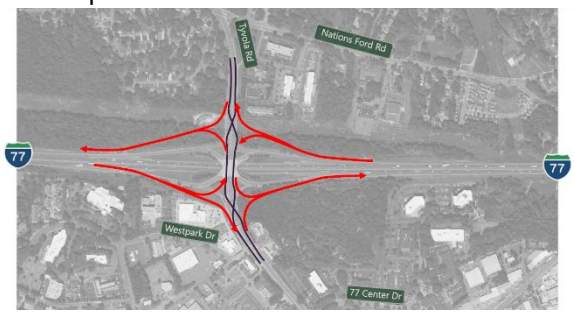
- DDI **– *Eliminated***



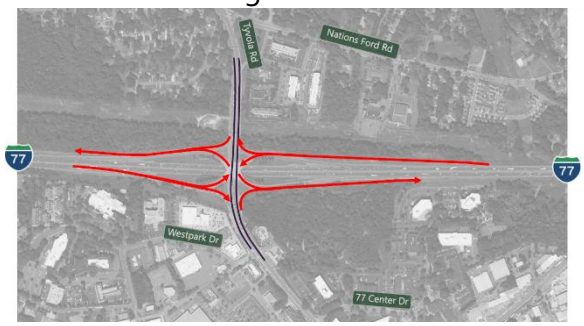
- SPUI Replace in Place **– *Eliminated***



- DDI Replace in Place ***– Eliminated***



- SPUI Retain Existing ***– Carried Forward***

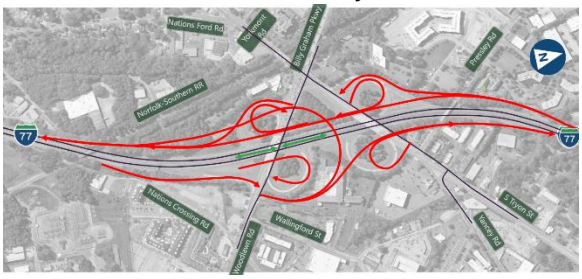


Traffic operations and improvements to both the I-77 mainline and the cross streets are comparable across all interchange options. Therefore, options were eliminated based on potential impacts in other areas. Both the SPUI and DDI options anticipated six (6) relocations each with the DDI estimated to require the most additional ROW (more than double the SPUI Retain Existing option). The DDI Replace in Place had the most stream impacts at 2,610 linear feet and the SPUI and DDI construction costs were the highest at over $150M each.

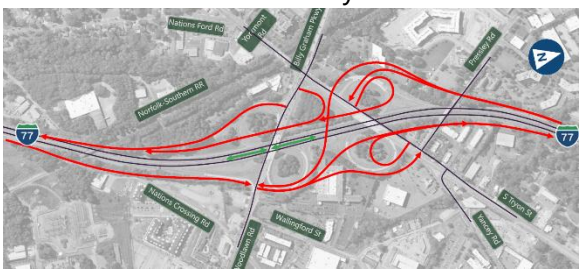
The SPUI Retain Existing at Tyvola Road would provide similar benefit as the other options, but with the fewest impacts and lowest cost. In addition, with minimal improvements needed along existing Tyvola Road, there would be less impacts to existing traffic on this major arterial.

NC 49 (S. Tryon Street)/Woodlawn Road

- Westbound-Southbound Flyover ***– Eliminated***



- Southbound-Eastbound Flyover ***– Carried Forward***

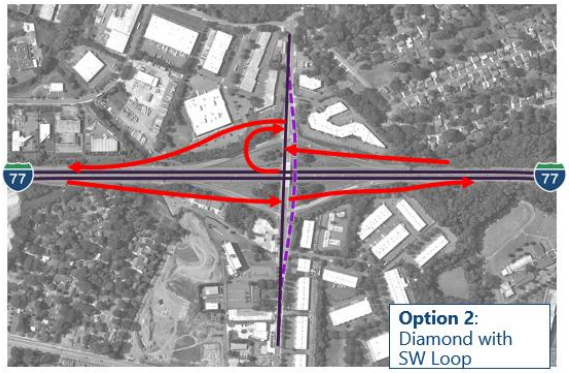


Additional signals along Woodlawn Road are the primary issue with the Westbound-Southbound Flyover option with multiple intersections along Woodlawn Road and S. Tryon Street projected to operate at LOS F in future year build conditions. This option also resulted in queues along the off-ramps spilling back onto the I-77 mainline.

The Southbound-Eastbound Flyover option supports improved traffic operations along both Woodlawn Road and S. Tryon Street and has no off-ramp queue issues. This option also has fewer stream impacts and a lower construction cost.

Clanton Road

- Diamond with Southwest Loop ***– Eliminated***



- TUDI ***– Carried Forward***

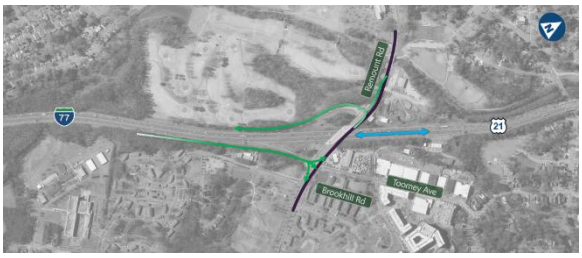
The Diamond with Southwest Loop option operates similarly to the TUDI option with similar construction cost and stream impacts. Stakeholders agreed to remove the Diamond with

Southwest Loop option from further consideration due to potential ROW impacts which were approximately 75 percent higher than the TUDI option.

The TUDI concept is able to process nearly all of the AM and PM peak period demand versus less than 80 percent for the No-Build option, and off-ramp queues are not anticipated to impact the I-77 mainline. Construction cost and stream impacts for the TUDI option were slightly greater than the Diamond with Southwest Loop option; however, the TUDI option has notably lower ROW impacts.

Remount Road

- Partial Diamond ***– Carried Forward***



Since only one option (Partial Diamond) was carried forward to functional level design, no options are recommended for elimination. The Partial Diamond option matches the existing interchange configuration with improved traffic flow along Remount Road and at ramp terminal intersections compared to No-Build conditions.

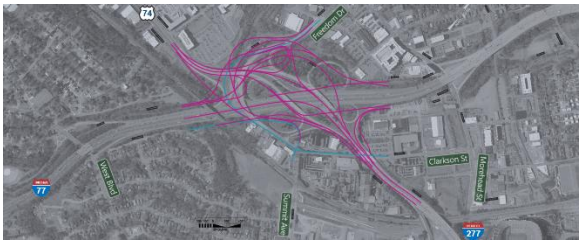
NC 160 (West Boulevard)

- Partial Diamond ***– Carried Forward***

Since only one option (Partial Diamond) was carried forward to functional level design, no options are recommended for elimination. The Partial Diamond option matches the existing interchange configuration with decreased delay along West Boulevard and at Mint Street, Tryon Street, and ramp intersections compared to No-Build conditions.

I-277/US 74 (Belk Freeway)

- Crossover ***– Eliminated***



- Turbine ***– Carried Forward***

The Crossover and Turbine options had the same anticipated impacts to wetlands and streams while the Crossover option had higher impacts to public recreation areas and higher ROW costs. One of the main considerations for this interchange was traffic operations for I-277 westbound movements that are very heavy going to I-77 southbound. Based on traffic analysis results, the Crossover option would not provide acceptable operations for I-277 westbound, but the Turbine option would provide acceptable operations for all but a short segment during peak periods. Therefore, the Turbine option was carried forward.

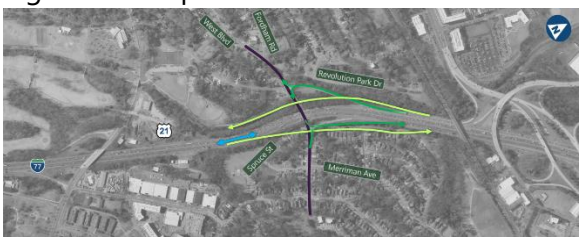
US 29/NC 27 (W. Morehead Street)

- Partial Diamond ***– Carried Forward***

Since only one option (Partial Diamond) was carried forward to functional level design, no options are recommended for elimination. The Partial Diamond option matches the existing interchange configuration with reduced delay along W. Morehead Street due to improvements at ramp terminal intersections compared to No-Build conditions.

W. 5th Street/W. Trade Street

- Tight Urban Split Diamond ***– Eliminated***



- TUDI with Northwest Loop ***– Carried Forward***

The TUDI with Northwest Loop had slightly higher stream and ROW impacts, but lower construction cost compared to the Split Diamond option. From a traffic operations perspective, the TUDI with Northwest Loop option provides access to I-277/NC 16 (Brookshire Freeway) for traffic coming from W. Morehead Street and I-277/US 73 (Belk Freeway). This movement is not provided with Split Diamond option. In addition, the TUDI with Northwest Loop would provide more developable land on the west side of the interchange, which is desirable for a current City of Charlotte Reconnecting Communities grant project.

I-277/NC 16 (Brookshire Freeway)

- Stacked with loop A ***– Carried Forward***

Since only one option (Stacked with Loop A) was carried forward to functional level design, no options are recommended for elimination.

Impacts for at-grade options are compiled in **Table 4** and **Table 5** and are separated at Remount Road where the potential shift to an elevated option could occur.

Table 4. Impacts for At-grade Build Options from Westinghouse Boulevard to Clanton Road

Interchange Alternative	Wetland Impacts (acres)	Stream Impacts (linear feet)	Full Acquisitions (parcels)	Total ROW Acquisition (acres)	Estimated Construction Cost
Westinghouse Boulevard (Retain Existing w/EL shifted north)	0.2	160	0	1.9	$87.6M
I-485 (NE Quadrant DCs)	1.9	1,320	4	10	$328.3M
Arrowood Road (SPUI)	0	510	5	12.6	$158.7M
Nations Ford Road (TUDI w/Archdale East)	0.1	100	7	15.1	$114.9M
Tyvola Road (Retain Existing SPUI)	0.1	2,395	0	10.5	$114M
NC 49 (S. Tryon Street)/ Woodlawn Road (SB-EB Flyover)	0	780	23	60.8	$330.8M
Clanton Road (TUDI)	0	740	0	2.2	$123.9M
TOTAL	**2.3**	**6,005**	**39**	**113.1**	**$1,258.2M**

Table 5. Impacts for At-grade Build Options from Remount Road to I-277/NC 16 (Brookshire Freeway)

Interchange	Wetland Impacts (acres)	Stream Impacts (linear feet)	Public Recreation (acres)	Schools	Cemetery (acres)	Historic Boundaries (acres)*	Full Acquisitions (parcels)	Total ROW Acquisition (acres)
Remount Road – Partial Diamond	0	300	1.9	0.1	0	0.2	3	5.3
NC 160 (West Boulevard) – Partial Diamond	0	3,395	3.5	0	0	0.5	55	16.9
I-277/US 74 (Belk Freeway) – Turbine	0.2	2,760	2.5	0.4	0	0.1	10	43.6
US 29/NC 27 (W. Morehead Street) – Partial Diamond	0	915	1.2	0	0	4.9	1	5.8
W. 5th Street/W. Trade Street – TUDI with northwest loop	0	1,775	5.6	0.5	0.6	0.6	6	7.9
I-277/NC 16 (Brookshire Freeway) – Stacked with Loop A	0	5,220	0.4	0	3.5	5.0	14	12.3
TOTAL	**0.2**	**14,365**	**15.1**	**1**	**4.1**	**11.3**	**89**	**91.8**

** Historic resource impacts are updated to reflect the most current information included in the I-5718 Historic Structures Survey Report (August 2025).*

Elevated Alternative

Based on evaluation of costs and impacts as well as coordination with NCDOT, NCTA, and stakeholders, the decision was made to begin the elevated express lanes option at Remount Road. This provides an option to minimize impacts to sensitive resources located adjacent to the project corridor through Uptown Charlotte. The elevated option does not have individual interchange components, but impacts are summarized by interchange segments in **Table 6** for comparison to at-grade options.

In general, the elevated express lanes begin rising up in the median just on the north side of Remount Road and then cross over the I-77 northbound lanes and run on an elevated structure along the east side of the I-77 mainline. The elevated express lanes continue on the east side of I-77 through the I-277/US 74 (Belk Freeway), W. Morehead Street, W. 5th Street, W. Trade Street, and I-277/NC 16 (Brookshire Freeway) interchanges. On the north end of the project, the elevated express lanes cross over the Oaklawn Avenue bridge and then come back down to tie into the existing express lanes on I-77 north of Uptown Charlotte. The Elevated option also includes direct connectors to/from the south and east at I-277/US 74 (Belk Freeway).

Table 6. Impacts for Elevated Build Option from Remount Road to I 277/NC 16 (Brookshire Freeway)

Interchange	Wetland Impacts (acres)	Stream Impacts (linear feet)	Public Recreation (acres)	Schools	Cemetery (acres)	Historic Boundaries (acres)*	Full Acquisitions (parcels)	Total ROW Acquisition (acres)
Remount Road	0	310	3.2	0.1	0	0.8	5	6.9
NC 160 (West Boulevard)	0	3,140	3.9	0	0	0	8	5.1
I-277/US 74 (Belk Freeway)	0	640	1.3	0	0	0	7	27.5
US 29/NC 27 (W. Morehead Street)	0	0	0.2	0	0	0.9	0	1.2
W. 5th Street/ W. Trade Street	0	25	0.7	0	<0.1	<0.1	0	0.7
I-277/NC 16 (Brookshire Freeway)	0	3,215	<0.1	0.1	0.2	1.6	38	7.2

Interchange	Wetland Impacts (acres)	Stream Impacts (linear feet)	Public Recreation (acres)	Schools	Cemetery (acres)	Historic Boundaries (acres)*	Full Acquisitions (parcels)	Total ROW Acquisition (acres)
TOTAL	**0**	**7,330**	**9.3**	**0.2**	**0.2**	**3.30**	**58**	**48.6**

** Historic resource impacts are updated to reflect the most current information included in the I-5718 Historic Structures Survey Report (August 2025).*

Impact Summary

Since both the At-grade and Elevated options utilize the same configuration south of Remount Road, the potential impacts do not vary between options (as presented in **Table 4**). A comparison of impacts for the At-grade and Elevated options from Remount Road through I-277/NC 16 (Brookshire Freeway) is presented in **Table 7**. As shown in the table, impacts for the Elevated option are notably lower for all impact categories.

Table 7. At-grade vs. Elevated Options in Uptown (Remount Road through I-277/NC 16 (Brookshire Freeway))

Option	Wetland Impacts (acres)	Stream Impacts (linear feet)	Public Recreation (acres)	Cemetery (acres)	Historic Boundaries (acres)*	Full Acquisitions (parcels)	Total ROW Acquisition (acres)	Construction Cost Estimate
At-Grade	0.2	14,365	15.1	4.1	11.3	89	91.8	$1.314B
Elevated	0	7,330	9.3	0.2	3.3	58	48.6	$1.124B

** Historic resource impacts are updated to reflect the most current information included in the I-5718 Historic Structures Survey Report (August 2025).*

In terms of mainline traffic operations, the At-grade option has slightly better speeds (~10 percent higher) in the GP lanes and approximately one percent increase in throughput. While both options have pros and cons, NCDOT/NCTA has determined that both options warrant additional consideration. The full corridor At-grade and Elevated options meet purpose and need by improving mobility and providing an option for reliable travel time. The At-grade

option would replace many aging structures while the Elevated option would reduce overall impacts and up-front costs. The Elevated option would also be less impactful during construction, but the At-grade option would provide additional community benefits by improving multi-modal facilities along cross streets.

In summary, NCDOT and NCTA are seeking concurrence on the following detailed study alternatives for evaluation in the Environmental Assessment:

- **3+2 At-Grade Alternative** – includes at-grade express lanes from Westinghouse Boulevard to I-277/NC 16 (Brookshire Freeway) with the recommended option at each interchange
- **3+2 Elevated Alternative** – includes at-grade express lanes from Westinghouse Boulevard to Remount Road with the recommended option at each interchange and elevated express lanes from Remount Road to I-277/NC 16 (Brookshire Freeway)

NCDOT/NCTA is requesting concurrence from the Merger Team to carry the 3+2 At-Grade Build Alternative and 3+2 Elevated Build Alternative forward as Detailed Study Alternatives, in addition to the No-Build Alternative, for additional evaluation in the Environmental Assessment.

4. Summary of Public Involvement

NCDOT and NCTA have maintained an open line of communication with the public and stakeholders since the initiation of the I-5718 project. The Project Team has maintained the Charlotte Express Lanes phone hotline (800.254.0498) and email address (CLTExpress@rsandh.com) throughout project development and has responded to questions and inquiries as they are received. NCDOT has also maintained the project website (https://www.ncdot.gov/projects/i-77-south-express-lanes) and monitored the Contact Us page.

The Project Team meets regularly with stakeholders, including the City of Charlotte, CRTPO Board and committees, developers, and elected officials. Since January 2025, the Project Team has attended approximately 25 small group meetings with neighborhood and community organizations such as the Charlotte Regional Business Alliance, Sustain Charlotte, West Boulevard Neighborhood Coalition, and Charlotte Rotary Club.

The first series of Public Meetings is scheduled for November 12 and 13, 2025. NCDOT is planning to host two (2) open-house meetings, one near each end of the project corridor. A formal Public Hearing for the Environmental Assessment is anticipated in mid-2026.

5. Avoidance and Minimization

As noted during CP1, the project corridor is heavily developed and subject to numerous constraints. Avoidance and minimization of impacts to sensitive environmental and community resources has been a consideration throughout the development and evaluation of design concepts. Examples of minimization efforts to date include:

- Best fit alignment was utilized to develop mainline concepts to reduce impacts to streams, wetlands, and recreational resources.
- Impacts to streams, wetlands, community resources, cultural resources, and neighborhoods were considered when selecting interchange concepts for further evaluation during functional design.
- Additional minimization efforts such as retaining walls and reduced planting strip widths were evaluated in areas adjacent to sensitive resources.

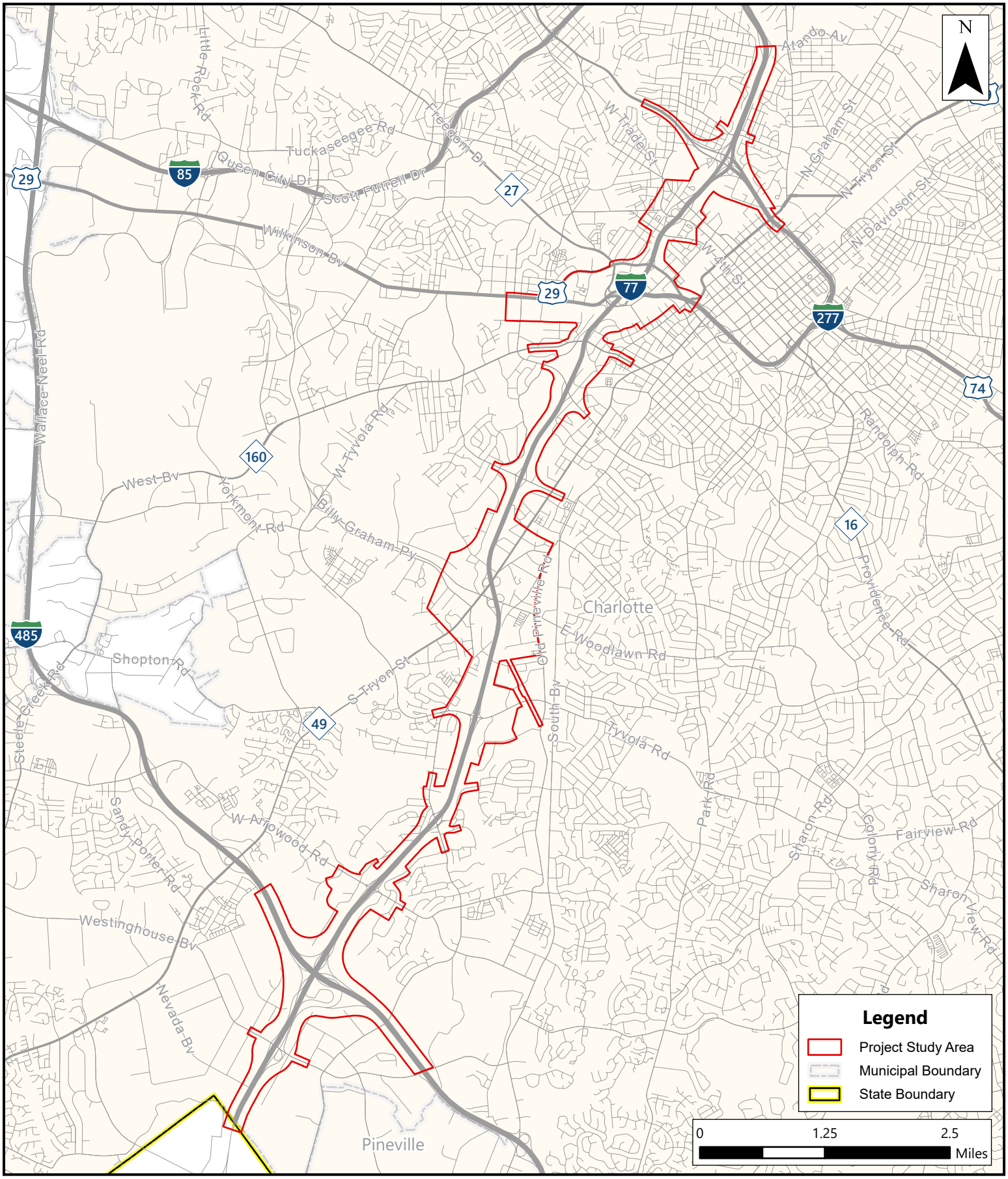
Efforts to avoid and minimize impacts will continue as the design progresses and will be documented in the Environmental Assessment and future Merger Team documents.

6. Merger Plan Review and Next Steps

Based on the Merger Plan, CP2 and CP2A were originally combined into one meeting; however, project timing and design development have necessitated splitting these into individual concurrence points. The Project Team will follow up with the Merger Team regarding the anticipated schedule of CP2A and will update the Merger Plan accordingly.

To date, NCDOT has completed the *Natural Resources Technical Report* (January 2025) and a draft of the *Concept Screening Report* (September 2025). Prior to seeking concurrence on CP2A, NCDOT will complete the Hydraulic Planning Report and functional roadway designs.

CP3 and determination of the Least Environmentally Damaging Practicable Alternative (LEDPA) is anticipated to occur in late 2026 following completion of the Public Hearing, the Public Comment Period, and any additional design evaluation and refinement.



NORTH CAROLINA Turnpike Authority

RS&H

Mecklenburg County

I-77 South Express Lanes

Widen I-77 to include express lanes from the SC State Line to I-277/NC 16 (Brookshire Freeway).

STIP: I-5718 **WBS:** 49020.1.1 **Division:** 10

Figure 1

Project Study Area Map

October 2025

Section 404/NEPA Merger Project Team Meeting Agreement

Concurrence Point No. 1

Project Purpose and Need and Study Area Defined

Project Name/Description: I-77 South Express Lanes (I-77 from South Carolina State Line to I-277/NC 16 (Brookshire Freeway)).

STIP Project: I-5718

Federal Aid Project No.:

WBS No.: 49020.1.1

Project Purpose and Need:

The needs to be addressed by the proposed project are:

- Poor existing and projected traffic operations
- Lack of travel time reliability
- Inability to Serve High-Speed Regional Travel Consistent with the Designations and Goals of Federal, State, and Local Transportation Plans

The primary purpose of the proposed project is to:

- Manage congestion by providing an option for reliable travel time along I-77 from the North Carolina/South Carolina State Line to I-277/NC 16 (Brookshire Freeway)
- Implement managed lanes consistent with recommendations from the *Fast Lanes Study* and *CRTPO 2050 MTP*
- Improve traffic operations by increasing travel speed and increasing throughput along I-77 from the North Carolina/South Carolina State Line to I-277/NC 16 (Brookshire Freeway)

Additional benefits include reducing congestion-related crashes, supporting planned economic growth, and encouraging transit usage to promote mode shift and improve air quality.

Summary Purpose and Need Statement:

The project corridor is subject to poor existing and future traffic conditions, unreliable travel times, and an inability to effectively serve high-speed regional travel.

To address these needs, the I-5718 project proposes to provide an option for reliable travel time and improve traffic operations by implementing managed lanes along I-77 from the South Carolina State Line to I-277/NC 16 (Brookshire Freeway) consistent with recommendations from the Fast Lanes Study and CRTPO 2050 MTP.

Project Study Area

The project study area boundary (as of July 2024) is shown on Attachment 4 in the CP 1 Packet. The I-5718 project limits extend from the South Carolina State Line to I-277/NC 16 (Brookshire Freeway). The project study area includes the I-77 corridor with a 500-foot buffer on either side of the centerline (1,000 feet

total width) and generally extends one-quarter mile from ramp termini intersections with a minimum width of 400 feet along the cross streets.

The project study is intentionally broad to allow for evaluation of a range of design alternatives and was further expanded as needed at complex interchanges to ensure design options under consideration could be accommodated.

The Merger Team has concurred on this date of November 14, 2024, on the above project purpose and need and the study area as shown in the CP 1 Packet for STIP Project No. I-5718.

USACE	Signed by: Stephen Brumagin 1333E3C96CD54D4...	FHWA	Signed by: Seth Wilcher B34ADF9A292349B...
USEPA	Signed by: Amanetta Somerville 5356466460FC4E3...	NCDOT	DocuSigned by: CA8D0247E3814C7...
USFWS	Signed by: Holland Youngman C71763CA6EF74FA...	NCHPO	Signed by: Renee Gledhill-Earley 47DA664AE2B746C...
NCDWR	DocuSigned by: Beth Plummer 600F4439E47B40B...	CRTPO	Signed by: 315E7CFC70C845F...
NCWRC	Signed by: David McHenry 48CD5BE25B6E4DB...		