APPENDIX E

ALTERNATIVES DEVELOPMENT TECHNICAL MEMORANDUM

May 2024

I-285 Top End Express Lanes

Cobb, Fulton and DeKalb Counties, PI 0001758

Georgia Department of Transportation

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Table of Exhibits

Acronyms and Abbreviations

AGT	Automated Guideway Transit
AIP	Advanced improvement project
ARC	Atlanta Regional Commission
ATL	Atlanta-region Transit Link Authority
BRT	bus rapid transit
CD	Collector-distributer
CE	Categorical Exclusion
CFR	Code of Federal Regulations
CID	Community Improvement District
CRNRA	Chattahoochee River National Recreation Area
DDI	Diverging Diamond Interchange
EA	Environmental Assessment
EIS	Environmental Impact Statement
EL	Express lane
ELNIOM	Express Lane Network Implementation and Operation Manual
ETL	Express Toll Lane
FCTMP	Fulton County Transit Master Plan
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FTA	Federal Transit Administration
GCT	Gwinnett County Transit
Georgia DOT	Georgia Department of Transportation
GP	general purpose
GRTA	Georgia Regional Transportation Authority
GSTB	Georgia State Transportation Board
HERO	Highway Emergency Response Operators
HOT	High-Occupancy Toll
HOV	high-occupancy vehicle
I-285	Interstate 285
ITS	Intelligent Transportation System

LF	linear foot (feet)
LOS	level of service
LRT	light rail transit
Maglev	magnetic levitation
MARTA	Metropolitan Atlanta Rapid Transit Authority
Metro Atlanta	Metropolitan Atlanta
ML	managed lane
MLIP	Managed Lane Implementation Plan
MLP	Managed Lane Policy
MLSP	Managed Lane System Plan
MMIP	Major Mobility Investment Program
mph	mile(s) per hour
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NPS	National Park Service
NWC	Northwest Corridor
P3	Public-Private Partnership
PAR	Practicable Alternatives Review
PIOH	Public Information Open House
Proposed Project	I-285 Top End Express Lanes Project
ROW	right-of-way
RTP	Regional Transportation Plan
SR	State Route
SRTA	State Road and Tollway Authority
TDM	Transportation Demand Management
TFA	Transportation Funding Act
TPB	Transit Planning Board
TSM	Transportation System Management
USACE	U.S. Army Corps of Engineers

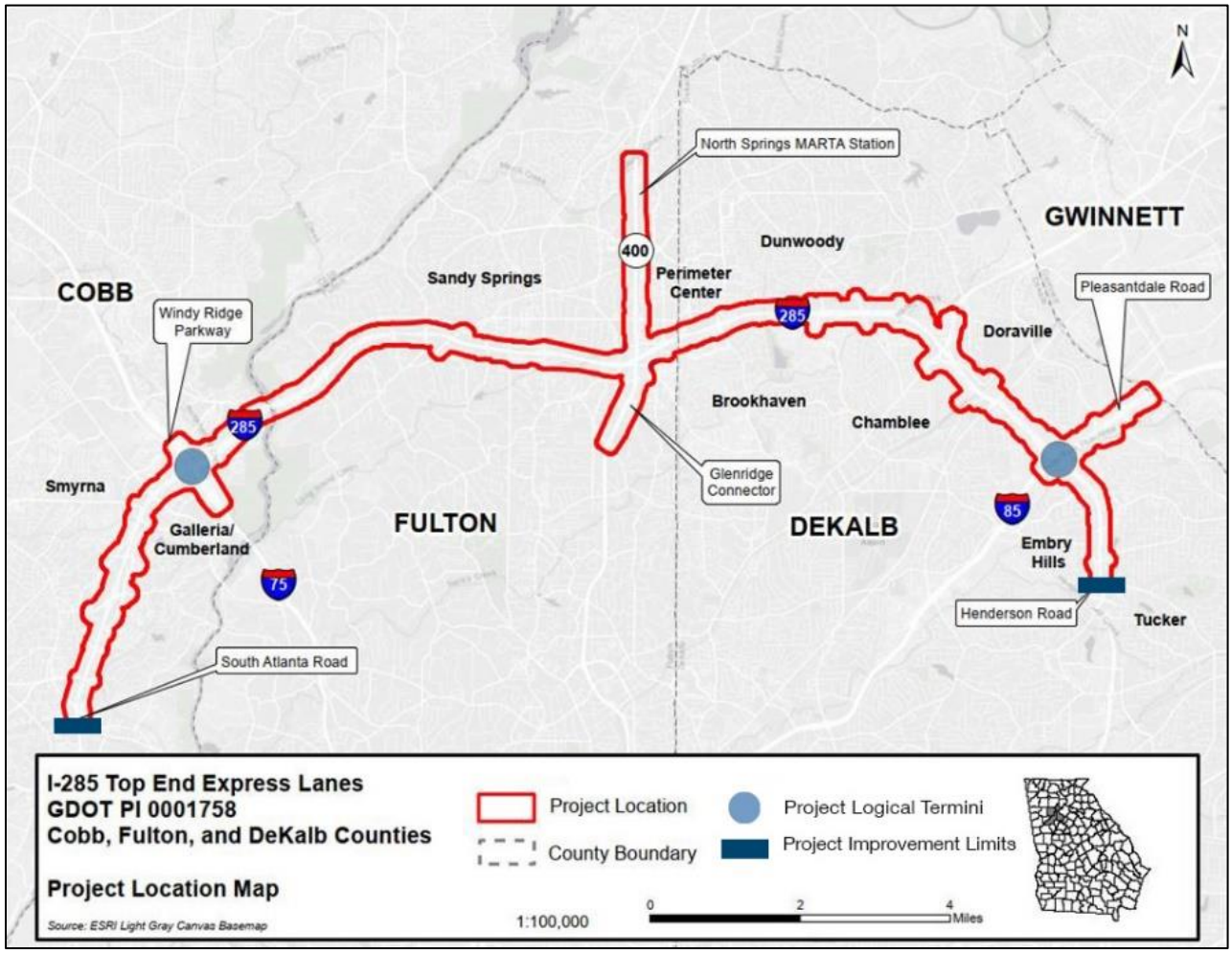
1. Project Background

1.1 Introduction

The Federal Highway Administration (FHWA) and Georgia Department of Transportation (Georgia DOT) are preparing an Environmental Impact Statement (EIS) for a proposed highway express lanes (ELs) project along the "top end" perimeter of Interstate 285 (I-285)/State Route (SR) 407 and SR 400 in the north Metropolitan (Metro) Atlanta area, in Cobb, Fulton, and DeKalb Counties, a distance of 23.5 miles (**Exhibit 1-1**). The I-285 Top End Express Lanes Project (Proposed Project) is studied as one project in the EIS, with the understanding that developers could construct the Proposed Project in multiple phases, to be determined during the procurement process.

The Proposed Project includes improvements between the Proposed Project's logical termini, the I-75 and I-85 system interchanges. While I-75 and I-85 serve as the logical termini, the Proposed Project improvement limits extend to South Atlanta Road on the west and Henderson Road on the east to accommodate related improvements and to provide travelers with the proper decision-making distance and time to connect to existing roadways.

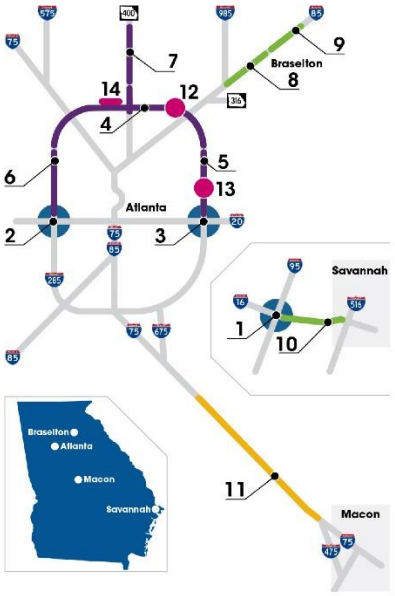
EXHIBIT 1-1: PROJECT LOCATION



The Proposed Project is one of 14 projects that comprise the Major Mobility Investment Program (MMIP). The MMIP implements Georgia DOT's 2010 *Atlanta Regional Managed Lane System Plan* (MLSP)[1] and 2015 update to the MLSP, the *Managed Lane Implementation Plan* (MLIP).[2] Georgia DOT developed the MLSP and MLIP to study the potential effects of managed lanes (MLs) on the existing transportation network, satisfy transportation planning requirements, and serve as the basis for a coordinated effort for the implementation of MLs within the Atlanta region. Passage of the *Transportation Funding Act* (TFA) of 2015 authorized the MMIP. The MMIP includes three interchange reconstruction projects, three interstate widening projects, one commercial vehicle lane project, and four EL projects as well as three advanced improvement projects (AIPs) on I-285 (**Exhibit 1-2**).

The Proposed Project would add connectivity to a network of existing, planned, and proposed ELs across Metro Atlanta. The ELs adjacent to the project and proposed for connectivity are the proposed I-285 Westside EL MMIP project, the existing I-75 Northwest Corridor (NWC) ELs (opened 2018), the SR 400 EL MMIP project, the existing I-85 High-Occupancy Travel (HOT) lanes (opened 2011), and the proposed I-285 Eastside EL MMIP project.

EXHIBIT 1-2: MMIP PROJECTS MAP[3]



Interchange Reconstruction:
1 I-16/I-95
2 I-285/I-20 West
3 I-285/I-20 East

Express Lanes:
4 I-285 Top End Express Lanes
5 I-285 Eastside Express Lanes
6 I-285 Westside Express Lanes
7 SR 400

Interstate Widening:
8 I-85 Phase 1
9 I-85 Phase 2
10 I-16

Commercial Vehicle Lanes:
11 I-75

I-285 Advanced Improvement Projects:
12 I-285/Peachtree Industrial Boulevard Interchange Improvements
13 I-285 Eastside Bridge Replacements
14 I-285 Westbound Auxiliary Lane Extension

The National Environmental Policy Act (NEPA) requires federally funded transportation projects, such as the Proposed Project, to undergo an alternatives analysis process to inform the project team, decision makers, agencies, and the public about the options that are available to address the problem(s) defined in that project's purpose and need statement. The alternatives analysis required under NEPA involves:

- An assessment of social, economic, and environmental impacts

[1] Georgia Department of Transportation (Georgia DOT), Office of Planning. 2010. *Atlanta Regional Managed Lane System Plan*. Final. Prepared by HNTB Corporation. January. http://www.dot.ga.gov/BuildSmart/Studies/ManagedLanesDocuments/FINALREPORT.pdf.

[2] Georgia Department of Transportation (Georgia DOT), Office of Planning. 2015. *Managed Lane Implementation Plan.*

[3] This exhibit identifies the adjoining projects that comprise the MMIP.

- Consideration of avoidance, minimization, and mitigation of environmental impacts
- Interagency coordination and consultation
- Opportunities for the public to participate and comment
- Documentation and disclosure

The project team, using public and agency input, developed alternatives to meet each of the three purposes/goals of the project, which are shown below:

- Provide reliable trip times for commuters
- Improve regional accessibility and connectivity through priced ELs that integrate with the greater Metro Atlanta EL network
- Accelerate project delivery following the TFA legislation in response to the urgency of traffic conditions

1.2 Project History: revive285

Georgia DOT, FHWA, the Federal Transit Administration (FTA), and the Georgia Regional Transportation Authority (GRTA)[4] previously studied transportation improvements in the Proposed Project corridor between 2006 and 2013 as part of the **revive285** project. The alternatives analysis conducted under **revive285** provided the framework for the current improvements proposed under the Proposed Project.

On July 5, 2006, FHWA published in the *Federal Register* (*Federal Register* Volume 71, Number 128) a Notice of Intent (NOI) to prepare an EIS for a proposed combined highway and transit project on I-285 from I-75 in Cobb County to I-85 in DeKalb County, Georgia.[5] From its inception in 2006, the **revive285** project involved considerable planning, development, and modification to adapt to changing laws and policy, corridor needs and constraints, and independent project advancements.

In accordance with *Code of Federal Regulations* (CFR) Title 23, Part 771.111, the **revive285** project team sought public and agency input to develop the project's goals and objectives. The **revive285** project team collected input through numerous public and agency involvement activities, which included stakeholder interviews, field briefings, online surveys, Technical Advisory Committee meetings, Citizen Advisory Committee meetings, resource agency scoping meetings, and public meetings held in 2006 and 2007.

The following list highlights key input from the public and agencies used to define the **revive285** project's objectives:

- Travelers using the I-285 top end identified traffic congestion—specifically backups at major interchanges – as their primary concern
- Travelers also identified uncertainty in trip times, lack of transit options, and the amount of truck traffic along the corridor as main issues along the project corridor proposed under **revive285**

[4] In 2017, the GRTA merged with the State Roads and Tollways Authority (SRTA). Source: State of Georgia. 2020. "State Organizations: State Road and Tollway Authority." Georgia.gov. https://georgia.gov/organization/state-road-and-tollway-authority.

[5] *Federal Register*. 2006. *Notice of Intent: Environmental Impact Statement; Cobb, Fulton, and DeKalb Counties, Georgia*. Volume 71, Number 128. July 5. https://www.federalregister.gov/documents/2006/07/05/06-5974/environmental-impact-statement-cobb-fulton-and-dekalb-counties-georgia.

- Most travelers indicated that they use I-285 to commute to and from work
- Overall, the public agreed that travel conditions along the proposed **revive285** project corridor were a serious problem that must be addressed
- Participants indicated that if no improvements were made to the project corridor proposed under **revive285**, there would be further increases in uncertain travel times, degradation of air quality, and negative effects on the quality of life

Based on public and agency input, the top four goals for improvements in the project corridor proposed under **revive285** included:

1. Better manage and minimize traffic congestion
2. Improve mobility options for the traveling public
3. Maintain and improve system linkages
4. Provide safer travel conditions along the corridor

1.2.1 Associated Plans and Studies

Georgia DOT and the Atlanta Regional Commission (ARC) undertook several plans and studies to define innovative transportation concepts, including diverse transportation modes, for advancing the regional transportation improvements and goals for the project corridor proposed under **revive285**. Some of these studies began prior to **revive285** and continued concurrently and in conjunction with the **revive285** study. Georgia DOT and ARC intended for these plans and studies to identify potential transportation investment strategies for the corridor and evaluate how each strategy may perform as part of the **revive285** project.

- ARC's I-285 *Transit Corridor, Detailed Definitions of Alternatives, Alternatives Analysis and DEIS*.[6] This study analyzed bus rapid transit (BRT) and light rail transit (LRT) along the project corridor proposed under **revive285** for their ability to meet east/west travel demand and provide alternative modes of transportation between the Cumberland/Galleria area and the Perimeter Center area, terminating at MARTA's Doraville Station to the east. The results of the study provided the basis for the BRT and LRT strategies initially considered for **revive285**, including the alignment, potential access points, and station locations. In 2006, ARC updated the outcome of the study and revised it with new information, more recent development trends, additional public and stakeholder involvement, and agency coordination, which provided data for the **revive285** project's alternatives analysis.
- Transit Planning Board (TPB)/Atlanta Regional Transit Implementation Board Vision (2006): In 2006, ARC, MARTA, and GRTA created the TPB, which was a partnership charged with creating a transit plan for the Atlanta region and subsequently a new regional funding source to implement and operate the system. The TPB's future vision for regional transit (referred to as *Concept 3*) included a high-capacity LRT solution along the project corridor proposed under **revive285** from Smyrna in Cobb County to the Gwinnett Arena via Cumberland, Perimeter Center, and Gwinnett Place, connecting to a regional LRT system. The *Concept 3* vision for transit along I-285 was for LRT, rather than BRT as previously adopted by ARC. Instead, the vision for the I-285 west side corridor from I-75 to I-20 was BRT. The ARC Board

[6] Atlanta Regional Commission (ARC). 2004. *I-285 Transit Corridor, Detailed Definitions of Alternatives, Alternatives Analysis and DEIS*. Prepared by URS Corporation in conjunction with PBS&J, Manual Padrn & Associates, ARCADIS, and UrbanTrans Consultants.

adopted *Concept 3* in December 2008.[7] *Concept 3*, in conjunction with the results of ARC's I-285 *Transit Corridor, Detailed Definitions of Alternatives, Alternatives Analysis and DEIS*, provided the basis for the LRT strategy initially considered for **revive285**, including the potential alignments for a fixed-guideway transit corridor.

- The ARC Regional Transportation Plan (RTP) for the Atlanta Region, *Envision 6*:[8] ARC's RTP included the **revive285** project as project AR-ML-200, Project Identification No. 0001758.
- Georgia DOT's *I-285 Strategic Implementation Plan*:[9] This plan analyzed the entire I-285 perimeter and developed simulation tools to model the impact of potential highway modifications along the corridor. Potential improvements included both operational improvements and capacity improvements, such as traffic signals at cross street intersections, intelligent transportation systems (ITS), additional auxiliary lanes between interchanges, ramp metering, ramp braiding, the addition of collector-distributer (CD) roadways, modifying interchange configurations, adding barrier-separated high-occupancy vehicle (HOV) lanes, BRT, barrier-separated MLs, combinations of HOV/BRT and MLs, and HOV system-to-system interchanges. The *I-285 Strategic Implementation Plan* did not advance projects through development and construction, but the **revive285** project team used the data and models developed as a part of that study (including speed, level of service [LOS], and accident data).

1.2.2 Strategies Considered Under revive285

The studies and plans Georgia DOT and ARC undertook in the mid-2000s guided the development of transportation investment strategies to address the **revive285** project objectives. Strategies considered included Transportation System Management (TSM), roadway widening and related improvements, and transit.

- **TSM.** The **revive285** project team considered the following TSM strategies for the project: congestion pricing, truck restrictions, ITS, improved signage, incident management, and Transportation Demand Management (TDM). These strategies employ roadway usage policies, operations systems, and traveler information systems to improve traffic operations and safety.
- **Roadway Widening and Related Improvements.** The **revive285** project team considered adding general purpose (GP) lanes, adding MLs, and implementing operational improvements. GP lanes are typical all-purpose lanes that do not require payment of tolls or certain occupancy conditions to use. MLs implement operational strategies such as tolling or vehicle restrictions in response to changing conditions such as congestion. Types of MLs include ELs, HOV lanes, toll lanes, and truck-only lanes. The **revive285** project team also considered making improvements off the I-285 mainline, including surface street improvements and bicycle and pedestrian safety improvements. Surface street improvements could include widening or improving existing roadways or constructing new roadways. Bicycle and pedestrian safety improvements include sidewalk widening, streetscaping for pedestrians, and adding bicycle lanes or dedicated bicycle paths.

[7] Atlanta Regional Commission (ARC). 2020a. *Concept 3 Regional Transit Vision*. AtlantaRegional.Org. https://atlantaregional.org/transportation-mobility/transportation-planning/concept-3/.

[8] Atlanta Regional Commission (ARC). 2007. *Envision 6*.

[9] Georgia Department of Transportation (Georgia DOT). 2008. *I-285 Strategic Implementation Plan*.

- **Transit.** The **revive285** project team considered the following transit options: Heavy Rail, Light Rail, BRT, Express Bus,[10] Monorail, Automated Guideway Transit (AGT), and magnetic levitation (Maglev). Heavy rail typically has the capacity to transport a higher number of passengers at higher speeds along a rail line right-of-way (ROW) that excludes all other vehicular and foot traffic. Light rail typically transports a moderate number of passengers at moderate speeds along a rail line not always on distinct ROW that separates the rail cars from vehicular and foot traffic. BRT runs in dedicated lanes used exclusively by buses. Express buses run in MLs or GP lanes but operate for longer distances without stopping as compared to a local bus service. Monorail is an elevated electric railway for transit vehicles operating singly or in multi-car trains. AGT is single- or multi-car trains operating on a grade-separated fixed electric railway without an onboard human operator. Service may be on a fixed schedule or in response to a passenger-activated call button. Maglev trains suspend, guide, and propel vehicles using electromagnetic force to eliminate wheel-to-rail frictional forces. Maglev requires dedicated ROW.

The **revive285** project team screened transportation investment strategies based on their ability to address the defined project goals and public and agency input. A series of scoping meetings, advisory committee meetings, local agency meetings, stakeholder interviews, and a round of Public Information Open House (PIOH) meetings were held to collect input.

The transportation system investment screening findings are as follows:

- **TSM Strategies.** The **revive285** project team carried TSM forward for further consideration as it has the potential to maximize the effectiveness of the existing infrastructure.
- **Roadway Improvements.** In 2007, the Georgia State Transportation Board (GSTB) adopted a Managed Lane Policy (MLP).[11] The policy stipulated that new capacity lanes added to limited-access facilities would be MLs instead of the typical GP lanes. Per the MLP, "All new capacity lanes within limited access corridors in Metro Atlanta shall be managed." Because of the **revive285** project's location in the Metro Atlanta area, any new capacity lanes considered for the project would be MLs. Therefore, the **revive285** project team dismissed adding capacity via GP lanes from further consideration.
- **Transit.** The **revive285** project team carried forward BRT, express bus, and LRT as the transit options to incorporate into Build Alternatives. The **revive285** project team found that they met Goals 1, 2, and 3 better than the other transit options.
- **Off-mainline Improvements.** Surface street improvements and bicycle and pedestrian improvements do not address the project's purposes/goals as standalone alternatives, but the **revive285** project team carried them forward as support strategies for consideration with any Build Alternative.

[10] The terms "express bus" and "BRT" often are used interchangeably by the public and media. Both provide service intended to run faster than normal bus services between the same two commuter or destination points. One difference is that Express bus service (also known as commuter bus service) typically has a limited route schedule matched to the commuting peak hours only. Both express bus and BRT may also provide a limited number of stops to decrease the travel time.

[11] Georgia Department of Transportation (Georgia DOT), Office of Planning. 2010. *Atlanta Regional Managed Lane System Plan*. Final. Prepared by HNTB Corporation. January. http://www.dot.ga.gov/BuildSmart/Studies/ManagedLanesDocuments/FINALREPORT.pdf.

1.2.3 revive285 Alternatives Considered

The **revive285** project team used findings of the transportation investment strategies screening to develop the following alternatives:

- FTA New Starts Baseline Alternative
- Alternative 1: No-Build
- Alternative 2: TSM
- Alternative 3: BRT + Operational Improvements
- Alternative 4: Express Bus + Operational Improvements
- Alternative 5: BRT + Operational Improvements + ML
- Alternative 6: Express Bus + Operational Improvements + ML
- Alternative 7: LRT + Operational Improvements
- Alternative 8: LRT + Operational Improvements + ML

The FTA New Starts Baseline Alternative was a requirement that agencies consider low-cost improvements to existing transit before considering pursuing New Starts funding for major transit investments such as fixed-guideway transit systems on separate ROW. To apply for New Starts funding, the project must meet the following prerequisites: (1) an agency committed to serving as the project sponsor for transit improvements; (2) local, regional, and/or state funding for both capital and ongoing maintenance costs; and (3) the inclusion of the proposed transit improvements in the region's fiscally constrained RTP.[12]

The **revive285** project team evaluated five options for Alternative 6 (Express Bus + Operational Improvements + ML):

- Alternative 6a: Two new MLs in each direction
- Alternative 6b: Conversion of one existing GP lane in each direction to a ML, with the addition of one ML in each direction
- Alternative 6c: Three new MLs in each direction
- Alternative 6d: Conversion of one existing GP lane in each direction to a ML, with the addition of two MLs in each direction
- Alternative 6e: Three-lane center elevated reversible MLs

The **revive285** project team identified Alternative 6a as the preferred option. Alternatives 6c and 6d were eliminated because the traffic analysis determined that only two MLs in each direction are needed to provide acceptable traffic flow. The **revive285** project team determined that Alternative 6e was not feasible due to the conflicting directional distribution of traffic along I-285. For instance, morning commuters to the large commercial area along SR 400 travel primarily east from I-75 to SR 400 and primarily west from I-85 to SR 400 along I-285. While Alternative 6b was initially carried forward, the **revive285** project team ultimately eliminated Alternative 6b due to changes in federal transportation funding and authorization rules under MAP-21

[12] U.S. Department of Transportation (USDOT). 2020. *Capital Investment Program*." Federal Transit Administration. March 31. https://www.transit.dot.gov/funding/grant-programs/capital-investments/about-program.

Section 1512, which prohibits providing federal funds for projects that reduce the number of toll-free non-HOV lanes as Alternative 6b would.[13]

The **revive285** project team evaluated Alternatives 1 through 8 based on constructability, impacts to adjacent properties and the environment, transportation performance measures, and public and agency input. The following four goals of **revive285** were considered to evaluate the transportation performance of the alternatives:

- Goal 1 (Better manage and minimize traffic congestion): Potential to facilitate better incident management, potential to encourage trips during non-peak periods, potential to reduce trips, potential to add capacity, flexibility for modifications, conformance with current/projected trip types, potential to decrease travel times, potential to increase person and truck throughput, and potential to provide optimal capacity.
- Goal 2 (Improve mobility options for the traveling public): Potential to provide alternate modal access to employment and population areas, potential to provide additional mode/route choices, potential to promote the use of alternate routes or modes, potential to reduce fuel consumption and user costs, potential to provide alternate modal access to areas with high percentages of transportation disadvantaged people, potential to serve regional and local trips, and potential to address congestion on surface streets.
- Goal 3 (Maintain and improve system linkages): Number of new connections to existing highway systems, number of connections to proposed/programmed projects, potential to attract new transit riders, number of new connections to existing transit systems/stations of the same mode, number of connections to proposed/programmed transit systems/stations, number of new connections to proposed/programmed truck-only projects, the potential for improved connections to top freight origins/destinations.
- Goal 4 (Provide safer travel conditions along the corridor): Potential to separate heavy trucks from passenger vehicles, potential to reduce vehicle conflicts, potential to incorporate safety features, potential to allow for continued traffic movement, potential to redirect traffic, and potential to improve the safety of connections between existing, proposed, or programmed bicycle and pedestrian facilities.

The evaluation resulted in eliminating six alternatives as discussed below.

The FTA New Starts Baseline Alternative was eliminated because the project lacked the prerequisites to consider pursuing New Starts funding. The RTP did not include a transit project and no transit agency had identified a dedicated transit improvement project for the **revive285** project.

Alternative 2, TSM, was eliminated because it would not be effective enough in managing and minimizing traffic congestion, improving mobility options, and providing safer travel conditions as a standalone alternative. TSM, however, would be combined with other alternatives.

Alternatives 3 (BRT + Operational Improvements), 5 (BRT + Operational Improvements + ML), 7 (LRT + Operational Improvements), and 8 (LRT + Operational Improvements + ML) were eliminated because of lack of local, regional or state funding for a dedicated transit component.

Alternative 1 (the No-Build Alternative), Alternative 4 (Express Bus + Operational Improvements), and Alternative 6a (Express Bus + Operational Improvements + ML) met the criteria for advancement. Although the public favored Alternative 4 because it was the least expensive of the alternatives that would improve traffic

[13] Federal Highway Administration (FHWA). 2012. *Moving Ahead for Progress in the 21st Century Act (MAP-21)*. July 17. https://www.fhwa.dot.gov/map21/summaryinfo.cfm.

congestion and safety, most of the operational improvements identified under Alternative 4 had been advanced and completed as independent projects, thereby making Alternative 4 no longer viable as a standalone alternative. A description of these independent projects is provided in **Section 1.2.4**.

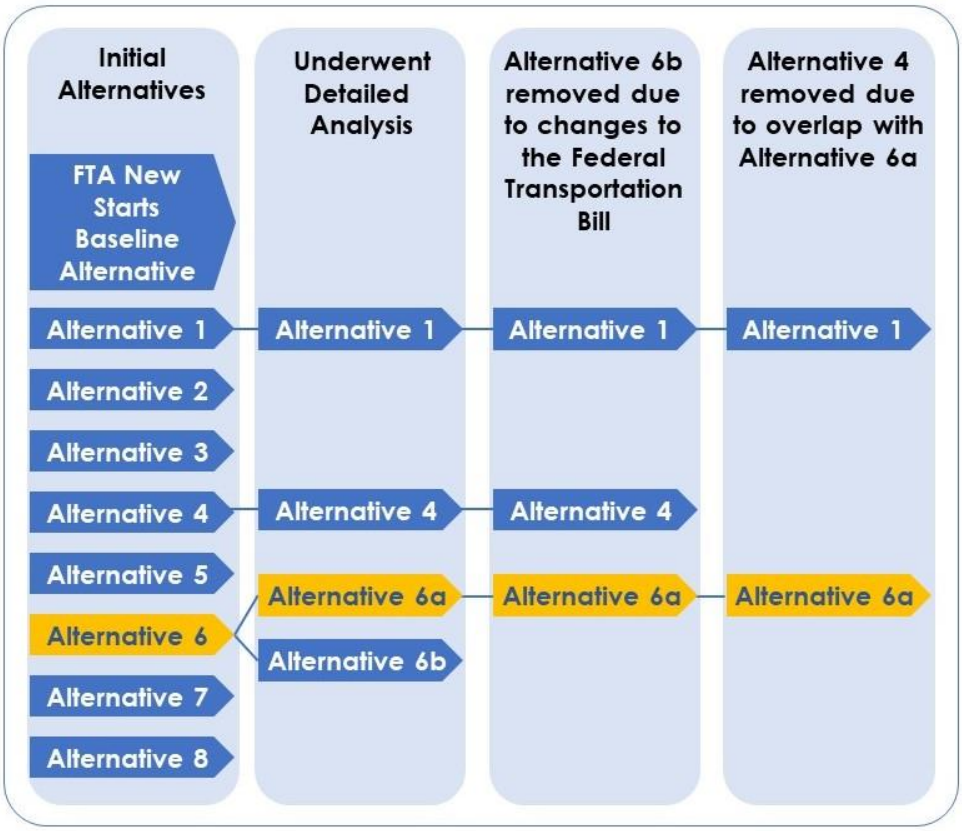
Additionally, ARC's fiscally constrained long-term transportation plan at the time, *PLAN 2040*, did not include a transit project for the **revive285** corridor and no transit agency had identified a dedicated transit project for consideration. The **revive285** project team determined express bus would operate in the MLs rather than in a separate facility, and consequently removed express bus as a separate transportation investment strategy in Alternative 6a.

In 2015, the state legislature passed the TFA, which funded a collection of major transportation projects, referred to as the MMIP. The MMIP identified a concept similar to Alternative 6a as Project 5, the I-285 Top End ELs Project.

The **revive285** project resulted in the identification of one concept that met the project goals: a concept similar to Alternative 6a under the MMIP, which consisted of two ELs[14] in each direction, no distinct express bus accommodations (but not precluding future express buses or BRT), and certain operational improvements critical to the implementation of the ELs. A graphical representation of the **revive285** alternatives screening process is shown in **Exhibit 1-3**.

[14] In 2009, GSTB adopted a resolution that when MLs would be implemented, the preferred approach would be congestion priced ELs. They manage traffic through dynamic pricing by which toll amounts to be paid by passenger vehicles reflect current traffic conditions. Toll amounts are higher during periods of congestion; toll amounts are lower when there is less congestion.

EXHIBIT 1-3: REVIVE285 ALTERNATIVES SCREENING



1.2.4 Independent Projects Advanced from revive285 Top End

Georgia DOT advanced several projects that contained improvements located along the **revive285** corridor, including operational improvements included in Alternatives 4 and 6a. These projects address critical needs in the corridor but have independent utility from the **revive285** project. **Exhibit 1-4** describes the projects that Georgia DOT independently advanced from the **revive285** project.

EXHIBIT 1-4: PROJECTS ADVANCED INDEPENDENTLY FROM **REVIVE285**

Project Name	Project Description	Status	Purpose Met
Georgia DOT PI No. 0000784: I-285/SR 400 Interchange (Transform 285/400)	Interchange reconstruction project and accompanying CD lanes.	EA/FONSI approved on 05/19/15; construction began in 2017 and is underway.	Reduced congestion, added capacity, improved safety, and accelerated delivery.
Georgia DOT PI No. 0010925: I-285/Riverside Drive Interchange	Conversion of signalized intersections at each ramp terminal on Riverside Drive to roundabouts and I- 285 bridge maintenance.	CE approved on 02/03/15; construction began in 2016 and was completed in 2016.	Relieved congestion and improved travel times and safety.
Georgia DOT PI No. 0009725: I-285/Ashford Dunwoody Road DDI	Conversion of the traditional full-diamond interchange at this location to a DDI configuration.	CE approved on 03/31/11 and project completed in July 2012.	Relieved congestion and improved travel times.
Georgia DOT PI Nos. 0009159 and 0009160: Widening of Roswell Road Bridge over I- 285	Widening of Roswell Road bridge over I-285.	CE approved on 08/13/10 and project completed in August 2013.	Increased capacity and improved LOS/travel times at intersections.
Georgia DOT PI No. 0012774: I-75/Windy Hill Parkway DDI	Conversion of the traditional full-diamond interchange at this location to a DDI configuration.	CE approved on 09/18/14 and project completed in 2017.	Improved safety and operations at this congested interchange.

Notes:
CE: = Categorical Exclusion; DDI = Diverging Diamond Interchange; EA = Environmental Assessment; FONSI = Finding of No Significant Impact; LOS: = Level of Service; PI = project information

With the completion of the independent operational projects and the lack of funding for distinct transit improvements, Georgia DOT and FHWA determined that the project definition had substantially changed. Therefore, on August 21, 2019,[15] FHWA rescinded the NOI for **revive285**, and on November 4, 2019, FHWA published (*Federal Register* Vol. 84, No. 213) a NOI to prepare an EIS for the I-285 Top End ELs Project in Cobb, Fulton, and DeKalb Counties, Georgia (refer to **Appendix A, Notice of Intent**).

[15] *Federal Register*. 2019. *Withdrawal of a Notice of Intent (NOI) To Prepare an Environmental Impact Statement (EIS)*. Volume 84, Page 46777. September 5. https://www.federalregister.gov/documents/2019/09/05/2019-18512/withdrawal-of-a-notice-of-intent-noi-to-prepare-an-environmental-impact-statement-eis.

2. I-285 Top End Express Lanes Alternatives Development Process

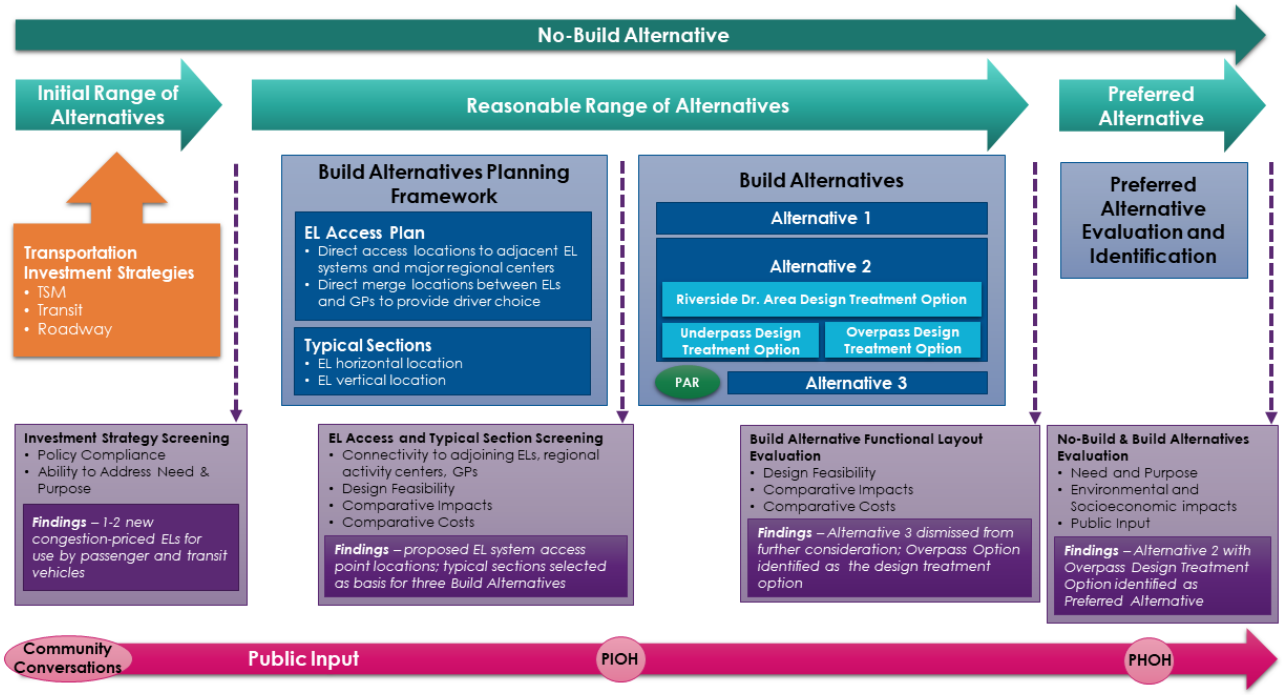
The project team identified alternatives to address the Proposed Project's need and purpose, which are described in detail in **Draft EIS Chapter 1, Need and Purpose** (refer to **Exhibit 1-3** in Draft EIS Chapter 1 for a summary of the need and purpose).

The **revive285** project provided the starting point for the Proposed Project consistent with 23 CFR 450.212, Transportation Planning Studies and Project Development. The project team examined the analysis completed for **revive285** through the lens of the Proposed Project's need and purpose, and considered transportation-related policies and regulations, as well as updates to the existing and proposed transportation network. The alternatives development process comprised three stages: Initial Range of Alternatives, Reasonable Range of Alternatives, and Preferred Alternative (**Exhibit 2-1**). Alternatives evaluated include various types of transportation improvements to the Proposed Project corridor as well as taking no action beyond improvements already planned along the corridor (No-Build Alternative). The project team incorporated measures to avoid and minimize impacts and considered public input throughout the alternatives' development and evaluation process.

The initial range of alternatives considered for the project included TSM, roadway improvements, and transit improvements. Transportation policies and the Proposed Project's need and purpose guided the identification of the set of transportation investment strategies to carry forward for further development into Build Alternatives. The project team identified a planning framework for developing the Build Alternatives. This framework included ensuring driver choice in using ELs and GP lanes along the Proposed Project corridor, system-to-system connectivity between the Proposed Project and adjacent roadway systems, and access to major regional activity centers along the corridor. The project team also evaluated different horizontal and vertical locations of the ELs. The project team developed two Build Alternatives and presented them at PIOH meetings in January 2020. In response to public input received at the January 2020 PIOH meetings, the project team developed a design treatment option in the Riverside Drive area. The project team also developed a third Build Alternative in response to the U.S. Army Corps of Engineers' (USACE's) request during the Practicable Alternatives Review (PAR) process conducted in early 2020.[16] The alternatives development and evaluation process culminated in the identification of a Preferred Alternative.

[16] For additional information on the Practicable Alternatives Review process, refer to **Appendix F-G, Practicable Alternatives Review**.

EXHIBIT 2-1: ALTERNATIVES DEVELOPMENT AND EVALUATION PROCESS



3. No-Build Alternative

Under the No-Build Alternative, Georgia DOT would not implement any transportation improvements for the Proposed Project. However, sponsors of all adjoining projects included in Atlanta's RTP will still implement those projects. The project team considered the No-Build Alternative for its ability to meet the Proposed Project's need and purpose and as a baseline against which Build Alternatives were compared. **Appendix H-4, Transportation Systems Report** includes a detailed discussion of the No-Build Alternative features and transportation performance characteristics.

4. Initial Range of Alternatives

The alternatives development process began with the evaluation of three types of transportation investment strategies—TSM, roadway improvements, and transit improvements. As indicated in **Section 1, Project Background**, the **revive285** project identified and evaluated these types of strategies. The project team revisited these strategies for the Proposed Project and determined that they were an appropriate range of the potential types of solutions to use as the starting point for the alternatives considered for the Proposed Project. The project team evaluated the strategies for their ability to address the Proposed Project's need and purpose[17] and ensure compliance with Georgia transportation policy. The initial range of alternatives evaluation concluded with the proposed set of transportation investment strategies to develop the Build Alternatives alongside the No-Build Alternative as the Reasonable Range of Alternatives.

4.1 Transportation System Management Investment Strategies

The goal of TSM is to optimize the operational functionality of an existing facility before considering making the financial investment to add capacity. The project team evaluated TSM strategies for their ability to address the project's need and purpose, either as standalone improvements or in combination with other transportation improvement strategies. The project team considered the following TSM strategies: Congestion Pricing, Truck Restrictions, ITS, Incident Management, and TDM.

- **Congestion Pricing.** Congestion pricing is a tolling strategy intended to reduce congestion by increasing tolls when roadways are more congested and reducing tolls when roadways are less congested.
- **Truck Restrictions.** Truck restrictions limit various travel options for trucks to improve traffic flow, improve safety, and reduce peak-period congestion. Options include prohibiting trucks from using certain lanes or routes, limiting freight truck travel to specific times of day, or setting more restrictive speed limits for heavy trucks. Currently, trucks are limited in their use of I-85, I-75, I-20, and SR 400 inside the I-285 perimeter. Therefore, trucks largely use I-285 in the metro region. Large trucks (trucks with more than six wheels except buses and motorcoaches [Georgia Code 40-6-52]) cannot use the two leftmost lanes on I-285.
- **ITS.** The goals of ITS strategies are to improve safety and mobility along roadways. Strategies include advanced traffic signal operations, vehicle detectors, closed-circuit television cameras, ramp meters, and communication of real-time transportation information through dynamic message signs, dedicated websites, and telephone information numbers. Georgia DOT currently implements Georgia NaviGAtor, which is Georgia DOT's ITS, in the Proposed Project corridor.
- **Incident Management.** Incident management improves the efficiency of detecting, responding to, and clearing traffic incidents. Additionally, incident management communicates information related to incidents so that motorists can make real-time trip-making decisions to avoid or minimize being impacted by the traffic effects of the incident. Incident management strategies improve operating efficiency and

[17] For additional information on the Need and Purpose, refer to **Appendix C, Need and Purpose Memorandum.**

safety. Georgia DOT's incident management system used in the Proposed Project corridor is the Highway Emergency Response Operators (HERO) incident response units.

- **TDM.** TDM maximizes the efficiency of the existing transportation infrastructure. TDM strategies incentivize drivers to use alternative transportation options to reduce single-occupancy vehicle use and use of transportation systems overall or specifically during peak hours. TDM techniques are in use in the Proposed Project corridor and include discount transit passes, ride-matching for cars and vanpools, vanpool and carpool subsidies, guaranteed ride home program for carpool, vanpool, and transit users, and personalized commute information. Teleworking (working from home) and "flex time" (compressed work weeks and/or flexible work schedules to avoid commutes during peak travel times) are additional TDM techniques. Georgia Commute Options, which is a program managed by ARC and funded by the Georgia DOT, enables many of these TDM strategies as alternatives to single-occupant vehicle use.[18]

4.1.1 Evaluation of Transportation System Management Strategies

The project team did not carry forward pricing existing GP lanes because it would not address the project's needs. It would not address existing congestion issues along the I-285 corridor, which is already over capacity and would not accommodate the projected increase in usage of up to 29% under the No-Build condition by 2057, the Proposed Project's design year.[19] Further, it would not address the operational problems the existing system experiences during peak travel periods by not addressing the heavy merging, diverging and weaving of traffic that occurs throughout the corridor. Lastly, converting over capacity GP lanes to tolled/congestion priced lanes would likely divert motorists onto "free" secondary roads, resulting in off-system traffic impacts.

A wide array of TSM strategies are implemented in the Proposed Project corridor (refer to **Section 4.1, Transportation System Management Investment Strategies** for a description of these TSM strategies). While these strategies contribute to the improved reliability of trip times for commuters as well as improved accessibility and regional connectivity, they cannot effectively address the Proposed Project's needs. Therefore, the project team did not carry them forward as a standalone alternative.

4.2 Transit Investment Strategies

State and regional planning organizations recognize that expanding transit is a key to solving Metro Atlanta's transportation problems. Transit plans and studies evaluated transit improvements along and in the vicinity of the Proposed Project corridor.

- **The Georgia Regional Transportation Authority (GRTA) Xpress Horizon 1 Service Plan, and Horizons 2 and 3 Service Plan** are comprehensive strategies analyzing how to maximize productivity, increase ridership, and improve the effectiveness of the existing commuter coach/bus service.
    - **The Horizon 1 Service Plan (Phase 1)** strategy included improvements to access by increasing the number of trips to major employment centers using existing funding mechanisms in the short-term period. The other portion of the plan streamlined services by making it more efficient, more reliable, and easier for customers to understand when/where to board and disembark with all routes having

[18] Atlanta Regional Commission (ARC). 2020b. *GeorgiaCommuteOptions.com*. https://gacommuteoptions.com/.

[19] Refer to **Draft EIS Chapter 1, Need and Purpose**, **Section 1.3.1.1**, for additional information on travel forecasts.

stops in Downtown and Midtown, shorter headways, and reallocation of buses to corridors with higher ridership and demand. SRTA implemented Phase 1 improvements in 2016. The Atlanta-regional Transit Link Authority (ATL)-operated Xpress bus routes 401, 417 and 428 currently use the Proposed Project corridor (**Exhibit 4-1**). The *Xpress* bus services plan to use the EL network and its future expansion, as it would benefit such transit services.[20]

- **The Horizons 2 and 3 Service Plan** (Phase 2) were long-term strategies (2016–2026) that aimed at increasing transit efficiency throughout the Atlanta metro region. The focuses of the strategies were improving access to Hartsfield-Jackson Atlanta International Airport, improving transit service levels with the addition of ELs to the Georgia ELs network on I-75 and I-85 in the south Metro Atlanta area (i.e., Coweta, Clayton, and Henry Counties), and increasing access to employment centers.

  As described in the Horizons 2 and 3 Service Plan, transit operators recognized that ELs improved travel speeds and trip-reliability compared to using GP lanes by creating an exclusive lane for eligible toll-paying automobiles and for buses. The use of ELs enables buses to travel through a corridor faster than vehicle traffic in GP lanes. For example, within the first weeks of the I-85 HOT ELs opening, vehicles using the ELs traveled on average 15 miles per hour (mph) faster than those on the GP lanes—and often 25 mph or faster, saving as much as 25 to 30 minutes per trip.[21]

- **The Fulton County Transit Master Plan** (FCTMP) identifies short-term, mid-term, and long-term projects, including transit expansion, existing service and last-mile connectivity improvements, and safety improvements at transit facilities (e.g., bus stops, train stations, and roadway/street infrastructure).[22] The guiding principles are the following: provide better access; provide faster, more reliable mobility and mitigated congestion; catalyze economic development, investment, and placemaking; maximize return on investment; and establish a framework for greater regional connectivity. Fourteen cities outside of Atlanta and the Fulton County Commission affirmed that a master plan study was necessary to improve and expand transit services. ARC worked with the city mayors and Fulton County Commission to fund and manage the master plan study in collaboration with MARTA, Fulton County, and the 14 participating cities.[23] Following the 3-phased study to identify transit concepts and various modes to include in the FCTMP, the implementation plan included the following transit modes: BRT; Arterial Rapid Transit; Frequent Local Bus; Local Bus; Microtransit; and Park-and-Ride Lots. In the Proposed Project corridor, rapid transit improvements using ELs are identified for further consideration.

- **The NWC ELs** project that opened in 2018 is a 29.7-mile, reversible, ELs project from Sixes Road on I-575 in Cherokee County and Hickory Grove Road on I-75 in Cobb County to I-285/Akers Mill Road in Cobb County. ATL *Xpress* now operates five transit routes on the NWC ELs[24] (**Exhibit 4-1**). The Horizon Service Plans 2 and 3 identify long-term recommendations that would benefit the services using the NWC ELs, such as new and increased Park-and-Ride capacity; enhanced services to Downtown,

[20] Georgia Regional Transportation Authority (GRTA). 2015a. *Direct Xpress Horizon 1 Service Plan*. Prepared by Nelson/Nygaard. August.

[21] Georgia Regional Transportation Authority (GRTA). 2015b. *Direct Xpress Horizons 2 & 3 Service Plan*. Prepared by Nelson/Nygaard. August.

[22] Fulton County, Georgia. 2018. *Fulton County Transit Master Plan*. Sponsored by Fulton County Government, Atlanta Regional Commission, and the 14 Participating Cities. February. https://www.fultoncountyga.gov/inside-fulton-county/fulton-county-initiatives/fulton-county-transit-plan.

[23] The 14 cities in Fulton County outside of Atlanta include: Alpharetta, Chattahoochee Hills, College Park, East Point, Fairburn, Hapeville, Johns Creek, Milton, Mountain Park, Palmetto, Roswell, Sandy Springs, South Fulton, and Union City.

[24] https://www.xpressga.com/routes/. Accessed August 15, 2022.

Midtown, and Perimeter Center areas; and all-day service and airport service. According to a Moody's Investors Report, the number of daily trips, travel speeds during peak travel periods, and toll revenues for the NWC ELs have all exceeded market expectations since the facility opened in September 2018.[25] The same report referenced air quality improvements as cars and buses are not idling in traffic.

- **Cobb County's 2050 Comprehensive Transportation Plan: *CobbForward***, adopted in February 2022, is the most recent countywide transportation plan.[26] On page 142 of the CobbForward Recommendations Report, BRT is identified as a regional partnership project to be implemented in MLs along the Top End Perimeter.

- **I-285 Express Lanes Transit Planning Study—** Building upon recommendations from past transit planning initiatives, local governments (cities of Brookhaven, Dunwoody, Sandy Springs, Chamblee, Doraville, Smyrna, and Tucker, as well as the Community Improvement Districts in the Galleria/Cumberland and Perimeter Center areas)[27] initiated a study in 2018 to assess how these communities might work together to optimize Proposed Project transit connections. They started a second phase of the study to assess how transit services might make use of the proposed ELs by creating a commuter bus system. Preliminary information suggests a refined concept like express bus service considered in earlier studies, such as ARC's I-285 *Transit Corridor, Detailed Definitions of Alternatives, Alternatives Analysis and DEIS*.[28] These studies suggest that this refined concept could increase travel speeds, reduced travel times, and increased ridership, like the benefits experienced along I-85 and NWC. In March 2022, Georgia DOT, ATL, MARTA, Cobb County, Gwinnett County, and ARC entered into a Memorandum of Understanding to advance the MARTA-led Planning Study for high-capacity transit within the I-285 Top End ELs.[29] A copy of the multi-jurisdictional MOU and a summary of the corridor transit planning work related to I-285 are included in **Appendix M**, **Agency Correspondence,** *Atlanta-Region Transit Link Authority I-285 Transit Plan Memo*. The Memorandum of Understanding includes the statement that "Environmental and NEPA considerations would be addressed by the Parties subsequent to the planning review."

- **Gwinnett County Comprehensive Transportation Plan, *Destination 2040*,** is the most recent update to the countywide transportation plan.[30] *Destination 2040* provides recommendations for transportation

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[25] Pendered, David. 2019. *Northwest Corridor: Toll revenues, peak speed, traffic trips exceed expectations*. Saporta Report. April 28. https://saportareport.com/northwest-corridor-toll-revenues-peak-speed-traffic-trips-exceed-expectations/.

[26] Cobb County. 2022. *Cobb County's 2050 Comprehensive Transportation Plan: CobbForward*. Adopted February 8. https://www.cobbcounty.org/transportation/planning/comprehensive-transportation-plan.

[27] The CIDs have emerged as significant centers of influence in the Metro Atlanta region and are designed to assist communities in improving conditions for existing businesses and attracting new growth. By utilizing self-imposed tax revenues from commercial businesses within a CID, communities can initiate community improvements/enhancements, such as infrastructure improvements (i.e., roads, bridges, wastewater, etc.), creation of bike- and pedestrian-friendly corridors, parks, trails, and greenspace. The CIDs are enhancing the urban and suburban landscape.

[28] Atlanta Regional Commission (ARC). 2004. *I-285 Transit Corridor, Detailed Definitions of Alternatives, Alternatives Analysis and DEIS*. Prepared by URS Corporation in conjunction with PBS&J, Manual Padrn & Associates, ARCADIS, and UrbanTrans Consultants.

[29] Atlanta-region Transit Link Authority, Metropolitan Atlanta Rapid Transit Authority, Cobb County, Gwinnett County, the Georgia Department of Transportation, and the Atlanta Regional Commission. 2022. *Memorandum of Understanding Regarding Funding and Collaboration By and Between the Atlanta-region Transit Link Authority, the Metropolitan Atlanta Rapid Transit Authority, Cobb County, Gwinnett County, the Georgia Department of Transportation, and the Atlanta Regional Commission.* Effective March 9, 2022. Signed May 11, 2022.

[30] Gwinnett County, Georgia. 2017. *Destination 2040: Gwinnett's Comprehensive Transportation Plan*. October.

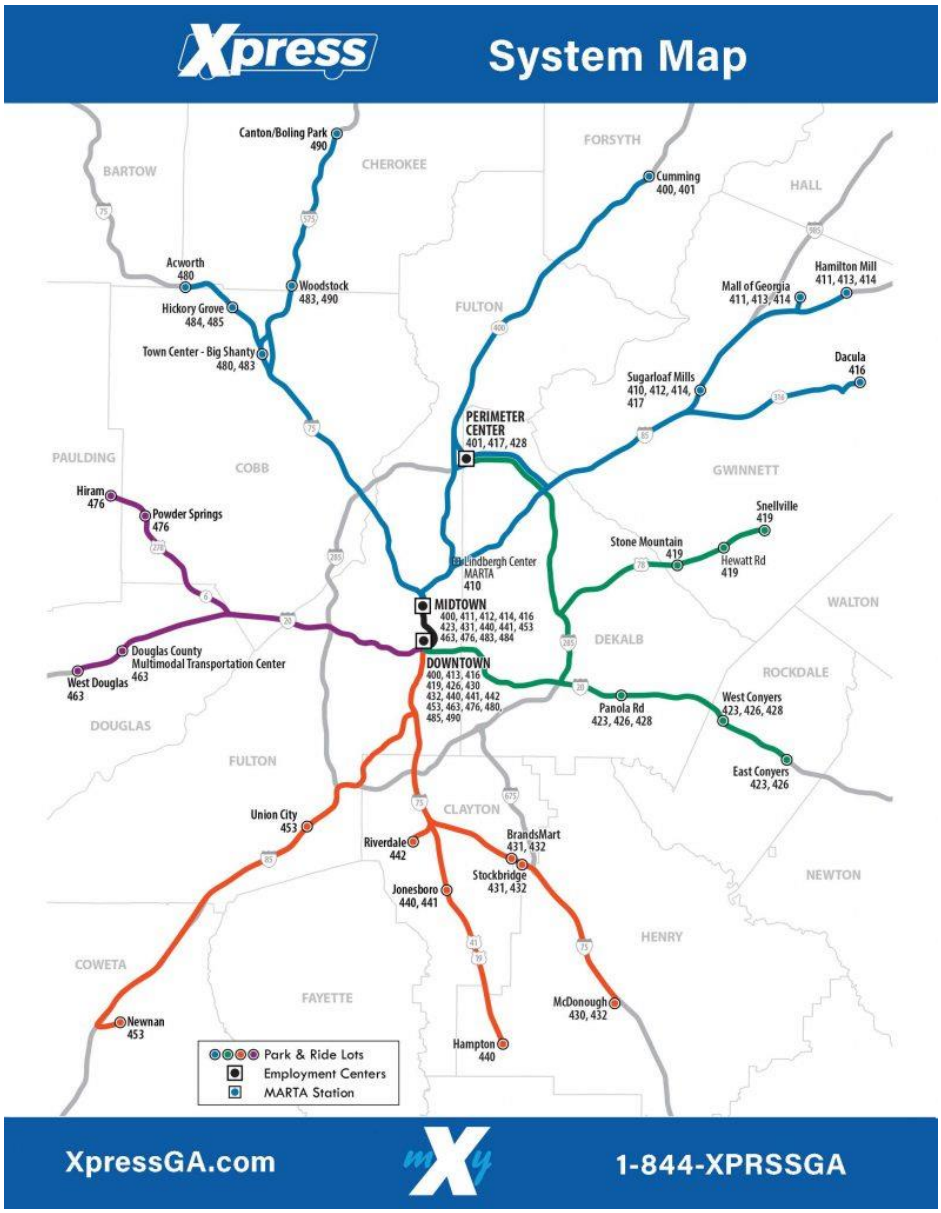
improvements countywide. The strategy includes short-, mid-, and long-range projects. Recommendations call for the county to use the I-85 HOT lane extension project (opened in 2018) when implementing improvements, including transit improvements. The expansion of the HOT lanes along I-85 has already seen an increase in transit usage, and the County expects transit usage to continue to increase over the next 20 years, as shown in the *Destination 2040* plan. The County projects that by 2040, 1.34 million potential SRTA and GCT bus riders will take buses along the I-85 HOT lane corridor per year (based on each bus carrying 80% of capacity in passengers).

Additionally, the County expects 30 million average annual trips on the entire I-85 HOT lane corridor by Year 2040, and 1.35 million additional potential commuters will be able to get to activity/employment centers in Gwinnett County, such as the Gwinnett Place area, by using I-85 HOT lane facilities by Year 2030. The plan notes that there are opportunities for future connections to the Proposed Project corridor between I-75 and I-85, and possibly the I-285 Eastside ELs project between Henderson Road and I-20 to continue to expand transit usage throughout the Metro Atlanta area.

- ***Connect Gwinnett*—**Published in July 2018, *Connect Gwinnett* is a transit plan based on findings in the county's comprehensive transportation plan update, *Destination 2040*. *Connect Gwinnett* focuses on improving "mobility and access for Gwinnett County's residents and businesses." Short-, mid-, and long-range recommendations include new express commuter bus routes. Of note, the plan proposes to add two routes after the Proposed Project is constructed. Route 106 would extend from Peachtree Corners on SR 141 to the Perimeter Center, using I-285 ELs. Similarly, Route 120 would serve the SR 316 corridor, using the I-85 HOT ELs and then the I-285 ELs to serve the Perimeter Center. The County proposes a combination of existing and proposed new Park-and-Ride lots at the route origins.[31]

[31] Gwinnett County, Georgia. 2018. *Connect Gwinnett Transit Plan: Comprehensive Transit Development Plan Recommendations Report*. July. https://www.gwinnettcounty.com/static/departments/transportation/pdf/Connect_Gwinnett_Recommendations_Report_102518.pdf.

EXHIBIT 4-1: EXISTING ATL XPRESS TRANSIT ROUTES AND MARTA STATIONS



4.2.1 Evaluation of Transit Strategies

While improved transit service has the potential to provide some improvements, it does not address the Proposed Project's needs. Therefore, the project team did not carry it forward as a standalone solution. Transit trips are assessed in ARC's Travel Demand Model, the latest version of which uses 2015 data for the base year and 2050 as the horizon year, as discussed in Section 1.3.1.1, Travel Demand. The model indicates that transit accounts for only a small portion of the current (2015) total trips within the study area (1.7%) and future (2050) trips (2.7%) under the No-Build Alternative as compared to personal vehicles, which make up 86% of trips now and in the

future.[32] However, allowing registered public transit operators to use ELs along the Proposed Project corridor toll-free, as identified in transportation plans and studies and in accordance with current State Transportation Board policies, is anticipated to improve transit service, which supports the Proposed Project's ability to improve travel reliability, regional connectivity, and accessibility. ELs improve the reliability of trip time planning which will enable transit users to better plan their trips because there would be less variability in how long their trips would take. ELs would improve travel reliability for transit operators, thereby supporting increased transit ridership on buses and vanpools which use the ELs and enhancing transit riders' accessibility to regional activity centers.

State and regional planning organizations are continuing to plan transit improvements along the Proposed Project corridor. In particular, the MARTA-led Planning Study for high-capacity transit within the I-285 Top End ELs may identify specific transit-only infrastructure improvements for implementation in the future. As such, to ensure transit providers can implement improvements when they are ready to do so, the project improvements would be designed so as not to preclude transit operators from developing their own future projects along the Proposed Project corridor.

4.3 Roadway Improvements

Georgia DOT considered adding lanes to I-285 and if additional lanes could be GP lanes or if they were required to be ML. GP lanes are typical all-purpose lanes that do not require payment of tolls or certain occupancy conditions to use. MLs are lanes for which operational strategies such as tolling or vehicle restrictions are implemented in response to changing conditions such as congestion. Types of MLs include ELs, HOV lanes, and truck-only lanes.

In the mid-2000s, ARC and Georgia DOT, in assessing the need for more reliable travel times along the interstate system in Atlanta, concluded that traditional capacity expansion of roadways attracted new users and ultimately results in a similarly congested transportation system. As such, rather than continue to add new GP lanes, ARC and Georgia DOT proposed a system of ML to meet transportation consumers' demand for reliable travel times. Accordingly, in 2007, the GSTB adopted an MLP.[33] The policy stipulated that new capacity lanes added to limited-access facilities would be MLs instead of the typical all-purpose lanes. Per the MLP, "All new capacity lanes within limited-access corridors in Metro Atlanta shall be managed." Because this project is in the Metro Atlanta area, any new capacity lanes considered for the project are required to be MLs. In 2009, GSTB adopted a resolution that when MLs would be implemented, the preferred approach would be congestion priced ELs. They manage traffic through dynamic pricing by which toll amounts to be paid by passenger vehicles reflect current traffic conditions. Toll amounts are higher during periods of congestion; toll amounts are lower when there is less congestion. To be consistent with the MLP and 2009 GSTB resolution, any lanes added to the Proposed Project corridor must be MLs, specifically ELs, rather than GP lanes.

The project team also considered making the ELs reversible like other recently EL projects by Georgia DOT such as the I-75 NWC ELs. Reversible lanes are useful when commuting is primarily in one direction during peak periods because they alternate directions to accommodate the primary flow of traffic. However, commuting along

[32] Model Summary Output from ARC's Travel Demand Model, Released October 2021 (the latest available) with base year 2015 and horizon year 2050.

[33] Georgia State Transportation Board (GSTB). 2009. *A Resolution by the State Transportation Board.* December 10.

I-285 is bidirectional, and as such, the project team determined that reversible ELs that alternate directions during peak periods were not feasible.

Design year (2057) traffic projections indicate that two new through lanes in each direction would be sufficient to handle anticipated future travel demand. More than two through lanes in each direction would involve unnecessary costs and environmental impacts.

4.3.1 Evaluation of Roadway Improvement Strategies

Adding new through lanes, managed as ELs that could be used by both passenger and transit vehicles, meets all three of the project's needs. Additional through lanes improve travel conditions for all commuters by providing additional capacity to accommodate travel demand and improve traffic flow. ELs in particular, improve the reliability of trip times because they provide an option for commuters to bypass congestion as they are managed using pricing to control the number of passenger vehicles using the lane to keep them flowing. This also provides reliable trip times for public transit services, including buses and vanpools, which in turn has the potential to increase transit ridership. ELs, with improved operations of the facility, improve accessibility to regional activity centers by reducing the time it takes to traverse the system to reach these destinations. Implementing ELs as part of the Proposed Project improves traffic flow between the Proposed Project and adjacent EL systems by minimizing disruptions such as weaving, interchange bottlenecks, and backups that occur when traffic on ELs must merge onto GPs. ELs could improve transit planning and travel options because improved travel reliability has the potential to increase multi-modal options and, in turn, increase ridership for public transit services, including buses and vanpools, which use the ELs. Lastly, adding ELs and employing a Public-Private Partnership (P3) delivery model leverages an alternative funding mechanism (congestion-based pricing) and partners with the private sector to construct the project using innovative delivery methods. These methods allow the project to be included in the region's fiscally constrained transportation plan, which per current federal policy is a prerequisite to the issuance of a NEPA approval.[34]

4.4 Summary of Transportation Investment Strategies to Carry Forward in the Alternatives Development Process

The three Build Alternatives developed in the next alternatives development step include two new lanes in each direction, to be managed as ELs. While the Build Alternatives do not include distinct transit improvements, they were designed to accommodate transit users and, as possible, to not preclude transit service operators from developing their own future projects. The project team incorporated TSM strategies in use along the Proposed Project corridor into the Build Alternatives. TSM strategies in use along the Proposed Project corridor include Georgia NaviGAtor (Georgia DOT's ITS), HERO (Georgia DOT's incident management system), and various TDM techniques including discount transit passes; ride-matching for cars and vanpools; vanpool and carpool subsidies; guaranteed ride home program for carpool, vanpool, and transit users; and personalized commute information.

[34] Federal Highway Administration (FHWA). 2017. *Clarifying Fiscal Constraint Guidance*. May 15. Accessed October 18, 2020. https://www.fhwa.dot.gov/planning/clarify_fiscal_constraint.cfm.

5. Reasonable Range of Alternatives

This section describes the reasonable range of alternatives the project team developed and evaluated for the Proposed Project. The Build Alternatives include improvements between the Proposed Project's logical termini, the I-75 and I-85 system interchanges. Refer to **Draft EIS Section 1.4.1, Connect Logical Termini with Sufficient Length to Address Environmental Matters on a Broad Scope,** for more information on logical termini. While I-75 and I-85 serve as the logical termini, the Proposed Project improvement limits extend to South Atlanta Road on the west and Henderson Road on the east to accommodate related improvements and to provide travelers with the proper decision-making distance and time to connect to existing roadways. Refer to **Section 5.1.2, Express Lane Access Plan,** for more information.

Section 5.1, Planning Framework for Developing the Build Alternatives, describes the factors considered in developing the Build Alternatives. **Section 5.2, Build Alternatives,** describes the Build Alternatives considered to address the Proposed Project's need and purpose.

5.1 Planning Framework for Developing the Build Alternatives

In developing the Build Alternatives, the project team identified access points connecting the ELs to important features along and adjacent to the Proposed Project corridor and evaluated options for the horizontal and vertical locations of the ELs. Development of the Build Alternatives was guided by Georgia DOT and SRTA's *Express Lane Network Implementation and Operation Manual* (ELNIOM).[35]

5.1.1 Express Lane Network Implementation and Operation Manual

Georgia DOT and SRTA developed the ELNIOM in 2018 to guide consistency in EL implementation and operations in the Metro Atlanta area.[36] The project team used the following three connectivity policy recommendations in the ELNIOM in developing the Build Alternatives:

ELNIOM Connectivity Policy Recommendation 1*: EL system-to-system connectivity should be provided to allow the EL customer the opportunity via direct ramps to seamlessly travel through the system of EL facilities.*

Alternatives should provide a direct connection with adjoining EL facilities.

ELNIOM Connectivity Policy Recommendation 2*: EL to GP lane access should be provided, to allow the EL customer the opportunity to exit to the GP lanes prior to the start of the subsequent EL corridor. The EL customer will be informed of the pricing of the subsequent EL corridor and may choose to continue traveling in the next EL corridor or exit to the GP lanes.*

Alternatives should provide connectivity between the ELs and the GP lanes. These provisions would provide the public with the choice to use or not use ELs. The project team identified five locations along I-285 to include in the Build Alternatives to provide direct EL to GP lane connectivity between EL segments:

[35] Georgia Department of Transportation (Georgia DOT) and State Road and Tollway Authority (SRTA). 2018. *Express Lane Network Implementation and Operation Manual*.

[36] Georgia Department of Transportation (Georgia DOT) and State Road and Tollway Authority (SRTA). 2018. *Express Lane Network Implementation and Operation Manual.*

- Eastbound and westbound access to I-285 GP lanes west of I-75
- Eastbound and westbound access to I-75 GP lanes
- Eastbound and westbound access to SR 400 GP lanes
- Eastbound and westbound access to I-85 GP lanes
- Eastbound and westbound access to I-285 GP lanes east of I-85

ELNIOM Connectivity Policy Recommendation 3*: As each EL corridor is constructed and open for operation, interim access to GP lanes will be maintained and provided for as part of any final EL facility configuration.*

Alternatives should provide connectivity between GP lanes and adjoining EL systems when new EL systems are added. Access points to maintain are the termini of each of the existing and proposed EL segments.

5.1.2 Express Lane Access Plan

Consistent with the connectivity policy recommendations in the ELNIOM, the project team identified access points along the Proposed Project corridor. The access points provide connections between the ELs and adjoining EL facilities, the GP lanes, and major regional activity centers along the Proposed Project corridor.

- EL system interchanges provide connectivity between ELs on adjoining facilities. These locations provide the opportunity for EL users on one facility to directly transition to ELs on an adjoining EL facility.
- Direct merge locations provide connectivity between the ELs and the GP lanes. These are locations that provide options to motorists for switching between ELs and GP lanes as they travel along the EL system, provide motorists with the option to switch lane types prior to transitioning to the next EL system, or where motorists enter or exit the ELs at the beginning/end of the EL facility.
- Direct access locations provide connectivity from ELs to major regional activity centers. As improving regional connectivity and accessibility to major regional activity centers is a project need, the project team proposes direct access locations near major regional activity centers.[37]

The EL system interchanges, direct merge locations, and direct access locations to be considered in the Build Alternatives are described in **Exhibit 5-1** and shown in **Exhibit 5-2**.

Proposed access locations in combination with existing I-285 top end corridor features influence the Proposed Project improvement limits. While I-75 and I-85 are the logical termini for the Proposed Project, several factors require improvements further west and east of the I-75 and I-85 interchanges. To the west, improvement limits extend approximately 2.8 miles west of I-75 to South Atlanta Road, accommodating the proposed direct access location at Cumberland Boulevard and providing travelers with the proper decision-making distance and time to transition back to existing I-285 GP lanes. The configuration of this transition area considered minimization of environmental impacts (potential impacts to environmental resources and retail, office, residential properties) as well as of impacts to existing I-285 bridge crossings (CSX Railroad, two pedestrian bridge crossings, Paces Ferry Road, Mt. Wilkinson Parkway, and Cumberland Boulevard). To the east, improvement limits extend approximately 1.7 miles east of I-85 to Henderson Road, providing travelers with the proper decision-making

[37] For a more detailed discussion of the travel demand for access to major regional activity centers, refer to **Appendix H-4, Transportation Systems Report.**

distance and time to transition back to existing I-285 GP lanes. The configuration of this transition area considered minimization of environmental impacts as well as of impacts to an existing I-285 bridge crossing (Chamblee Tucker Road).

EXHIBIT 5-1: EXPRESS LANE ACCESS POINT SUMMARY TABLE

Access Point Type	Access Point Location	Access Provided
EL System Interchange		
	I-285/NWC interchange	Between I-285 ELs and NWC ELs
	I-285/SR 400 interchange	Between I-285 ELs and SR 400 ELs
	I-285/I-85 interchange	Between I-285 ELs and I-85 HOT lanes
Direct Merge		
	I-75/I-285 interchange	Between the I-285 GP lanes and I-285 ELs
	Raider Drive	Between the I-285 GP lanes and I-285 ELs within the I-285 EL facility and before transitioning to the adjacent EL systems
	North Shallowford Road	Between the I-285 GP lanes and I-285 ELs within the I-285 EL facility and before transitioning to the adjacent EL systems
	Henderson Road (Terminal Ramps)	Between the I-285 ELs and adjoining existing GP lanes at the eastern end of the I-285 EL facility
	North of South Atlanta Road (Terminal Ramps)	Between the I-285 ELs and adjoining existing GP lanes at the western end of the I-285 EL facility
	SR 400/I-285 interchange (Terminal Ramps)	Between the SR 400 ELs and adjoining existing GP lanes at the southern end of the SR 400 EL facility
Direct Access		
	Cumberland Boulevard (I-285)	Between I-285 and I-75 ELs and the Home Depot Support Center on Paces Ferry Road, the Cumberland CID, and the Cumberland Mall
	Johnson Ferry Road (SR 400)	Between SR 400 ELs and the Northside Hospital area
	Mt. Vernon Highway (SR 400)	From the Sandy Springs area to the EL network north of the I-285/SR 400 interchange and between the EL network and the northern end of the Perimeter CID
	Perimeter Center Parkway (I-285)	Between I-285 ELs and the Perimeter CID
	North Shallowford Road (I-285)	Between I-285 ELs and the Chamblee Dunwoody CID
	Flowers Road (I-285)	From the Doraville area to westbound I-285 ELs and from the eastbound I-285 ELs to the Doraville area
	New Peachtree Road (I-285)	From the Doraville area to eastbound I-285 ELs and from the westbound I-285 ELs to the Doraville area

CID = Community Improvement District

EXHIBIT 5-2: EXPRESS LANE ACCESS POINTS AND MAJOR REGIONAL ACTIVITY CENTERS[38]

5.1.3 Horizontal and Vertical Locations of the Express Lanes

The project team considered options for the horizontal and vertical location of the ELs included in the Build Alternatives. The project team evaluated the typical sections based on their general design feasibility and practicability, comparative environmental and socioeconomic impacts, and comparative cost. Avoidance of impacts to the National Park Service's (NPS') Chattahoochee River National Recreation Area (CRNRA) was one of the most critical environmental evaluation factors. Under Section 4(f) of the U.S. Department of Transportation Act of 1966, there must be no feasible and prudent alternative in order to justify an adverse impact or "take" to a public recreation area such as the CRNRA. Therefore, the project team ranked typical sections requiring a use of the CRNRA relatively low because of the significance of the environmental impacts.

The evaluation was qualitative, with typical sections ranked from "least desirable" to "most desirable" for each evaluation category (**Exhibit 5-3**).

[38] Direct Merge Locations differ amongst Build Alternatives. Refer to **Sections 5.2.1.2, 5.2.2.2,** and **5.2.3.2** for direct merge locations in Build Alternatives 1, 2 and 3, respectively.

EXHIBIT 5-3: TYPICAL SECTION ASSESSMENT RUBRIC

Score	Least Desirable				Most Desirable
Sub-Criteria	**Low**	**Medium-Low**	**Medium**	**Medium-High**	**High**
Environmental Impacts	Adverse effects on recreational area avoided by other alternatives.	Recreational area impacts, severe community resource displacements.	Recreational area impacts, moderate community resource displacements.	Recreational area impacts, minor community resource impacts.	Minor recreational area impacts, minor community resource impacts or avoidance.
ROW Footprint	Most impactful footprint, displacement of significant portion of parcels along the corridor.	Requires additional ROW, requires some displacements.	Requires minimal additional ROW, requires some displacements.	Requires minimal additional ROW, requires no displacements.	Requires no additional ROW beyond the existing ROW.
Maintenance of Traffic	Most complex construction staging plan and significant impact to active traffic, requires multiple construction stages and shifts in traffic patterns.	Requires several traffic shifts, short-term closures, and/or detours along portions of the corridor.	Requires fewer traffic shifts, short-term closures, and/or detours along portions of the corridor.	Requires temporary detours and/or short-term closures at spot locations along the corridor.	Construction minimally affects active adjacent traffic.
Impacts to Existing Infrastructure	Requires complete reconstruction of the existing interstate corridor—including GP mainline and ramps.	Requires reconstruction of significant portions of the corridor, including the full width of the GP mainline and ramps.	Requires reconstruction of a few GP lanes and/or ramps along portions of the corridor.	Requires reconstruction of a few GP lanes and/or ramps at spot locations along the corridor.	Requires minimal reconstruction of existing infrastructure, limited to minor modifications to existing sideroads to construct tie-ins for proposed EL access points.
Future Infrastructure Improvement Accommodation	Requires complete future reconstruction of proposed ELs and related GP improvements.	Requires future reconstruction of proposed ELs, including elevated and non-elevated segments, along significant portions of the corridor.	Requires future reconstruction of proposed ELs, including elevated and non-elevated segments, in spot locations along the corridor.	Requires future reconstruction of proposed ELs, limited to non-elevated roadway segments, in spot locations along the corridor.	Requires minimal future reconstruction of proposed ELs, limited to minor modifications to non-elevated roadway segments.
Future Transit Compatibility	Requires significant reconstruction of the proposed ELs and GP facilities to accommodate potential future transit.	Requires reconstruction of portions of the proposed ELs and GP facilities to accommodate potential future transit.	Requires partial reconstruction of the proposed ELs and GP lanes to accommodate potential future transit.	Requires partial reconstruction of the proposed ELs to accommodate potential future transit.	Provides most flexible option to accommodate potential future transit without requiring significant reconstruction of proposed ELs.
Cost	Most expensive alternative.	More expensive than the median cost of all alternatives.	Median cost of all alternatives.	Less expensive than the median cost of all alternatives.	Least expensive alternative.

The project team scored each of the 12 typical sections from low to high based on the evaluation summarized in **Exhibit 5-4**.

EXHIBIT 5-4: TYPICAL SECTION SCORING MATRIX

Typical Section	Practicability of Design	Environmental Impacts	ROW Footprint	Maintenance of Traffic	Impacts to Existing Infrastructure	Future Infrastructure Improvement Accommodation	Future Transit Accommodation	Cost
A) Inside + Elevated	Medium	Medium	Medium	Medium-Low	Medium	High	Medium	Medium
B) Inside + At-Grade	Medium-High	Medium	Low	Medium-Low	Low	Medium-High	Low	Medium-High
C) Inside + Double Decked	Low	Medium-High	Medium	Medium-Low	Medium-Low	Medium-High	Medium-Low	Medium
D) Outside + Elevated	High	Medium	Medium	Medium	Medium-High	Medium-Low	Medium-High	Medium
E) Outside + At-Grade	High	Medium	Medium-Low	Medium	Medium-High	Low	High	Medium-High
F) Both on Left[a] Side + Elevated	Medium	Low	Medium	Medium-High	Medium-High	Medium	Medium-High	Medium-Low
G) Both on Left[a] Side + At-Grade	Medium	Low	Medium-Low	Medium-High	Medium-High	Medium	High	Medium-Low
H) Both on Left[a] Side + Double Decked	Low	Medium	Medium	Medium-High	Medium-High	Medium	Medium	Medium
I) Both on Right Side + Elevated	Medium	Low	Medium	Medium-High	Medium-High	Medium	Medium-High	Medium-Low
J) Both on Right Side + At- Grade	Medium	Low	Medium-Low	Medium-High	Medium-High	Medium	High	Medium-Low
K) Both on Right Side + Double Decked	Low	Medium	Medium	Medium-High	Medium-High	Medium	Medium	Medium
L) Straddle I-285 + Double Decked	Low	Medium-High	Medium-High	Low	Medium	Low	Medium	Low

[a] Left side based on the view from the west facing east (right side based on opposite direction).

Nine typical sections performed low with these criteria, with a combination of severe impacts to CRNRA, high environmental impacts, and/or complex construction staging. The project team eliminated those nine typical sections and carried forward Typical Sections B, D, and E for further analysis (**Exhibit 5-5**).

EXHIBIT 5-5: EXPRESS LANE TYPICAL SECTION EVALUATION SUMMARY TABLE

Typical Section	Evaluation Results	Recommendation
A) Inside + Elevated	Reconstruction of GP lanes with widening on outside required to accommodate column piers. Complex staging plan with partial construction over existing GP lanes. Large amount of ROW required. Moderate level of environmental impacts. Impacts to existing infrastructure. Relatively high cost of construction compared to Typical Section B, including GP lanes and elevated ELs.	Eliminate
B) Inside + At-Grade	Consistent with EL location on adjacent proposed Eastside and Westside ELs. Large amount of ROW required within Top End with GP lanes widened to outside. Reconstruction of GP lanes, bridges and interchanges required. Moderate level of environmental impacts. Would likely require physical impacts to the CRNRA. Less favorable option for future transit by others.	Advanced for Further Study
C) Inside + Double Decked	Requires reconstruction of GP lanes to elevate them in the median. Large amounts of ROW required. Higher level of environmental impacts. Impacts to existing infrastructure. Relatively high cost of construction, among highest with Typical Section H, Typical Section K, and Typical Section L.	Eliminate
D) Outside + Elevated	Minimal reconstruction of GP lanes required. Minimal ROW required. Lower environmental impacts compared to ELs on one side. Favorable option for future transit by others. Relatively lower impacts to existing infrastructure compared to inside ELs with Typical Section A, Typical Section B, and Typical Section C. Would likely avoid physical impacts to the CRNRA.	Advanced for Further Study
E) Outside + At-Grade	Moderate amount of reconstruction of GP lanes, bridges and interchanges required. Would require more ROW than Typical Section D. Favorable option for future transit by others. Moderate levels of environmental impacts. Would require physical impacts to the CRNRA.	Advanced for Further Study
F) Both on Left Side[a] + Elevated	Would require physical impacts to the CRNRA. Increased ROW and neighborhood impacts compared to ELs on both sides where more existing ROW can be used.	Eliminate
G) Both on Left[a] Side + At-Grade	Would require physical impacts to the CRNRA. Favorable option for future transit by others. Increased ROW and neighborhood impacts compared to ELs on both sides where more existing ROW can be used. Increased environmental impacts along left side compared to ELs on both sides where more existing ROW can be used.	Eliminate
H) Both on Left Side[a] + Double Decked	Difficulty in construction due to required connections from elevated structures to at-grade roadway network. Relatively high cost of construction along with Typical Section C, Typical Section K, and Typical Section L with double decking.	Eliminate
I) Both on Right Side[a] + Elevated	Would require physical impacts to neighborhoods, environmental justice communities, and historic resources. Increased overall environmental impacts along right side compared to ELs on both sides where more existing ROW can be used.	Eliminate
J) Both on Right Side[a] + At- Grade	Would require physical impacts to neighborhoods, environmental justice communities, and historic resources. Favorable option for future transit by others. Increased environmental impacts along right side compared to ELs on both sides where more existing ROW can be used.	Eliminate
K) Both on Right Side[a] + Double Decked	Difficulty in construction due to required connections from elevated structures to at-grade roadway network. Relatively high cost of construction along with Typical Section C, Typical Section H, and Typical Section L with double decking.	Eliminate
L) Straddle I-285 + Double Decked	Design is impractical with complex construction staging plan. Complete reconstruction required to accommodate future infrastructure. Highest cost.	Eliminate

Source: Information based on Project Environmental and Design Coordination, 2019–2020.
[a] Based on view traveling eastbound on I-285 within the Proposed Project corridor

5.2 Build Alternatives

The project team carried forward Typical Sections B, D, and E based on their design feasibility and practicability as well as their comparatively lesser impacts and costs. No single typical section would provide an end-to-end project alignment that is practicable in terms of cost and environmental impacts. Rather, the project team designed the Build Alternatives for consideration using a combination of the three typical sections. Each Build Alternative proposed consists of a "strategy": a single typical section that would be utilized at all possible areas. Each of the following Build Alternatives is named for the primary typical section/strategy used. The three Build Alternatives include:

- At-Grade, Outside (Build Alternative 1)
- Elevated, Outside (Build Alternative 2)
- At-Grade, Inside (Build Alternative 3)

Georgia DOT presented Build Alternatives 1 and 2 at a series of PIOH meetings in January 2020 to obtain feedback from the public and answer any questions (refer to **Draft EIS Chapter 5, Consultation and Coordination**, for additional information on the series of January 2020 PIOH meetings). The project team developed Build Alternative 3 after the PIOH meetings to respond to USACE's request for consideration of a third Build Alternative during the PAR process in early 2020 (refer to **Appendix F-G, Practicable Alternatives Review Report** for further information on the PAR process).[39]

The roadway improvements included in the three Build Alternatives are described in the following sections. As described in **Section 4.1.1**, **Evaluation of Transportation System Management Strategies,** TSM strategies currently in use in the Proposed Project corridor would continue to be implemented; for example, ITS through Georgia DOT's NaviGAtor program, incident management through Georgia DOT's HERO program, and TDM strategies such as facilitating vanpools and carpools. Additionally, as described in **Section 4.2.1, Evaluation of Transit Strategies,** the Proposed Project does not include a dedicated transit component.[40] However, public transit operators will continue to be able to use the I-285 top end corridor and would be allowed to access the ELs toll-free. Additionally, the Proposed Project would, where possible, not preclude transit operators from developing their own future projects.

5.2.1 Build Alternative 1 (At-Grade, Outside)

5.2.1.1 Build Alternative 1 Mainline Improvements

Build Alternative 1 consists of widening to add two ELs in each direction with shoulders along I-285 primarily to the outside of the existing GP lanes and at-grade (**Exhibit 5-6, Exhibit 5-7,** and **Exhibit 5-8**). Along SR 400, Build Alternative 1 provides one lane in each direction from the Glenridge Connector to the I-285/SR 400 Interchange. From the I-285/SR 400 interchange to the North Springs MARTA Station, the Build Alternatives provide two ELs in each direction. ELs and GP lanes along at-grade sections throughout Build Alternative 1 are separated by concrete barriers except where the Proposed Project transitions to the adjacent roadway system.

[39] In February 2022, Georgia DOT revised the configuration and timing of the proposed adjoining I-285 Eastside EL and I-285 Westside EL projects as elements of the refined MMIP program. Related refinements to the Proposed Project's Build Alternatives were reviewed to validate findings of USACE's PAR process. For additional information refer to **Appendix F-G, Practicable Alternatives Review**.

[40] A dedicated transit facility could be a BRT—or Light Rail Transit—specific infrastructure or lane(s).

Build Alternative 1 also includes the addition of westbound CD lanes between Peachtree Industrial Boulevard and North Peachtree Road to eliminate existing weaving along the GP lanes.

EXHIBIT 5-6: BUILD ALTERNATIVE 1 – PRIMARY I-285 TYPICAL SECTION

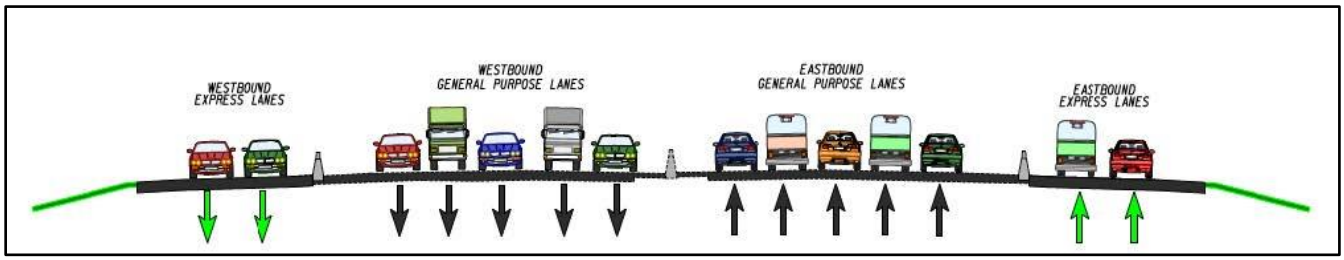


EXHIBIT 5-7: BUILD ALTERNATIVE 1 RENDERING

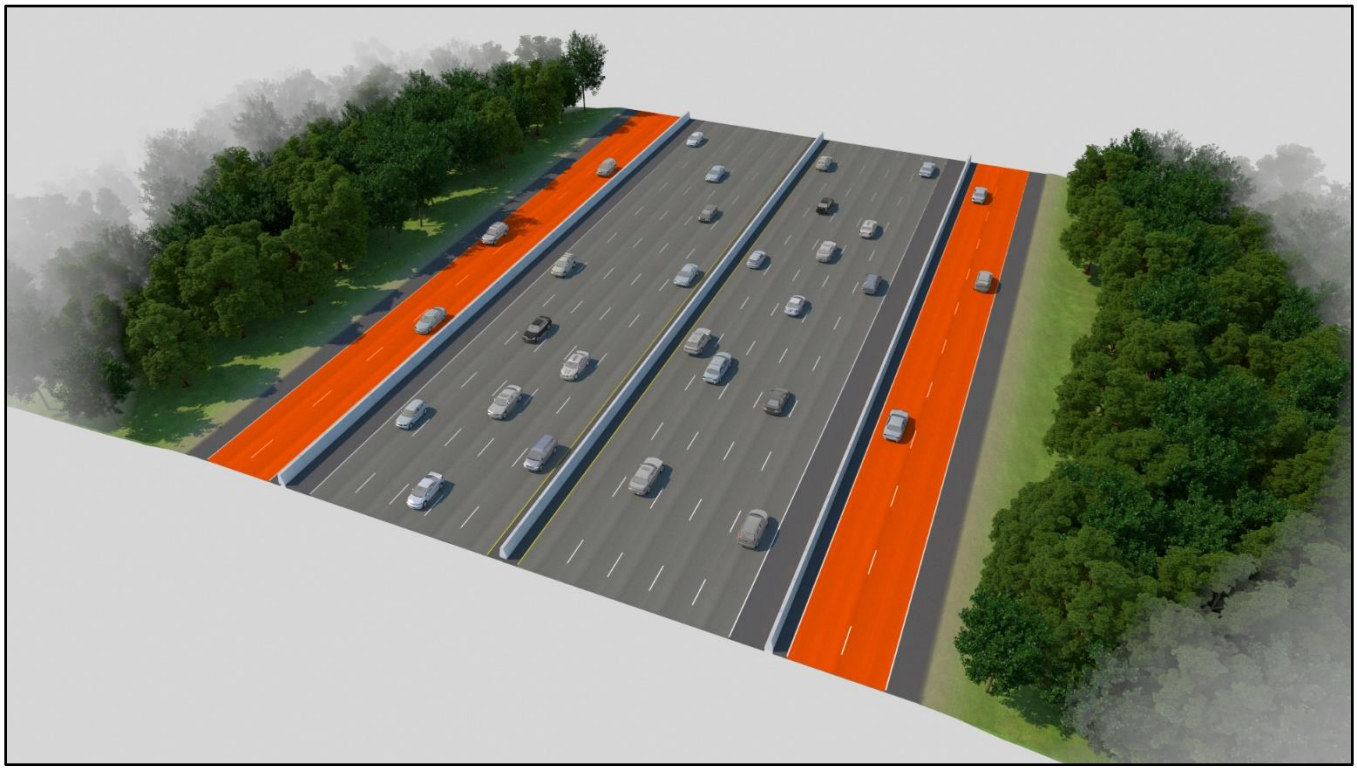
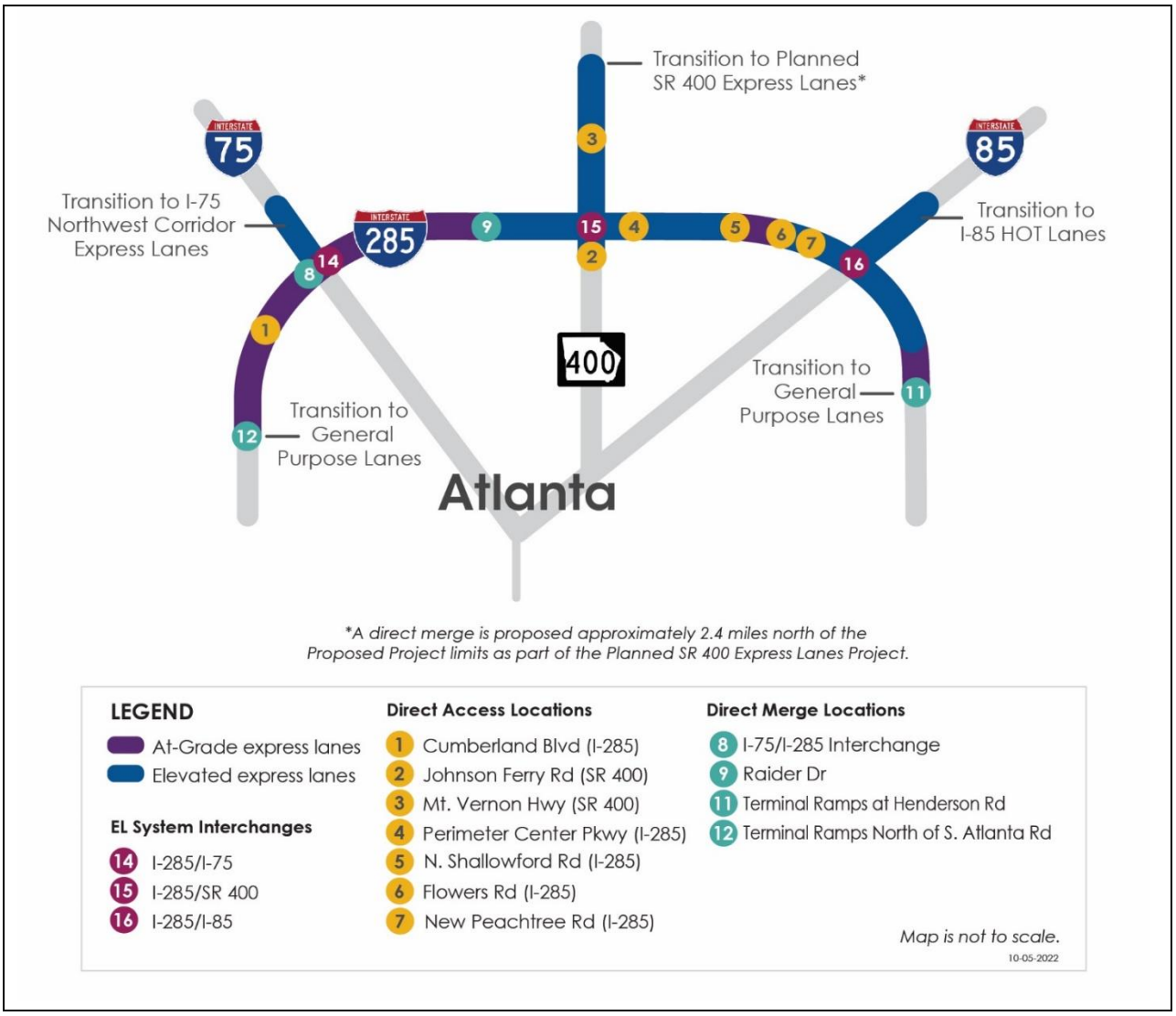


EXHIBIT 5-8: BUILD ALTERNATIVE 1



5.2.1.2 Build Alternative 1 Express Lane Access

EL System Interchanges. Build Alternative 1 would provide connectivity between I-285 ELs and ELs on all three adjoining EL systems: NWC, SR 400, and I-85. These locations are described further in **Section 5.1.2, Express Lane Access Plan,** and shown in **Exhibit 5-2** and **Exhibit 5-8**. To connect to the NWC ELs, Build Alternative 1 would construct an at-grade reversible EL on the inside of I-285 GP lanes and reconstruct the existing direct ramps to connect the I-285 ELs to the existing NWC ELs. However, in doing so, motorists traveling from NWC ELs to I-285 ELs would no longer be able to access Paces Ferry Road, as there would be an insufficient distance for drivers in the ELs, which would be inside the GPs for this portion of Build Alternative 1 from South Atlanta Road to Raider Drive, to weave across the GP lanes from the median to exit at Paces Ferry Road. As a result, commuters would no longer be able to continue to use this route to access a major employer, the Home Depot Support Center.

In order to connect with the SR 400 ELs, Build Alternative 1 includes elevated ELs on the outside of the GP lanes in the vicinity of the SR 400 interchange. In order to connect with the existing I-85 HOT ELs, Build Alternative 1 includes elevated ELs on the inside of I-85 GP lanes where they transition to the at-grade HOT ELs.

Direct Merge Locations. Build Alternative 1 would provide direct merges between ELs and GP lanes in four of the six locations included in the express lane access plan described in **Section 5.1.2, Express Lane Access Plan**: I-285/I-75 Interchange, Raider Drive, Henderson Road, and north of South Atlanta Road (refer to **Exhibit 5-8**). The direct merges under the I-285/I-75 interchange and at Raider Drive provide motorists the ability to switch between ELs and GP lanes as they travel along I-285. Additionally, the direct merge at Raider Drive allows motorists the ability to transition between ELs and GP lanes before entering adjacent EL systems. The direct merges at Henderson Road and north of South Atlanta Road provide motorists the opportunity to transition between the I-285 ELs and adjoining existing GP lanes.

Build Alternative 1 does not include a direct merge at the SR 400 Terminal Ramps and no direct merge between the ELs and GP lanes along I-285 would be provided between SR 400 and I-85 because of conflict between the slip ramp that would be needed to provide a direct merge and the at-grade construction of the ELs. For users who are traveling from one facility to another (e.g., I-285 to SR 400), this eliminates the ability of a traveler to choose to exit the EL prior to the start of a subsequent EL corridor. This is inconsistent with the ELNIOM recommended practice that connectivity be provided between ELs and the GP lanes so that the public has a choice to use or not use ELs when they make a connection to a new EL corridor (refer to **Section 5.1.1** for additional information on the ELNIOM recommendations). However, other direct merge locations under Build Alternative 1 are consistent with the ELNIOM recommendations.

Direct Access Locations. Build Alternative 1 would provide direct access to all major regional activity centers along the Proposed Project corridor. These are described further in **Section 5.1.2, Express Lane Access Plan**, and shown in **Exhibit 5-2** and **Exhibit 5-8**:

- **I-285 at Cumberland Boulevard**: A north-facing half-diamond interchange would connect Cumberland Boulevard to the proposed I-285 ELs in both the eastbound and westbound directions. This would provide connectivity from the EL systems on I-285 and I-75 to the Home Depot Support Center on Paces Ferry Road and the Cumberland CID.
- **SR 400 at Mt. Vernon Highway:** A full-access EL interchange would connect Mt. Vernon Highway to the SR 400 ELs in both the northbound and southbound directions.
- **SR 400 at Johnson Ferry Road:** A north-facing half-diamond interchange would connect Johnson Ferry Road to the SR 400 ELs in both the northbound and southbound directions.
- **I-285 at Perimeter Center Parkway**: A full-diamond interchange would connect Perimeter Center Parkway to the proposed I-285 ELs in both the eastbound and westbound directions.
- **I-285 at North Shallowford Road**: A full-diamond interchange would connect North Shallowford Road to the proposed I-285 ELs in both the eastbound and westbound directions.
- **I-285 at Flowers Road Extension**: A west-facing half-diamond interchange would connect Flowers Road to the proposed I-285 ELs in both the eastbound and westbound directions.
- **I-285 at New Peachtree Road**: An east-facing half-diamond interchange would connect New Peachtree Road to the proposed I-285 ELs in both the eastbound and westbound directions.

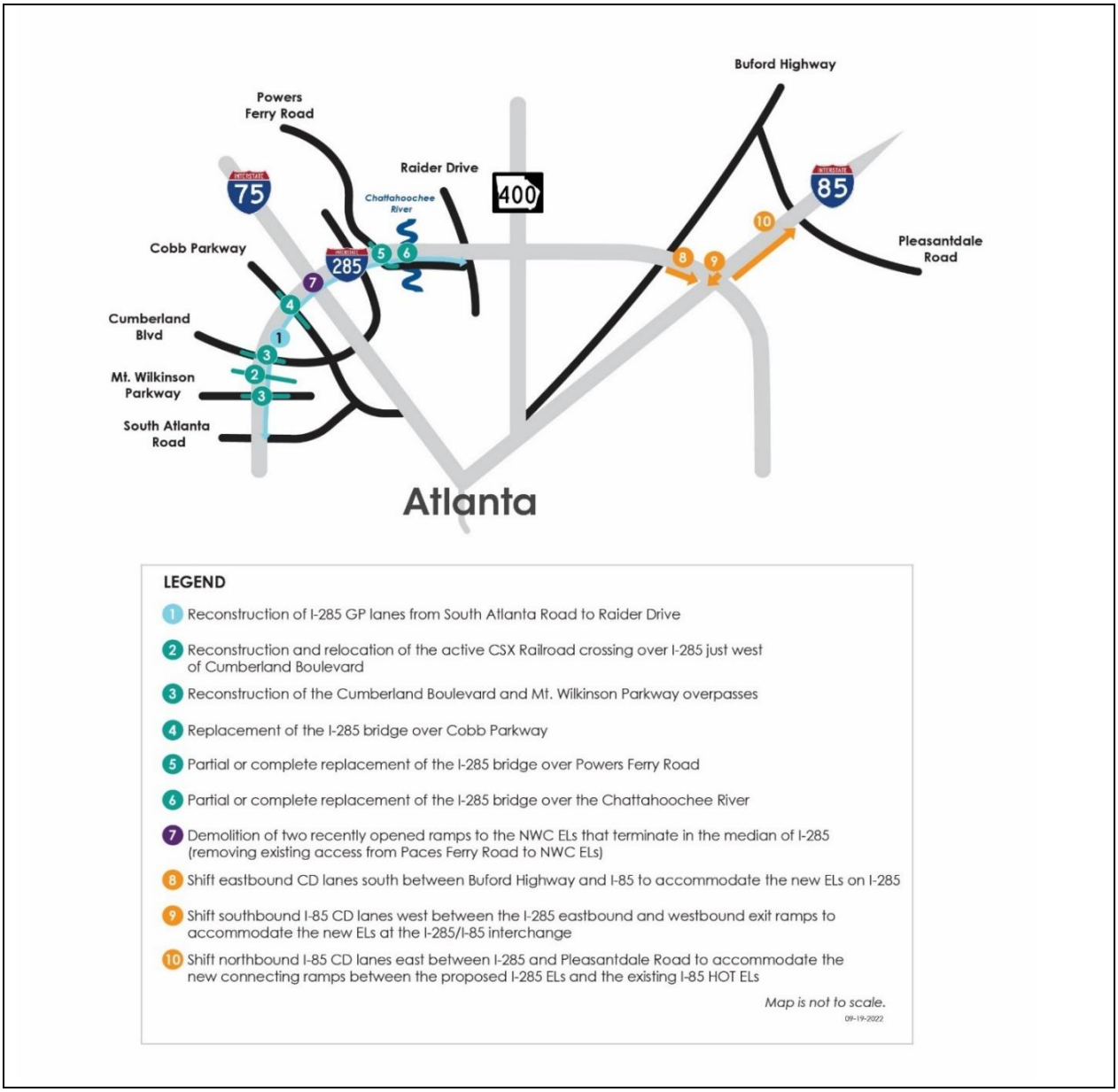
5.2.1.3 Additional Features of Build Alternative 1

Build Alternative 1 would also include the following modifications to roadways and bridges (**Exhibit 5-9**):

- Reconstruction of I-285 GP lanes from north of South Atlanta Road to Raider Drive
- Reconstruction and relocation of the active CSX Railroad crossing over I-285 just west of Cumberland Boulevard
- Reconstruction of the Cumberland Boulevard and Mt. Wilkinson Parkway overpasses
- Replacement of the I-285 bridge over Cobb Parkway
- Partial or complete replacement of the I-285 bridge over Powers Ferry Road
- Partial or complete replacement of the I-285 bridge over the Chattahoochee River
- Demolition of two recently opened ramps to the NWC ELs which terminate in the median of I-285 (removing existing access from Paces Ferry Road to NWC)
- Shift eastbound CD lanes south between Buford Highway and I-85 to accommodate the new ELs on I-285
- Shift southbound I-85 CD lanes west between the I-285 eastbound and westbound exit ramps to accommodate the new ELs at the I-285/I-85 interchange
- Shift northbound I-85 CD lanes east between I-285 and Pleasantdale Road to accommodate the new connecting ramps between the proposed I-285 ELs and the existing I-85 HOT ELs

The I-285 bridges over the Chattahoochee River and Powers Ferry Road would need to be partially or completely replaced to accommodate the addition of four ELs, which would be located between the I-285 GP lanes and Powers Ferry Road to the south and Interstate North Parkway to the north under Build Alternative 1. This would require temporary detour bridges over the Chattahoochee River and construction staging to maintain traffic during reconstruction of GP lanes. Partially or completely replacing the Chattahoochee River Bridge greatly increases the construction duration, with associated delays and inconvenience to both the traveling public and to users of the recreational resource.

EXHIBIT 5-9: MODIFICATIONS TO EXISTING ROADWAYS AND BRIDGES TO ACCOMMODATE BUILD ALTERNATIVE 1



5.2.2 Build Alternative 2 (Elevated, Outside)

5.2.2.1 Build Alternative 2 Mainline Improvements

Build Alternative 2 consists of constructing two ELs in each direction along I-285 to the outside of the existing GP lanes on elevated structures (**Exhibit 5-10, Exhibit 5-11,** and **Exhibit 5-12**). Alternative 2 provides the same mainline improvements to SR 400 and separation between ELs and GP lanes as Build Alternative 1 (refer to **Section 5.2.1.1, Build Alternative Mainline Improvements**). Build Alternative 2 also includes the addition of westbound CD lanes between Peachtree Industrial Boulevard and North Peachtree Road to eliminate existing weaving along the GP lanes.

EXHIBIT 5-10: BUILD ALTERNATIVE 2 – PRIMARY I-285 TYPICAL SECTION

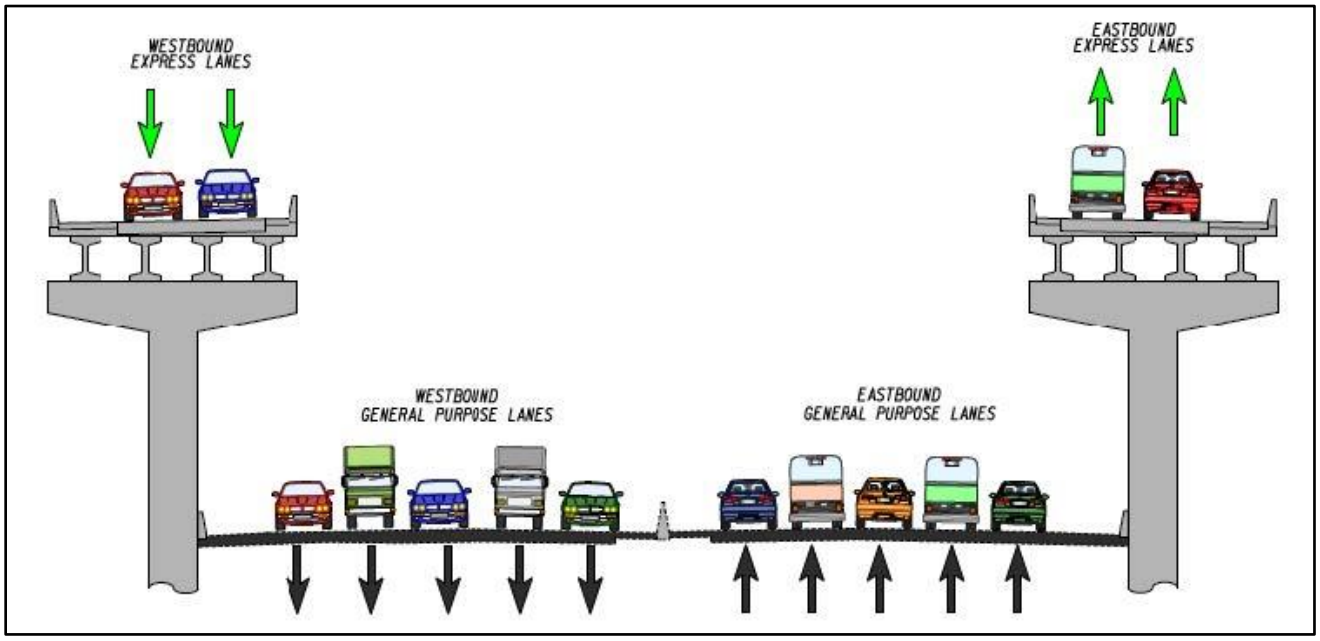


EXHIBIT 5-11: BUILD ALTERNATIVE 2 RENDERING

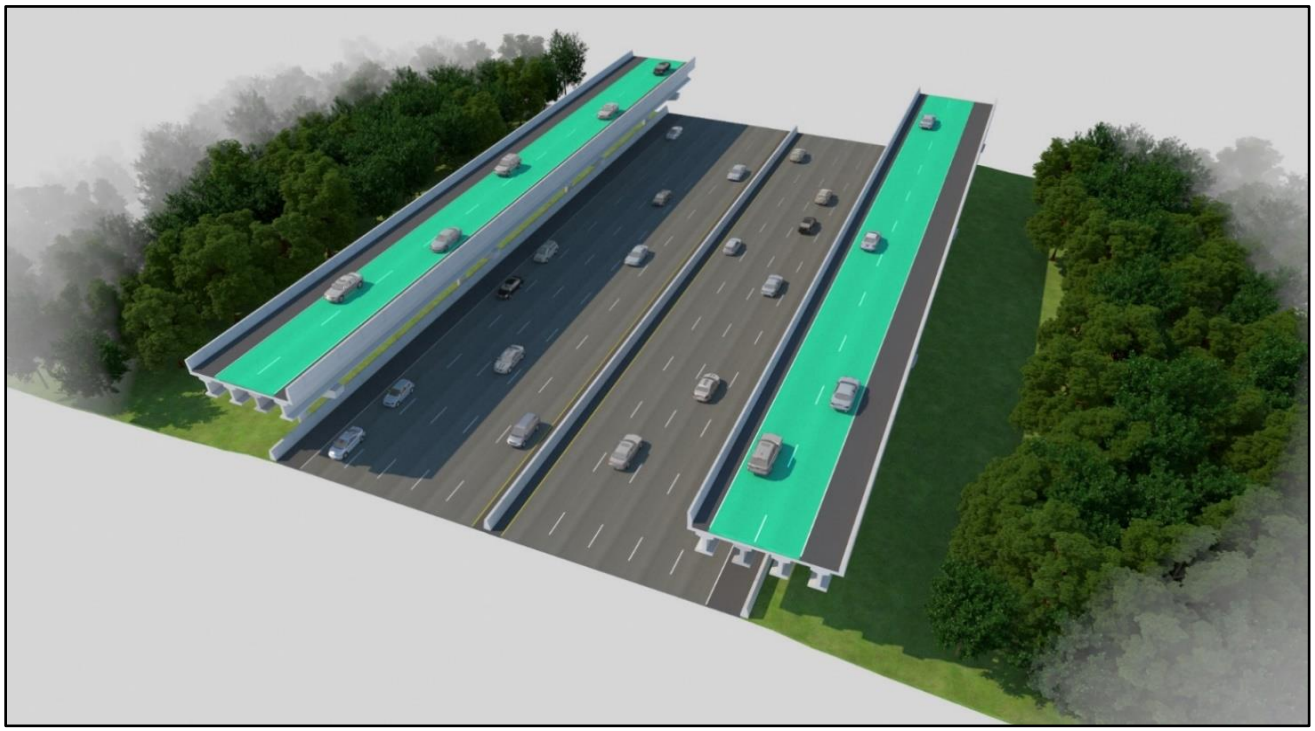
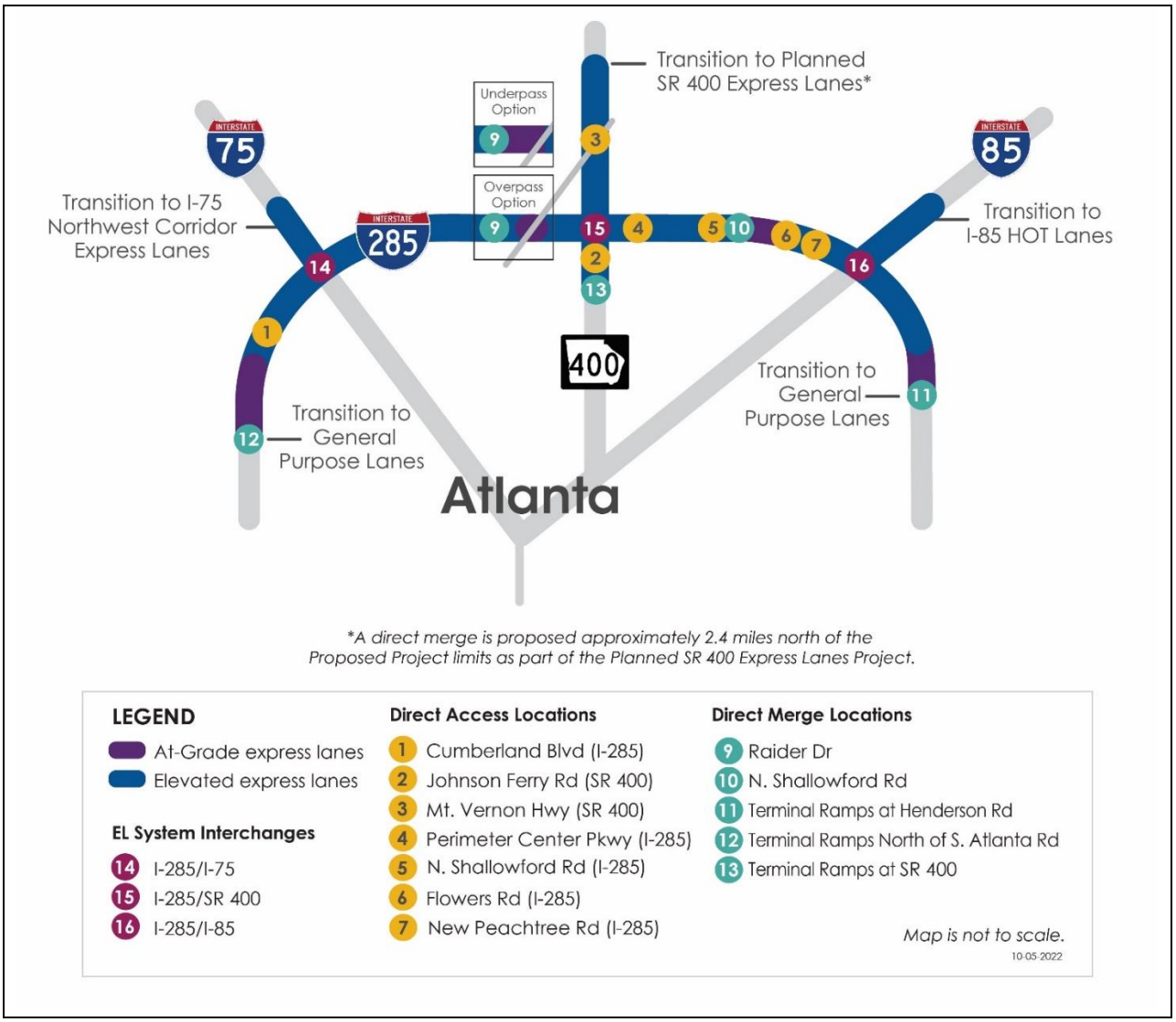


EXHIBIT 5-12: BUILD ALTERNATIVE 2



Overpass and Underpass Options. Through Public Information Requests and comments following the January 2020 PIOH meetings, Project stakeholders and residents of neighborhoods adjacent to the Proposed Project corridor expressed concerns with the elevated lane configuration for the proposed ELs between Raider Drive and Riverside Drive. Fulton County Schools cited concerns with a loss of the visual and security buffer at Riverwood International Charter School, the proximity of the proposed ELs to their recreational facilities, and the amount of ROW needed from the school. Residents of the Wesley Oaks, Fair Oaks, and Coldstream Court neighborhoods provided comments citing various concerns with the elevated lane configuration between Raider Drive and Riverside Drive. Comments from these residents included concerns with safety, visual impacts, noise impacts, ROW acquisition, and negative impacts to property values. At the PIOH meetings, residents expressed interest in Georgia DOT replacing the Raider Drive and Riverside Drive bridges. Elevated ELs in the area would not require the replacement of these bridges, whereas ELs constructed at or near the existing grade of the I-285 GP lanes would require replacement of both bridges. In response, Georgia DOT developed and evaluated two design treatment options for Build Alternative 2 at this location, referred to as the Overpass Option and the Underpass Option (**Exhibit 5-12**).

The Overpass Option includes elevated ELs in this section as shown in Alternative 2 at the PIOH meetings. Three existing overpasses over I-285 are in this section: at Raider Drive Bridge, Riverside Drive Roundabout Interchange, and Mt. Vernon Bridge. With the Overpass Option, the ELs would be elevated to pass over Raider Drive and Riverside Drive then transition to at-grade under the Mt. Vernon Bridge.

The Underpass Option includes ELs beginning above grade on retaining walls approaching the Raider Drive Bridge, which drop to at-grade relative to the GP lanes, finally transitioning to below grade, using retaining walls, to east of the Riverside Drive Interchange. The Raider Drive and Riverside Drive bridges would be reconstructed and lengthened to accommodate the width of the ELs. With the Underpass Option, the ELs would be constructed at or below the grade of the existing GP lanes and would pass beneath the Raider Drive and Riverside Drive bridges.

These two design treatment options would have no differences in traffic performance, as they would have common EL direct merge locations and local access points.

The project team performed a comparative evaluation of localized environmental impacts and implementation considerations. The socioeconomic and environmental resource considerations were focused on conditions that could be affected by one or both of the options and included impacts to wetlands, streams, Section 106 historic resources, residential properties, aesthetics, and traffic noise. The project team also considered impacts to existing infrastructure and disruptions during construction that could be required for either or both of the options to provide additional metrics for comparing the top options. The project team concluded that the Underpass Option would result in greater impacts as indicated in **Exhibit 5-13** and summarized in the sections that follow.[41]

[41] For additional information on the impacts of the Underpass and Overpass Options, refer to **Appendix H-5, Cultural Resources Assessment of Effects; Appendix H-6, Visual Impact Assessment; Appendix H-9, Noise Impact Assessment;** and **Appendix H-10, Ecology Resource Survey and Assessment of Effects Report.**

EXHIBIT 5-13: DESIGN TREATMENT OPTION IMPACT SUMMARY TABLE[42]

Consideration	Basis of Comparison	Overpass Option	Underpass Option
Wetlands	Potential Impact to Wetland 43	No impact	0.01 acre
Streams	Potential Impacts to Streams	No impact	482 linear feet
Section 106 Historic Resources/Section 4(f) Resources	Potential Impact by Number and Area of Physical Impact to Eligible Historic Sites/Section 4(f) Resources	3 1.4 acres	4 2.2 acres
Property Impacts	Potential Impacts to Adjacent Properties	0 to 42 feet of ROW needed from 25 parcels 3 displacements	0 to 65 feet of ROW needed from 35 parcels 3 or more[43] displacements
Visual Impacts	Potential for Visual Effects from Roadway	Higher potential for visual effects	Lower potential for visual effects
Traffic Noise Impacts	Potential for Increases in Traffic Noise	Traffic noise increase would be similar for the Overpass and Underpass Options.	
Impacts to Existing Infrastructure	Potential Impacts to Existing Infrastructure Required to Implement the Project	Would require replacing existing noise barriers	Would require reconstructing the Raider Drive Bridge, the Riverside Drive bridge, existing noise barriers and the Riverside Drive roundabout north of I-285. Would be considerably more expensive to implement.
Construction Impacts	Potential Impacts to Traffic during Construction	Construction activities would not impact Raider Drive and Riverside Drive.	Would require full closure of the Raider Drive and Riverside Drive bridges and detours for both roadways, each for up to 6 months.

After considering public input received at the January 2020 PIOH meetings and findings of the comparative evaluation of both options, Georgia DOT identified the Overpass Option as the preferred design treatment option within Build Alternative 2 for the following reasons:

- *Overpass Option results in Lesser Environmental Impacts*. Results in comparatively lesser direct impacts to adjoining properties (fewer ROW acquisition parcels with smaller footprint); results in comparatively lesser impacts to regulated wetlands and waters of the United States.
- *Overpass Option minimizes Implementation Risks.* Minimizes impacts to existing infrastructure; minimizes constructability risks and lessens construction-phase traffic impacts; minimizes ROW risks; minimizes budget and schedule performance risks.

The Overpass Option results in lesser environmental impacts and minimizes implementation risks.

[42] Impacts described in this table are specific to the area studied for the design treatment options.

[43] The Underpass Option could displace additional residences by impacting their septic systems.

5.2.2.2 Build Alternative 2 Express Lane Access

EL System Interchanges. Build Alternative 2 would also provide connectivity between I-285 ELs and ELs on all three adjoining EL systems: NWC, SR 400, and I-85. EL system interchanges are shown on **Exhibit 5-12**. To connect with NWC ELs, Build Alternative 2 includes elevated ELs on the outside of the GP lanes in the vicinity of the NWC interchange. By constructing elevated structures to the outside of the existing GP lanes, Build Alternative 2 maintains and improves the existing direct merge between I-285 GP lanes and the recently constructed reversible lanes that connect with the NWC ELs.

Build Alternative 2 provides the same connectivity between I-285 ELs and the SR 400 ELs and existing I-85 HOT ELs as Build Alternative 1 (refer to **Section 5.2.1.2, Build Alternative 1 Express Lane Access Plan**).

Direct Merge Locations. Build Alternative 2 would provide direct merges between ELs and GP lanes in five of the six locations included in the EL access plan described in **Section 5.1.2, Express Lane Access Plan**: Raider Drive, North Shallowford Road, Henderson Road, north of South Atlanta Road, and the SR 400 Terminal Ramps (refer to **Exhibit 5-12**). Direct merges at Raider Drive, Henderson Road, and north of South Atlanta Road are similar to Build Alternative 1 (refer to **Section 5.2.1.2, Build Alternative 1 Express Lane Access,** for further description of these direct merges). Providing a direct merge at the SR 400 Terminal Ramps allows users of the southbound ELs on SR 400 to continue traveling through the I-285/SR 400 interchange instead of having to exit from the southbound ELs to the GP lanes at the direct merge to be constructed under the SR 400 project. This provides commuters destined for Atlanta a reliable travel option through the interchange by allowing them to stay in SR 400 ELs through the I-285 interchange. Additionally, it provides better connectivity to the Northside Hospital area major regional center by lengthening the distance of the ELs south through the I-285/SR 400 interchange. Additionally, providing a direct merge between the ELs and GP lanes along I-285 between SR 400 and I-85 at North Shallowford Road provides the public with the choice of whether or not to use ELs if they are traveling between the different facilities, consistent with the recommendations in the ELNIOM (refer to **Section 5.1.1** for additional information on the ELNIOM recommendations).

Build Alternative 2 does not provide a direct merge under the I-75 system interchange because the ELs are elevated at that location, and there is not enough clearance to construct the direct merge without reconstructing the interchange. The lack of direct merge at this location does not present an inconsistency with ELNIOM policy recommendation to provide motorists the opportunity to switch between ELs and GP lanes along or between EL systems because motorists are provided this opportunity with the Raider Drive direct merge.

Direct Access Locations. Build Alternative 2 would also provide direct access to all major regional activity centers along the Proposed Project corridor. These are described further in **Section 5.1.2, Express Lane Access Plan**, and **Section 5.2.1.2, Build Alternative 1 Express Lane Access,** and shown in **Exhibit 5-2** and **Exhibit 5-12**.

5.2.2.3 Additional Features of Build Alternative 2

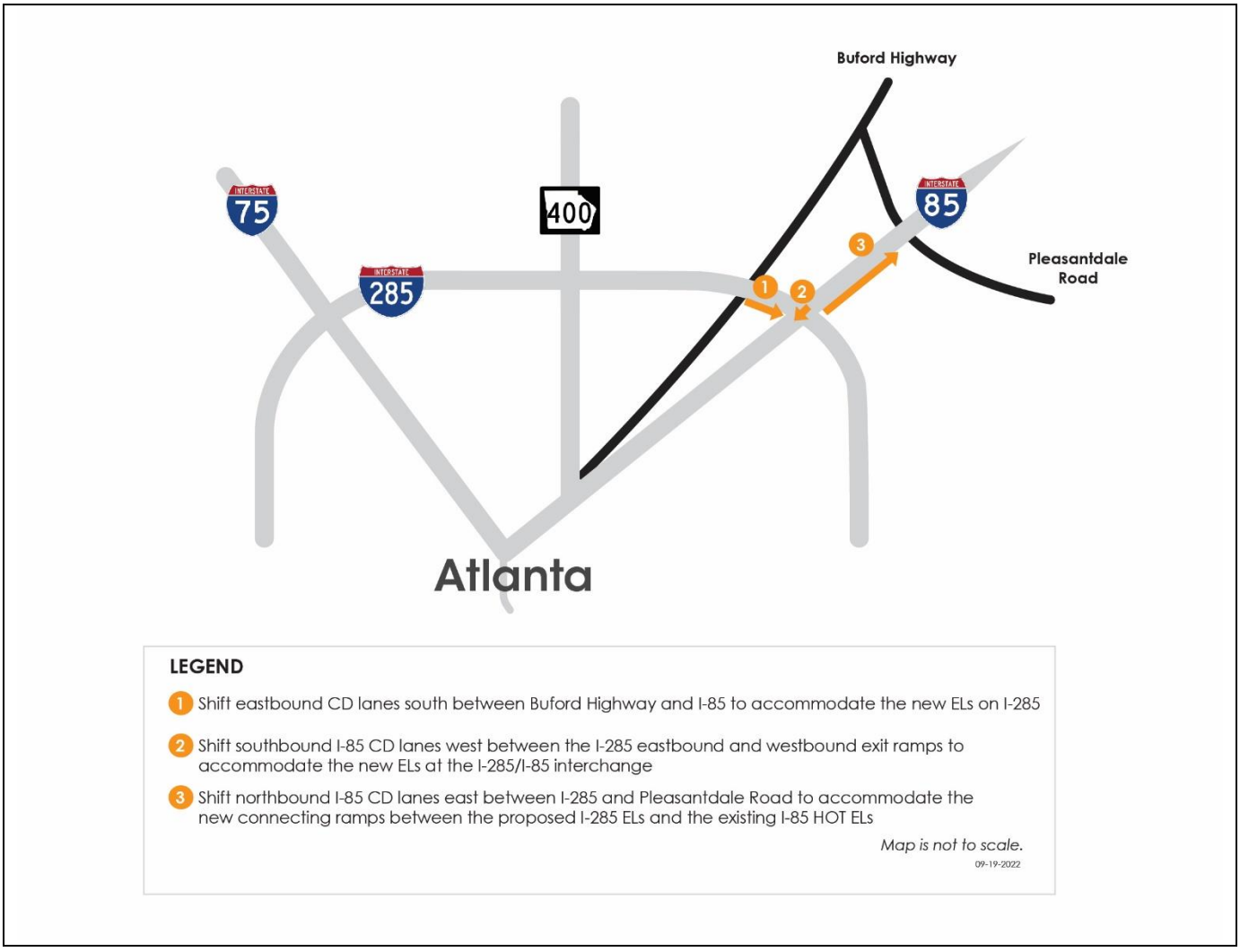
Build Alternative 2 would include the following additional modifications to existing roadways (**Exhibit 5-14**):

- Shift eastbound CD lanes south between Buford Highway and I-85 to accommodate the new ELs on I-285.
- Shift southbound I-85 CD lanes west between the I-285 eastbound and westbound exit ramps to accommodate the new ELs at the I-285/I-85 Interchange.

- Shift northbound I-85 CD lanes east between I-285 and Pleasantdale Road to accommodate the new connecting ramps between the proposed I-285 ELs and the existing I-85 HOT ELs.

Build Alternative 2 does not require extensive reconstruction of GP lanes or the replacement of most of the bridges over I-285, including the CSX Railroad, Cobb Parkway, Cumberland Boulevard, and Mt. Wilkinson Parkway bridges, as would be the case under Build Alternative 1. Build Alternative 2 also does not require partial or complete replacement of the bridge over the Chattahoochee River, as would be required with Build Alternative 1. The ELs would cross the Chattahoochee River on new bridges constructed between I-285 and the frontage roads (Interstate North Parkway and Powers Ferry Road), eliminating the need to replace the bridge. Minimizing reconstruction of existing bridges as well as I-285 GP lanes results in Build Alternative 2 having a relatively shorter construction schedule.

EXHIBIT 5-14: MODIFICATIONS TO EXISTING ROADWAYS TO ACCOMMODATE BUILD ALTERNATIVE 2



5.2.3 Build Alternative 3 (At-Grade, Inside)

5.2.3.1 Build Alternative 3 Mainline Improvements

Alternative 3 consists of widening to construct two ELs in each direction with shoulders along I-285 primarily on the inside of the existing GP lanes, at-grade (**Exhibit 5-15, Exhibit 5-16,** and **Exhibit 5-17**). Build Alternative 3 provides the same mainline improvements to SR 400 and separation between ELs and GP lanes as Build Alternative 1 (refer to **Section 5.2.1.1, Build Alternative 1 Mainline Improvements**). Build Alternative 3 also includes the addition of westbound CD lanes between Peachtree Industrial Boulevard and North Peachtree Road to eliminate existing weaving along the GP lanes.

EXHIBIT 5-15: BUILD ALTERNATIVE 3 – PRIMARY I-285 TYPICAL SECTION

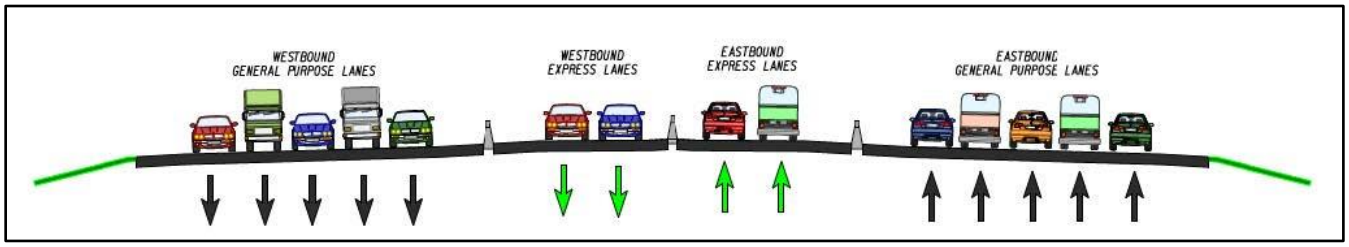


EXHIBIT 5-16: BUILD ALTERNATIVE 3 RENDERING

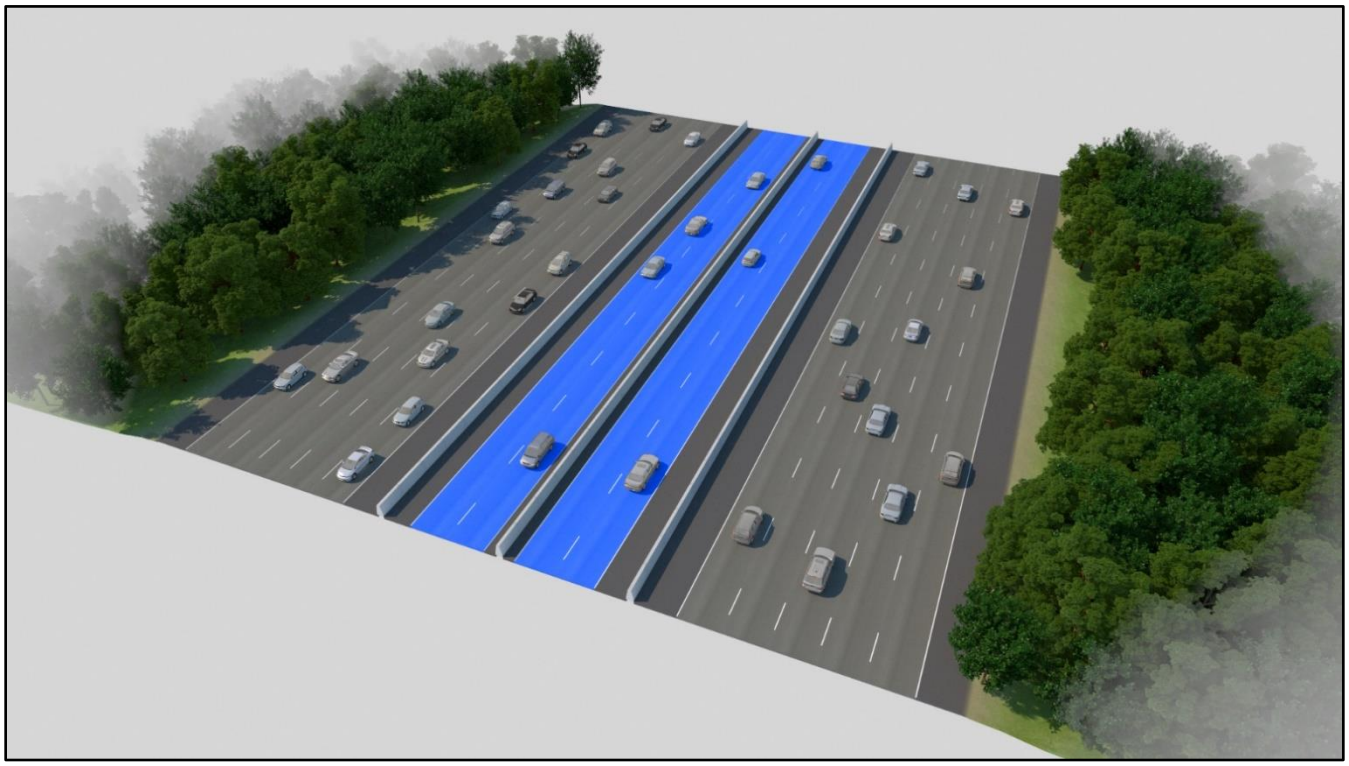
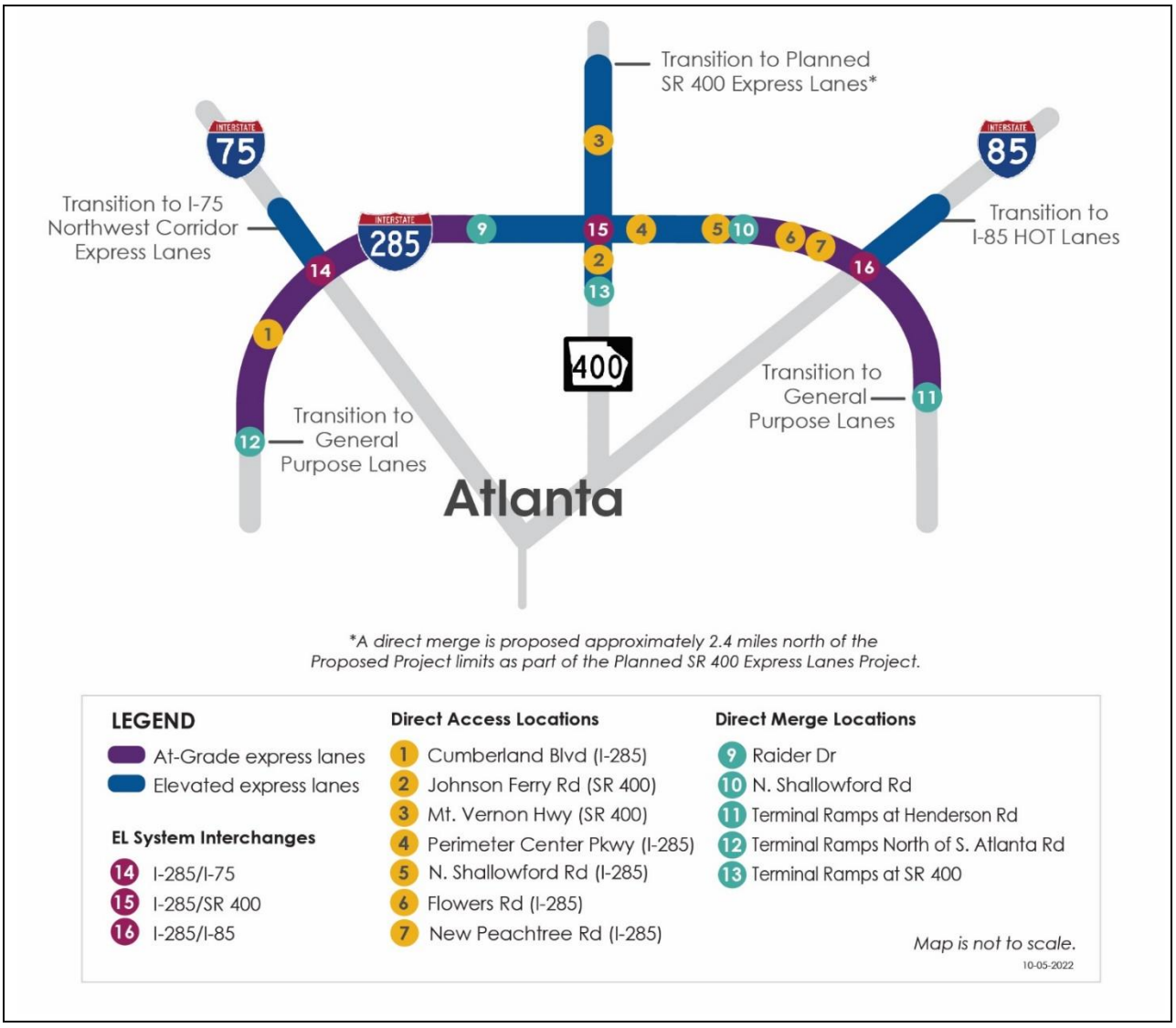


EXHIBIT 5-17: BUILD ALTERNATIVE 3 ACCESS AND MERGE LOCATIONS



5.2.3.2 Build Alternative 3 Express Lane Access

EL System Interchanges. Build Alternative 3 would also provide connectivity between I-285 ELs and ELs on all three adjoining EL systems: NWC, SR 400, and I-85. EL system interchanges are shown on **Exhibit 5-17**. Connectivity to the three adjoining EL systems is provided similar to Build Alternative 1 (refer to **Section 5.2.1.2, Build Alternative 1 Express Lane Access**).

Direct Merge Locations. Build Alternative 3 would provide direct merges at the same locations as Build Alternative 2: Raider Drive, North Shallowford Road, Henderson Road, north of South Atlanta Road, and the SR 400 Terminal Ramps (refer to **Exhibit 5-17**). Refer to **Section 5.2.1.2, Build Alternative 1 Express Lane Access**, for a description of these direct merges.

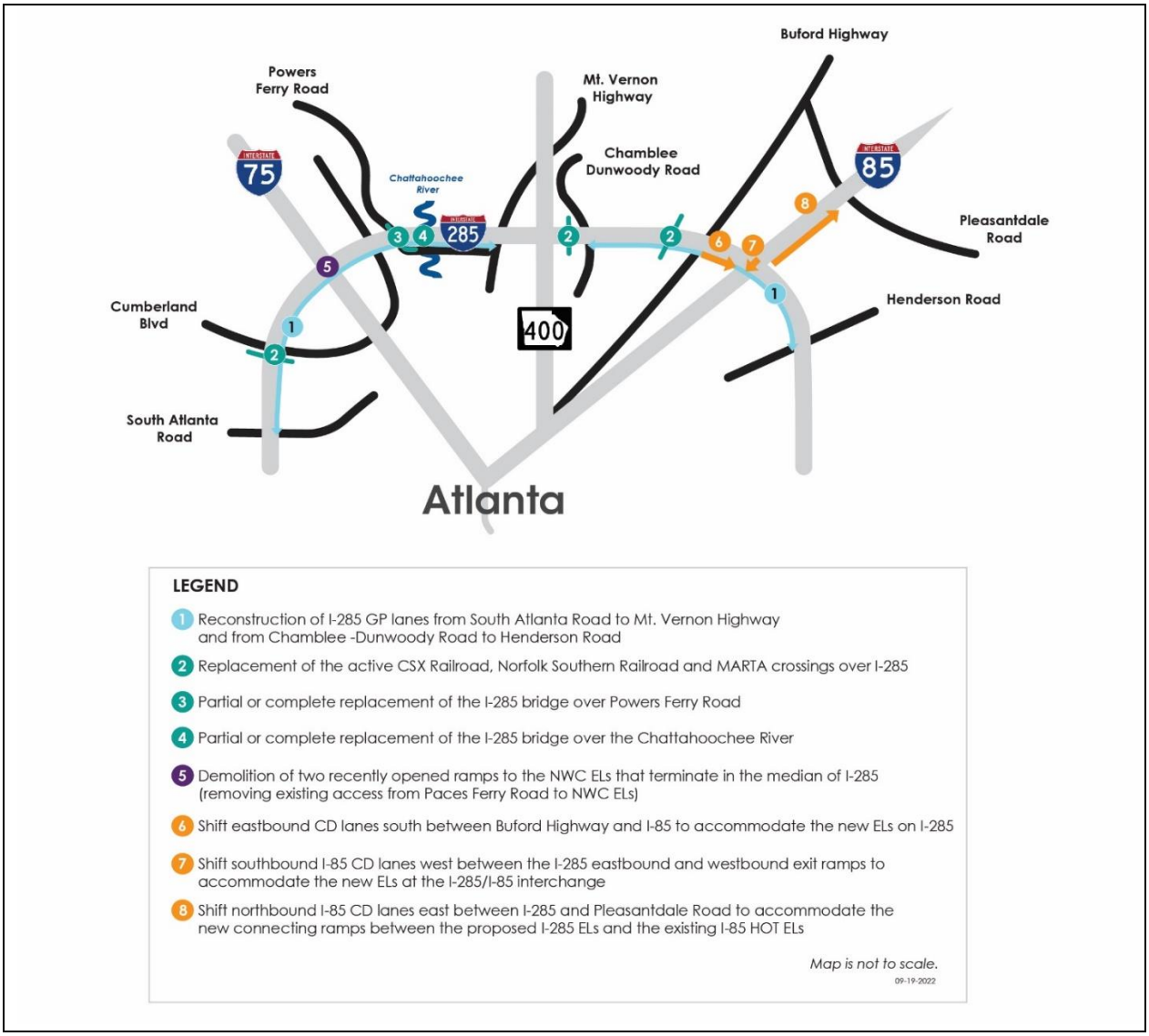
Direct Access Locations. Build Alternative 3 would also provide direct access to all major regional activity centers along the Proposed Project corridor. These are described further in **Section 5.1.2, Express Lane Access Plan,** and **Section 5.2.1.2, Build Alternative 1 Express Lane Access,** and shown in **Exhibit 5-2 and Exhibit 5-17**.

5.2.3.3 Additional Features of Build Alternative 3

Build Alternative 3 would also include extensive reconstruction of existing roadways and bridges (**Exhibit 5-18**):

- Reconstruction of I-285 GP lanes from north of South Atlanta Road to Mt. Vernon Highway and from Chamblee-Dunwoody Road to Henderson Road. With more than 240,000 average vehicles per day on this section of I-285, and especially during weekday commuting hours, maintenance of traffic would be a critical factor
- Replacement of the active CSX Railroad, Norfolk Southern Railroad, and MARTA crossings over I-285
- Replacement of most existing bridges over I-285
- Partial or complete replacement of the I-285 bridge over Powers Ferry Road
- Partial or complete replacement of the I-285 bridge over the Chattahoochee River
- Demolition of two recently opened ramps to the I-75 NWC ELs that terminate in the median of I-285 (removing existing access from Paces Ferry Road to I-75 NWC ELs)
- Shift eastbound CD lanes south between Buford Highway and I-85 to accommodate the new ELs on I-285
- Shift southbound I-85 CD lanes west between the I-285 eastbound and westbound exit ramps to accommodate the new ELs at the I-285/I-85 Interchange
- Shift northbound I-85 CD lanes east between I-285 and Pleasantdale Road to accommodate the new connecting ramps between the proposed I-285 ELs and the existing I-85 HOT ELs

EXHIBIT 5-18: MODIFICATIONS TO EXISTING ROADWAYS AND BRIDGES TO ACCOMMODATE BUILD ALTERNATIVE 3



Build Alternative 3 requires extensive reconstruction of existing GP lanes and bridges and would require partial or complete replacement of the I-285 bridges over Powers Ferry Road and the Chattahoochee River (similar to Build Alternative 1; refer to **Section 5.2.1.3, Additional Features of Build Alternative 1,** for additional information). This would make it the costliest to construct and the most disruptive to motorists during construction as a result of how long it would take to complete the improvements and the complex maintenance of traffic requirements[44].

The PAR process undertaken for permitting under Section 404 of the Clean Water Act, resulted in the finding that Build Alternative 3 would also require the most ROW and result in the greatest environmental impacts

[44] For additional information regarding this comparative analysis, refer to **Appendix F-G, Practicable Alternatives Review**.

(**Exhibit 5-19**), particularly resources protected under Section 404 of the Clean Water Act (wetlands, streams and open waters), and was not identified as the Least Environmentally Damaging Practicable Alternative.[45] Build Alternative 3 was dismissed and not carried forward for further consideration because it would cost the most, be the most disruptive during construction, and result in the greatest environmental and socioeconomic impacts.

[45] For additional information on the Practicable Alternatives Review process, refer to **Appendix F-G, Practicable Alternatives Review.**

EXHIBIT 5-19: COMPARISON TABLE FROM PRACTICABLE ALTERNATIVES REVIEW PROCESS

Consideration		Alternative 1 [a] (At-grade, Outside)	Alternative 2 [a] (Elevated, Outside)	Alternative 3 [a] (At-grade, Inside)
Wetlands	2020 PAR, 2023 Project Updates	Total: 2.02 Acres	Total: 2.02 Acres	Total: 2.48 Acres
Streams	2020 PAR, 2023 Project Updates	Total: 16,533 LF	Total: 16,237 LF	Total: 18,648 LF
Open Waters	2020 PAR, 2023 Project Updates	Total: 0.14 Acres	Total: 0.12 Acres	Total: 0.23 Acres
Section 106 Historic Resources	2020 PAR, 2023 Project Updates	15 28.6 Acres	15 25.6 Acres	15 45.1 Acres
CRNRA	2020 PAR, 2023 Project Updates	Piers: 0.294 Acres Temporary Impacts: 1.5 Acres	Piers: 0.294 Acres Temporary Impacts: 0.75 Acres	Piers: 0.294 Acres Temporary Impacts: 1.5 Acres
Recreational Trails [b]	2020 PAR, 2023 Project Updates	Akers Mill Road (East)Trail: 5,248 LF Interstate North Trail: 2,199 LF	Akers Mill Road (East) Trail: 863 LF	Mountain-to-River Trail: 632 LF Akers Mill Road (East)Trail: 5,248 LF Interstate North Trail: 2,825 LF
Displacements [c]	2020 PAR, 2023 Project Updates	Residential: 217 Commercial: 101	Residential: 152 Commercial: 13	Residential: 585 Commercial: 96
Community and Neighborhoods	2020 PAR, 2023 Project Updates	9 resources with likely effects Lower potential for visual impacts compared to existing facilities Medium levels of highway noise (proposed ELs closer to residences; travel lanes would have more direct line of sight to tire/pavement interface)	3 resources with likely effects Higher potential for visual impacts compared to existing facilities Generally lowest levels of highway noise (proposed ELs further from residences; parapet and elevated deck act to shield some traffic noise)	15 Resources with likely effects Lower potential for visual impacts compared to existing facilities Highest levels of highway noise (reconstructed GP lanes carrying truck traffic closer to residences; travel lanes would have more direct line of sight to tire/pavement interface; outside lanes would be GP and would carry truck traffic)

EXHIBIT 5-19: COMPARISON TABLE FROM PRACTICABLE ALTERNATIVES REVIEW PROCESS (CONTINUED)

Consideration		Alternative 1 [a] (At-grade, Outside)	Alternative 2 [a] (Elevated, Outside)	Alternative 3 [a] (At-grade, Inside)
Chattahoochee River Bridge Construction	2020 PAR, 2023 Project Updates	Relatively long due to replacement of bridges on I-285 and Powers Ferry Road	Relatively short; bridges on I-285 and Powers Ferry Road are not replaced; new bridges constructed	Relatively long due to replacement of bridges on I-285 and Powers Ferry Road
Reconstruction and Construction Staging on Existing I-285	2020 PAR	Reconstruction of up to 6 miles of I-285 GP from Paces Ferry Road to Raider Drive; Reconstruction and relocation of active CSX Railroad crossing and Cumberland Boulevard Demolition of two recently opened ramps to NWC ELs	Reconstruction of I-285 GP lanes at termini to connect ELs to existing I-285 GP facilities	Reconstruction of up to 18 miles of I-285 GP lanes; replacement of most existing bridges over I-285 for wider typical section; assumes new Transform 285/400 bridges remain; traffic maintained with temporary bridges; replacement of CSX and Norfolk Southern bridges and MARTA crossings
	2023 Project Updates	No additional effects (minor increase in length of I-285 GP lane reconstruction)	No additional effects	No additional effects (minor increase in length of I-285 GP lane reconstruction)
Comparative Estimated Cost [d]	2020 PAR	$5.422 Billion	$5.306 Billion	$5.5 to $7.6 Billion
	2023 Project Updates	Proportional increases in the Comparative Estimated Costs	$9.5 Billion [e]	Proportional increases in the Comparative Estimated Costs

* Source: Practicable Alternatives Review Report, Georgia DOT, April 2020, and PAR Update Memo, Georgia DOT, June 2023 provided within **Appendix F-G** of this Draft EIS.

[a] Impacts presented in this table are from the PAR process and are approximations reflective of a corridor analysis based on conceptual design. Impacts differ from those presented in Draft EIS Chapter 3, Affected Environment, Environmental Consequences, and Mitigation, and in the resource-specific technical studies included in Appendix H, which reflect design development that has progressed subsequent to the PAR and incorporation of impact avoidance and minimization measures.

[b] Subsequent design refinements enable avoidance of Allen Park and permanent adverse effects to trails.

[c] Displacements are presented in this table as residential and commercial units rather than individual buildings as presented in the PAR material.

[d] The Comparative Estimated Costs are based on conceptual design and subject to change based on preliminary design development, risk management approach, procurement timing, and market conditions. The range of estimated costs for Alternative 3 is dependent on the complexity and extent of GP reconstruction. While improvement features are subject to refinement during preliminary design development, these refinements would not substantively change the relative comparison of Estimated Costs of Alternatives considered during the PAR Process.

[e] The current cost estimate for the Preferred Alternative is provided in Section 6.3. Since preparation of the comparative estimates during the PAR process (April 2020), the following factors have led to a change in the estimated costs: revised delivery schedule with later construction start and completion dates resulting in additional escalation costs; material and labor cost increases at rates well above historic averages; refined risk management approaches; refinements to the Preferred Alternative improvement features identified during preliminary design development. The total project costs are in the TIP under PI numbers 0001758, 0017124, 0017135.

LF = linear foot (feet)

6. Alternatives Under Consideration

The project team compared Build Alternatives 1 and 2 against each other and the No-Build Alternative and identified Build Alternative 2 as the Preferred Alternative.[46] The project team considered each alternative's ability to meet the Proposed Project's need and purpose, their environmental and socioeconomic impacts, and public input.

6.1 No-Build Alternative

The project team did not identify the No-Build Alternative as the Preferred Alternative. Though it avoids causing the temporary and permanent adverse effects on environmental and socioeconomic resources and inconvenience to the traveling public during construction, it does not meet the project's need and purpose.

- *Unreliable Trip Times for Commuters*: Projected growth in population, employment, and traffic volumes would result in increasingly congested travel conditions. As congested conditions worsen in future years, the associated effects would include continued unreliable travel times for commuters to regional employment centers and delays for transit and emergency response vehicles using I-285 in the Proposed Project corridor without improvements to address these conditions. Continued degradation of travel time reliability would make the surrounding Metro Atlanta area less desirable as a freight corridor and for commercial development. The expansion of transit services to the I-285 top end corridor would be unlikely to occur due to unreliable travel times and frequent traffic congestion.

  Lack of Accessibility and Regional Connectivity: Under the No-Build Alternative, Georgia DOT would not construct any transportation improvements for the Proposed Project, causing adjacent existing, planned and proposed ELs to merge traffic back into I-285 GP lanes. This would result in a lack of continuity of service for commuting traffic. Additionally, the No-Build Alternative would not improve travel times for commuters and transit services along I-285, and thus would not improve accessibility to major regional centers. Existing and planned transit services by others would not have the benefit of the I-285 Top End EL infrastructure investments, which could allow free-flow transit service.

- *Legislative Mandate to Accelerate Project Delivery:* Under the No-Build Alternative, traffic conditions would continue to worsen. Thus, the No-Build Alternative would be inconsistent with TFA legislation aimed at addressing urgent traffic concerns.

6.2 Identification of Preferred Alternative

While Build Alternatives 1 and 2 both address the project's need and purpose, Build Alternative 2 (Outside, Elevated) provides the greatest opportunity to address the project's need and purpose while minimizing impacts to resources. Based on these considerations and public input, Georgia DOT identified Build Alternative 2 as its Preferred Alternative. Both Cooperating Agencies concurred preliminarily with carrying forward Build Alternative 2 as the Preferred Alternative. In a letter dated December 18, 2020, NPS communicated the agency had no objection to Build Alternative 2 being the Preferred Alternative, and in a letter dated January 4, 2021,

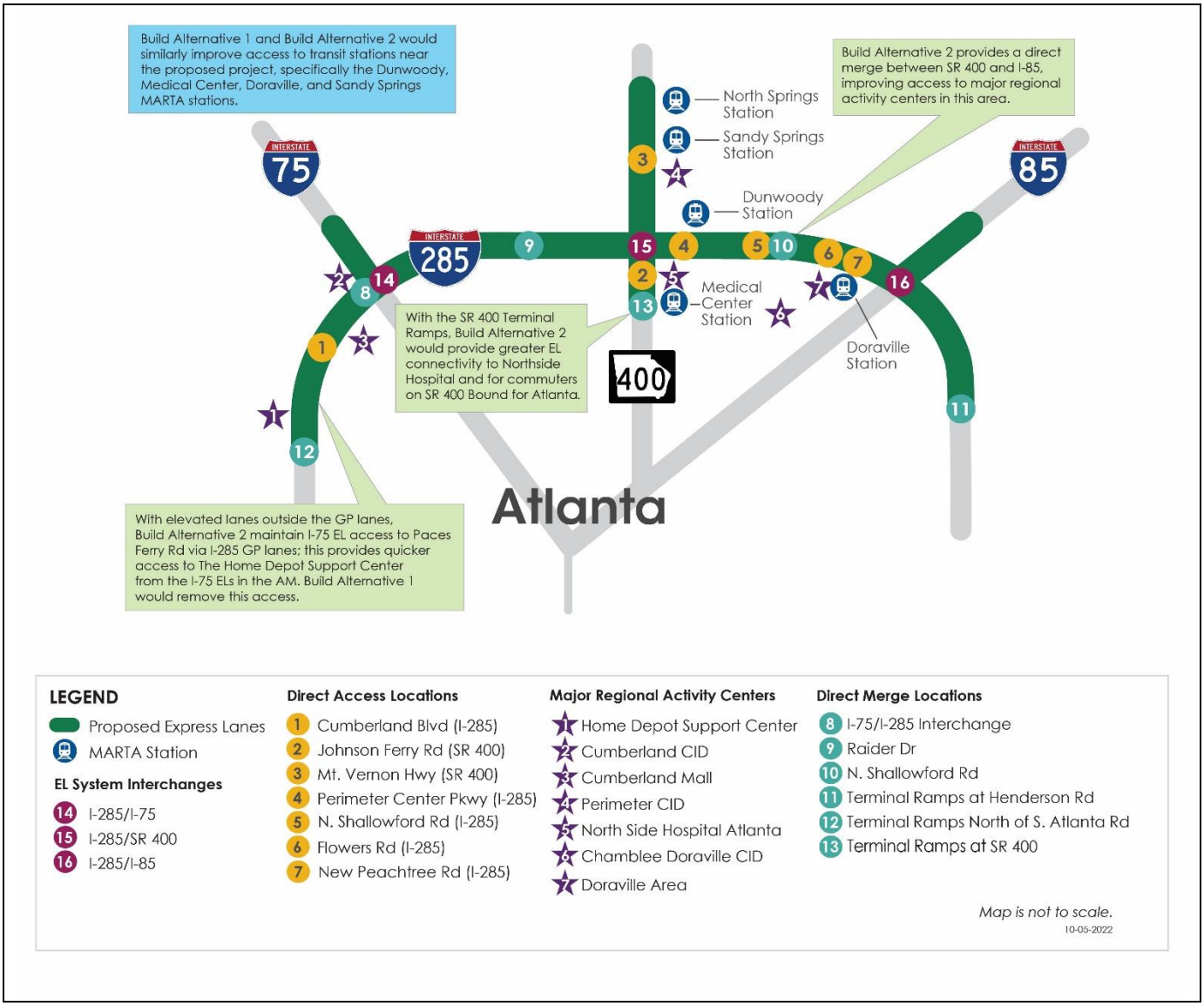
[46] For additional detail on the transportation benefits of Build Alternatives 1 and 2 and on the No-Build Alternative, refer to **Appendix H-4, Transportation Systems Report**. For a description of the Preferred Alternative (Build Alternative 2), refer to **Section 5.2.2, Build Alternative 2 (Elevated, Outside)**.

USACE concurred preliminarily with Georgia DOT carrying Build Alternative 2 forward as the Preferred Alternative. NPS reaffirmed their preliminary concurrence with Georgia DOT carrying forward Build Alternative 2 as the Preferred Alternative on April 20, 2023, and USACE reaffirmed their preliminary concurrence on July 12, 2023 (refer to **Appendix M, Agency Correspondence** for the USACE and NPS letters).

- *Unreliable Trip Times for Commuters*: With the addition of ELs along the Proposed Project corridor, Build Alternatives 1 and 2 would improve the reliability of trip times for commuters, including motorists and transit services. ELs improve reliability of trip times because they provide an option for commuters to bypass congestion as they keep lanes flowing using pricing to manage the number of passenger vehicles using the lanes. Improved travel reliability for transit services would provide the opportunity to increase transit ridership by providing motorists with additional reliable options, such as transit or vanpools, to make their trips aside from single-occupancy vehicles.
- *Lack of Accessibility and Regional Connectivity:* Build Alternatives 1 and 2 provide comparable system-to-system connectivity by providing connections to all existing, proposed, and planned EL systems adjacent to the Proposed Project corridor. Build Alternative 2 provides better accessibility to major activity centers than Build Alternative 1 (**Exhibit 6-1**). It provides a direct merge between ELs and GP lanes between SR 400 and I-85, which improves access to the major regional activity centers in that area. Additionally, by implementing a direct merge at the SR 400 Terminal Ramps, Build Alternative 2 provides better connectivity from the north to Atlanta by allowing commuters to continue in the SR 400 ELs further south, thereby providing a reliable travel option through the interchange. The direct merge at SR 400 also provides better connectivity to the Northside Hospital area by extending ELs southward through the I-285/SR 400 interchange. Lastly, by constructing elevated structures to the outside of the existing GP lanes, Build Alternative 2 maintains and improves the existing direct merge between I-285 GP lanes and the recently constructed reversible lanes that connect with the I-75 NWC ELs. This provides the ability to maintain access to Paces Ferry Road via GP lanes from I-75 NWC ELs, which commuters use to access the Home Depot Support Center, a major employer. Additionally, Build Alternatives 1 and 2 would similarly improve access to the transit stations in the vicinity of the project, specifically the Dunwoody, Medical Center, Doraville, and Sandy Springs MARTA stations. Build Alternatives 1 and 2 improve accessibility and regional connectivity by attracting motorists from the adjacent arterial system without compromising travel times, with Build Alternative 2 attracting more motorists from adjacent arterials. This improves the ability of motorists to access major regional centers by reducing travel times along I-285 and the adjacent arterial system.[47]

[47] For additional detail on the comparison of travel demand between Build Alternatives 1 and 2, refer to **Appendix H-4, Transportation Systems Report.**

EXHIBIT 6-1: COMPARISON BETWEEN BUILD ALTERNATIVES 1 AND 2



- *Legislative Mandate to Accelerate Project Delivery:* Build Alternative 2 best addresses the need to urgently address current and future traffic concerns. By minimizing the need to reconstruct many of the existing bridges, most notably the bridge over the Chattahoochee River, as well as I-285 GP lanes, Build Alternative 2 has a relatively shorter construction schedule when compared to Build Alternative 1.

Additionally, during the PAR process, as shown in **Exhibit 5-19**, Build Alternative 2 presented fewer impacts to environmental and socioeconomic features compared to Build Alternative 1. Specifically, Build Alternative 2 presented the following when compared to Build Alternative 1:

- Fewer impacts to streams and open waters
- Fewer acres of impacts to Section 106 historic resources
- Fewer acres of temporary impact to the CRNRA
- Fewer residential and commercial displacements
- Fewer community and neighborhood resources likely impacted

- Lower levels of traffic noise
- Lower construction cost
- Less disruption during construction

Notably, at the culmination of the PAR process, USACE determined that Build Alternative 2 would best meet the definition of the preliminary Least Environmentally Damaging Practicable Alternative. On April 22, 2020, USACE responded to the PAR submittal and presentation by stating "Alternatives for this project have been adequately addressed at this time, with respect to the description for each alignment, side-by-side aerial photographs of all alternatives, and inclusion of the Environmental Resource Alternatives Comparison table, which assists us with the review of this action. In summary, we conclude that the PAR contains adequate information to proceed with the evaluation of this project." Refer to **Appendix F-G, Practicable Alternatives Review** for USACE's April 22, 2020, letter. Final selection of an alternative will not be made until the project team has fully evaluated the alternatives' impacts and considered public and stakeholder comments on the Draft EIS and public hearing.

6.3 Construction Financing and Phasing

Georgia DOT estimates the Proposed Project would cost $9.5 billion[48,49] and anticipates the Proposed Project would be constructed using a P3 delivery model. This estimate is based on the current stage of preliminary design development and is subject to change based on further design development, risk management approach, procurement timing, and market conditions. A P3 seeks to harness private sector expertise, innovation, and financing to deliver public infrastructure for the benefit of the public owner and infrastructure users. P3s seek to successfully leverage the respective strengths of the public and private sectors to deliver large, complex infrastructure projects in a cost effective and timely fashion. Under this model, Georgia DOT would select one or more developers to design, build, finance, operate, and maintain the Proposed Project.

6.3.1 Tolling

Interstate 285 in metro Atlanta is one of the most heavily traveled and congested interstate highways in America. Georgia DOT would construct ELs to provide a congestion relief option for motorists and transit vehicles along the limits of the Proposed Project. These ELs would be tolled to manage traffic volumes, improve travel time reliability and increase transit options and opportunities (including providing toll-free trips for transit riders and registered vanpools). Federal legislation (23 U.S.C. 129) governs the conditions under which tolling can be implemented on federal-aid highways, including interstates.[50] Consistent with 23 U.S.C. 129(a)(1)(C), all Build Alternatives include tolling along the ELs and maintain the current number of toll-free lanes along I-285. Similar to the existing ELs in Metro Atlanta (the NWC ELs and the I-75 South Metro Express Lanes), the Proposed Project's ELs along I-285 would operate with an Express Toll Lane (ETL) pricing strategy. Users would be able

[48] Atlanta Regional Commission (ARC). 2022. *FY 2020-2025 Transportation Improvement Program (TIP) Project List*. September. http://documents.atlantaregional.com/transportation/TIP20/Q1/TIP%20Project%20List%20-%20ARCID%20-%202-28-2020.pdf.

[49] The current Estimated Cost includes construction costs (design and construction), right-of-way costs, contingency, and escalation to an estimated year of expenditure.

[50] 23 U.S.C. 129 provides broad authority for states to implement tolling on federal-aid highways in conjunction with new construction or other improvements to those highways or interstates, provided the number of toll-free lanes is not reduced and that the state DOT ensures compliance with certain federal requirements governing the use of toll receipts.

to pay tolls electronically using PeachPass transponders (used for other managed lanes in Georgia) or transponders used in other states (such as EZPass, SunPass or QuickPass). For users without a transponder, there would be online post-payment options.

Allowable vehicles on the I-285 ELs would be designated by the State Transportation Board in accordance with OCGA 32-9-4. Larger trucks, such as tractor-trailers, are prohibited.51 All users, except for registered transit vehicles and vanpools, authorized emergency response vehicles and certain military vehicles, would be charged a toll when choosing to use the ELs, based on a dynamic tolling approach, where the toll rates paid by vehicles would change in response to real-time traffic conditions, with higher toll rates during periods of congestion. These toll rates would be set to achieve a minimum average 45 mph speed for EL users, thereby providing reliable trip times for all users, including transit, carpool, and vanpool passengers. The ELs would also enhance transit operations by providing options for new transit routes and increased service levels along I-285. Larger trucks such as tractor trailers, are prohibited. However, they may be considered in the future to support the delivery and operations of the proposed ELs. If so, higher toll rates may apply.

The SRTA is the state agency authorized to operate tolled transportation facilities on state roads in Georgia. Georgia DOT is the state agency responsible for the construction, operations, and maintenance of the Georgia state highway system and all federal roadways in Georgia. Before initiating any procurements for the Proposed Project, the respective governing boards of each agency (State Transportation Board and SRTA Board) would enter into a joint resolution that affirms the following:

- The Proposed Project is approved as a joint undertaking by Georgia DOT and SRTA.
- Georgia DOT and SRTA have allocated roles and responsibilities relating to management and oversight of the design, construction, financing, operation, maintenance, and tolling of the Proposed Project.
- SRTA is authorized to grant a private developer the right to set and collect tolls on roadways developed under applicable Georgia law per contractual requirements, as well as the right to process and collect violations for unpaid tolls.
- SRTA would provide customer service support, issue transponders, and manage customer PeachPass accounts for the Proposed Project.

Separate intergovernmental agreements between Georgia DOT and SRTA would stipulate the obligations of each agency during the construction and operations phases of the Proposed Project. In addition, there would be an agreement between SRTA and the Proposed Project's operator that details each entity's role and responsibilities with respect to tolling and toll collection and establishes the applicable business terms between the parties.

All Build Alternatives include tolling through ETLs and would include dynamic tolling, where toll rates are set to manage congestion and maintain travel time reliability. No discounts or toll waivers would be provided for carpools or high-occupancy passenger vehicles that use the ELs. The tolls paid by users of the Proposed Project would vary by traffic conditions, length of their trip, and the Express Lane entry/exit points used.

Tolls rates would be set at a level to effectively manage the flow of traffic in the ELs and to maintain a minimum operating speed of 45 mph for toll-paying vehicles as well as transit vehicles. Georgia DOT and SRTA would establish parameters that would govern toll rates in the procurement and final contract documents. Although subject

[51] During the P3 procurement process, developers may propose that larger trucks (tractor-trailers) be permitted to use the I-285 ELs. Any such proposals would be subject to Georgia DOT's approval, which would include an assessment of required changes to the Proposed Project's features and operations, identification of associated impacts, and completion of necessary environmental reviews and approvals.

to change, the initial planning analysis indicates that the estimated average toll rates (in 2022 dollars[52]) for the first operating phase of the Proposed Project would be $1.25 per mile, with toll rates ranging from $0.10 per mile up to $1.50 per mile depending on travel demand and congestion levels. Toll rates would be regulated by contract and include both 1) a per mile limit on the nominal toll rate amount (known as the "operational toll rate") and 2) controls to ensure that any further toll rate adjustments are linked to maintaining operating performance requirements. Under normal traffic conditions, the per mile operational toll rate would be the maximum amount paid to use the ELs. However, to effectively manage demand and maintain travel speeds in the ELs, if congestion levels exceed contract-mandated thresholds, the actual per mile toll rate could be further adjusted temporarily and incrementally (up to double the operational toll rate amount) for the purposes of achieving a flow of traffic in the ELs at a minimum of 45 mph. In any instances where a temporary toll adjustment is needed to maintain the contractual operating requirements, rates higher than the operational toll rate could be charged, but only in the portion(s) of the corridor where travel speeds are degraded and only for a limited period of time until travel speeds again meet the minimum requirements. The operational toll rate would be allowed by contract to be adjusted annually by factors such as the State's GDP growth, the rate of inflation and/or to meet the contract performance metrics. These are intended to reflect economic conditions that are likely to both 1) add to traffic congestion in the corridor and 2) influence drivers' willingness to pay for a reliable trip. The anticipated toll rates presented above may change as the design of the Proposed Project is refined and the final contract terms are confirmed during the procurement process.

6.3.2 Phasing and Procurement

While the Proposed Project is studied as one project in the Draft EIS, it would be constructed in phases to address fiscal constraints, contractor availability, and reduced impacts to the traveling public.

Georgia DOT is authorized to use several delivery methods, including P3s, to develop and operate roadways in Georgia.[53] The state's P3 program is intended to seek innovative project delivery and financing solutions from the private sector to meet the state's transportation infrastructure needs. In February 2022, Georgia DOT refined the delivery approach for the Proposed Project, shifting from a fully publicly funded model to an alternative P3 model using private financing where Georgia DOT selects one or more developers to design, construct, finance, operate, and maintain the new I-285 ELs under long-term concession agreement(s). This change was made to reduce the total public investment needed to complete the Proposed Project and expedite delivery. Some public funding may still be required for the Proposed Project and the amount of such finding would be determined during the procurement process based on developer proposals and financial commitments. Any public funding amounts would be consistent with the ARC RTP and the applicable Transportation Improvement Program.

Because of the size, complexity, and costs of the Proposed Project, Georgia DOT would use a phased procurement and construction approach **(Exhibit 6-2)**. The Proposed Project would be advanced as separate, independent construction phases under I-285 Top End East Express Lanes (PI No 0017135 and PI No. 0019965) and I-285 Top End West Express Lanes (0017124). Georgia DOT would select developers for I-285 Top End East Express Lanes (PI No. 0017135 and PI No. 0019965) and I-285 Top End West Express Lanes (PI No. 0017124) based on a combination of technical and financial criteria, based on submitted proposals and developer

[52] 2022 data was used to provide consistency across the range of tolling information provided in various sections of the Draft EIS.

[53] Refer to *Official Code of Georgia 32-2-80 (Public-Private Partnerships)* and *Chapter 672-17 (Governing Public-Private Partnerships) of the Rules and Regulations of the State of Georgia*.

commitments. GDOT will undertake additional analysis to ensure that when each phase opens to the public, it provides acceptable traffic and safety conditions and demonstrates operational independence.

EXHIBIT 6-2: I-285 TOP END EXPRESS LANES PROCUREMENT AND CONSTRUCTION PHASING

Each selected developer would have a right to submit proposals that meet Georgia DOT requirements and schedule for potential subsequent phases (extensions to I-20), and an opportunity to enter into contracts with respect to the development, construction, and operation of subsequent phases, subject to agreement with Georgia

DOT and completion of any further required planning and environmental approvals.[54] A given developer is not guaranteed rights to any extensions beyond the initial portions of the Proposed Project. Any proposals for future phases must meet Georgia DOT performance, cost, and schedule requirements and provide demonstrable value to Georgia DOT and the public. Georgia DOT always retains the authority if required, to separately procure and deliver future phases under a different contract and/or contracting structure.

All procurements would be conducted in accordance with applicable federal law and regulations, as well as Georgia DOT's procurement regulations and policies.[55] Additional details about the specific procurement approach for each contract package would be publicly available in advance of initiating any formal solicitation processes.

[54] Georgia DOT anticipates that separate EISs would be prepared to extend the I-285 Eastside Express Lanes and I-285 Westside Express Lanes to I-20, though the NEPA document type would ultimately be confirmed in accordance with the Council on Environmental Quality's Final Rule for class of action determinations and consultation with FHWA [at the time those extensions are advanced]. These determinations would be made after the initial technical studies are complete based on the proposed design concept and a summary of anticipated environmental impacts for each extension.

[55] Refer to *Official Code of Georgia 32-2-78 et. seq.*, *Chapter 672-17 of the Rules and Regulations of the State of Georgia*, and Georgia DOT's P3 Guidelines (Georgia Department of Transportation [Georgia DOT]. 2019. *Public-Private Partnership Guidelines*. July 18.) and P3 Manual (Georgia Department of Transportation [Georgia DOT]. 2022. *P3 Manual*. August 3.).

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