Georgia Department of Transportation

Interoffice Memo
Office of Design Policy & Support

DATE: **5/10/2024**

FILE: P.I.# 0018304
Fulton County / GDOT District 7 - Metro Atlanta
SR 3/US 19 @ CS 2368/GREENSFERRY AVE/MCDANIEL STREET
Intersection Improvement/Pedestrian Upgrades

FROM: Dave Peters for Daniel Pass, P.E., State Design Policy Engineer

TO: SEE DISTRIBUTION

SUBJECT: **APPROVED CONCEPT REPORT**

Attached is the approved Concept Report for the above subject project.

Attachment

Distribution:
Christopher Rudd, Director of Engineering
Hiral Patel, Director of P3
Albert Shelby, Director of Program Delivery
Clement Solomon, Director, Division of Intermodal
Darryl VanMeter, Assistant Director of P3/State Innovative Delivery Administrator
Matthew Markham, Deputy Director of Planning
Kim Nesbitt, Program Delivery Administrator
Eric Duff, State Environmental Administrator
Donn Digamon, State Bridge Engineer
Alan Davis, State Traffic Engineer
Angela Robinson, Financial Management Administrator
Erik Rohde, State Project Review Engineer
Ian Rish, State Materials Engineer
Nick Fields, State Utilities Administrator
Eric Conklin, State Transportation Data Administrator
Attn: Systems & Classification Branch
Lee Howell, Statewide Location Bureau Chief
Paul DeNard, District 7 District Engineer
Landon Perry, District 7 Preconstruction Engineer
Shun Pringle, District 7 Utilities Manager
Olusola Adekonojo, Project Manager

Limited Scope Project Concept Report

Template version: 2023.06.26

Project Type:	Reconstruction/Rehabilitation	P.I. Number:	0018304
GDOT District:	7	County:	Fulton
Federal Route Number:	19,29,41	State Route Number:	3
Project Number:	N/A		

This project will provide an intersection improvement project at the Greensferry Avenue and McDaniel Street intersection with Northside Drive. This project will also provide upgraded sidewalks, signals, and stormwater infrastructure.

Revised: 2/9/24 4/16/24

Submitted for approval:

Travis McClam, AECOM — 9/19/2023 (Date)

Kimberly W. Nesbitt — 9-28-2023 (Date)
State Program Delivery Administrator

olusolaadekonojo C.A.R. — 09/21/2023 (Date)
GDOT Project Manager CCB

* Recommendations on file - KLP

Recommendation for approval:

* Eric Duff — 2-20-2024 (Date)
State Environmental Administrator

* Oladimeji Onabanjo — 10-19-2023 (Date)
For State Traffic Engineer

* Landon Perry — 10-10-2023 (Date)
For District Engineer

☒ MPO Area: This project is consistent with the MPO adopted Regional Transportation Plan (RTP)/Long Range Transportation Plan (LRTP).

☐ Rural Area: This project is consistent with the goals outlined in the Statewide Transportation Plan (SWTP) and/or is included in the State Transportation Improvement Program (STIP).

* Matt Markham — 10-11-2023 (Date)
for Division of Planning

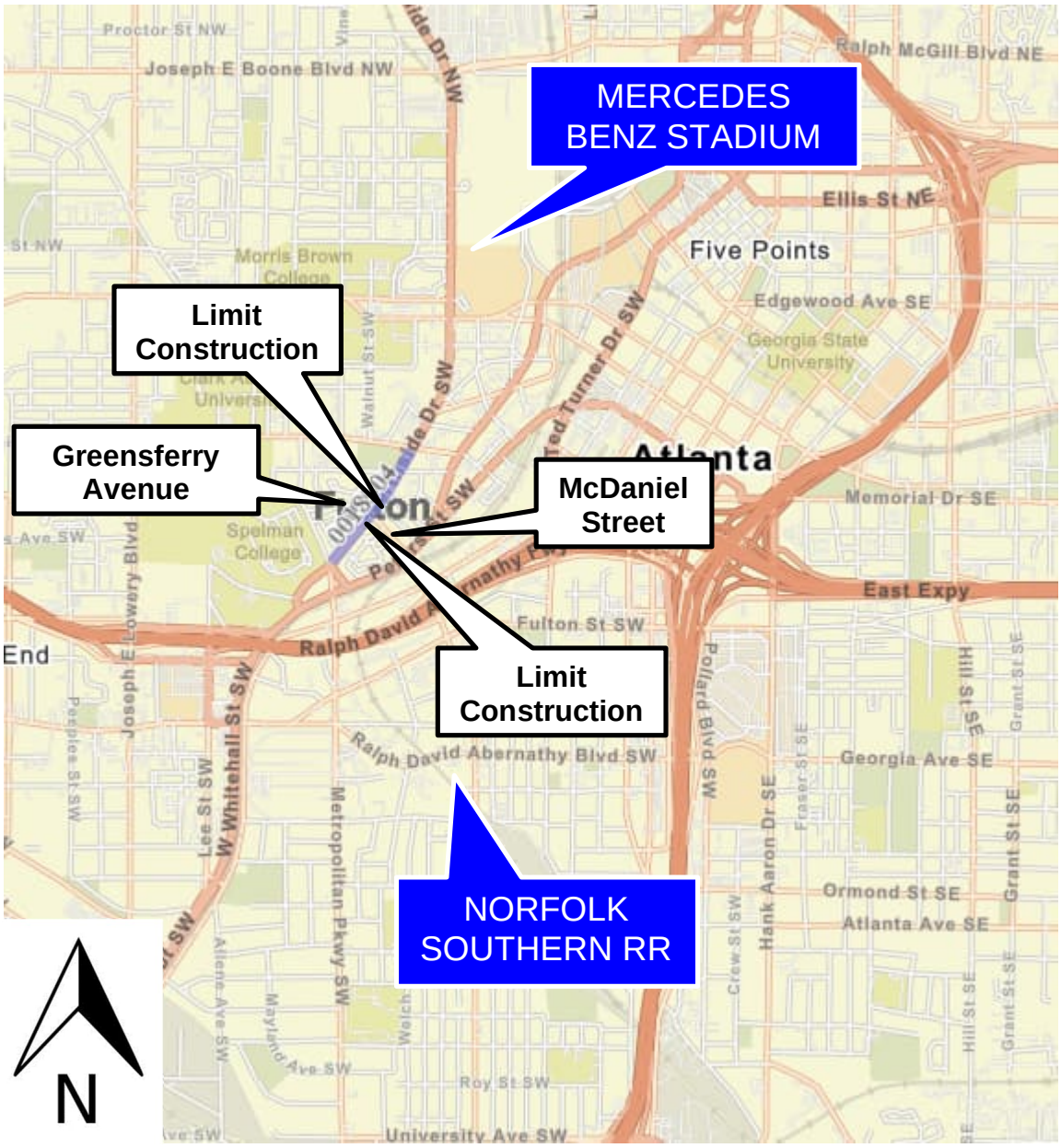
Approval:

Concur: Christopher Rudd — 05/09/2024 (Date)
GDOT Director of Engineering

Approve: Meg Pirkle ASH — Digitally signed by Andrew Heath DN: C=US, E=aheath@dot.ga.gov, O=Georgia DOT, OU=Chief Engineer Office, CN=Andrew Heath Date: 2024.05.10 15:17:46-04'00' — 5/10/2024 (Date)
GDOT Chief Engineer

* Albert Shelby, Director of Program Delivery, recommended for approval on 10-4-2023
* Alan Hood, Air Safety Data Program Manager, recommended for approval on 10-16-2023
* Marcela Coll, State Utilities Pre-Construction Manager, recommended for approval on 10-23-2023
* Joshua Taylor, Asst. State Project Review Engineer, recommended for approval on 2-27-2024
* Donn Digamon, State Bridge Engineer, recommended for approval on 11-2-2023

PROJECT LOCATION MAP



SR 3/ Northside Dr. @ Greensferry Ave and McDaniel Street

PLANNING & BACKGROUND DATA

Prepared By: *AECOM* **Date Completed:** *9/15/2023*
Project Justification Statement: The proposed project extends along State Route (SR) 3/Northside Drive, an urban principal arterial, at Greensferry Avenue and McDaniel Street. The goal of the project is to reduce crash frequency and severity for all road users, improve multimodal mobility, level of service, and connectivity, and improve corridor traffic operations for an area of Atlanta frequently traveled by residents and visitors using a variety of different travel modes. The project was programmed following outreach and study for the Northside Drive corridor Study PI# 0007557.

Safety:
In comparison to statewide averages, the injury crash rate of the study corridor has been rising from 2018-2020. In 2018, 2019, and 2020, the injury crash rate in the study corridor was more than seven (7) times, nine (9) times, and 16 times, respectively, that of urban principal arterials (NHS) statewide. The injury crash rate reached nearly 3,000 2,500 crashes per 100 million vehicle miles of travel in 2021 but dropped to just over half of that in 2022 at 1,596 crashes per 100 million vehicle miles of travel.

Table 1 - Corridor Crash Rates versus Statewide Averages [Crashes/100 Million Vehicle Miles of Travel]

Location	2018			2019			2020			2021			2022		
	Fatal Crashes	Injury Crashes	All Crashes	Fatal Crashes	Injury Crashes	All Crashes	Fatal Crashes	Injury Crashes	All Crashes	Fatal Crashes	Injury Crashes	All Crashes	Fatal Crashes	Injury Crashes	All Crashes
SR 3 (Northside Drive) at Greensferry Ave / McDaniel St (inclusive)	0.00	1044	2609	0.00	1333	3924	0.00	1912	4422	0.00	2986	6524	0.00	1596	5320
GDOT Statewide Crash Rate for Principal Arterial, Non-Freeway, NHS, Urban	1.46	141	581	1.41	137	559	1.70	118	469	Not Yet Available	Not Yet Available	Not Yet Available	Not Yet Available	Not Yet Available	Not Yet Available

Traffic Operations:
The highest existing year (2023) AADT for the study corridor was calculated as 29,375 vehicles per day. The Level of Service (LOS) for the of SR 3/Northside Drive at McDaniel Street/Greensferry Avenue was calculated as LOS B for the existing year volumes in the morning peak hour and LOS E for the afternoon peak hour. In the open year (2030) the “No Build” LOS was calculated as LOS C in the morning peak hour and LOS E for the afternoon peak hour. In the design year (2050) the “No Build” LOS was calculated as LOS C in the morning peak hour and LOS F for the afternoon peak hour.

For the preferred alternative, the open year LOS was calculated as LOS C in both the morning and afternoon peak hours. The design year was calculated as LOS D in the morning peak hour and LOS E for the afternoon peak hour. The operation improves over the "No Build" scenario in the afternoon peak of the design year, but it degrades slightly in the morning peak. This is not unexpected with a road reconfiguration, and the LOS is better than the minimum LOS E for an urban area. Operations for the preferred alternative satisfy guidelines and the intersection is expected to operate efficiently in the design year while being significantly safer for all modes of travel.

Existing conditions:
The existing roadway typical section of SR 3/Northside Drive at Greensferry Avenue and McDaniel Street is six lanes urban typical, consisting of three northbound lanes and three southbound lanes without a median present. The lanes vary in width from eleven to twelve feet. The existing roadway section of Greensferry Avenue and McDaniel Street is an urban typical, consisting of one eastbound and one westbound lane for McDaniel Street and an additional left turn lane on Greensferry Avenue. There is on street parking along McDaniel Street at the intersection with Peter Street. The sidewalks are five feet on both sides.

Existing Intersections in the project area include:
Greensferry Avenue/McDaniel Street (signalized)

Other projects in the area:

0018302 Northside Dr Greensferry Ave to Boone	Reconstruction/Rehabilitation	Project Tie in
0018343 Northside Dr @ Spelman Lane	Intersection Improvement	Project Tie in
0018303 Northside Dr @ Whitehall St	Intersection Improvement	Project Tie in
Cycle Atlanta 2.0 WE 2.2 and LMIG 2022	Concept Development	Project Tie in

MPO: *Atlanta TMA* **TIP #:** AT-003C
Congressional District(s): *5*

Federal Oversight: ☐ **PoDI** ☒ **Exempt** ☐ **State Funded** ☐ **Other**

Projected Traffic: 24 HR T: 5.0 % Current Year (2023): 29,375
Open Year (2030): 31,950 Design Year (2050): 40,525
Traffic data source: Field Counts (2023)
Traffic Projections Performed by: AECOM
Date approved by the GDOT Office of Planning: *1/18/2024*

AASHTO Functional Classification (Mainline): Principal Arterial

AASHTO Context Classification (Mainline): Urban

AASHTO Project Type (Mainline): Reconstruction

Is the project located on a NHS roadway? ☐ No ☒ Yes

Complete Streets - Bicycle, Pedestrian, and/or Transit Standards Warrants:
Warrants met: ☐ None ☒ Bicycle ☒ Pedestrian ☒ Transit
Pedestrian:
-Warrant #1: along corridors with pedestrian travel generators and destinations (i.e. residential neighborhoods, commercial areas, schools, public parks, transit stops and stations, etc.), or areas where such generators and destinations can be expected prior to the design year of the project
-Warrant #2: where there is evidence of pedestrian traffic (e.g., a worn path along roadside).
Bicycle:
-Warrant #3: along project alignments with bicycle travel generators and destinations.
Transit:
-Warrant #1: transit vehicles: on corridors served by fixed-route transit.
-Warrant #2: pedestrian transit users: within a ¾- mile pedestrian catchment area of an existing fixed-route transit facility (i.e., stop, station, or park-and-ride lot).

Is this a 3R (Resurfacing, Restoration, & Rehabilitation) Project? ☒ No ☐ Yes

Pavement Evaluation and Recommendations

Initial Pavement Evaluation Summary Report Required?		☒ No	☐ Yes
Feasible Pavement Alternatives:	☒ HMA	☐ PCC	☐ HMA & PCC

Is the project located on a Special Roadway or Network? ☒ No ☐ Yes

Do the limits of the project include one or more signalized intersections? ☐ No ☒ Yes

Is Federal Aviation Administration coordination anticipated? ☒ No ☐ Yes

DESIGN AND STRUCTURAL

Description of the proposed project:
The proposed project would provide two northbound and two southbound travel lanes with a raised concrete median on Northside Drive at the intersection. The project also provides a left turn, through-right, and right turn lane on McDaniel Street WB and a left turn, and through-right on Greensferry Avenue EB. To accommodate high pedestrian volumes in the area, the sidewalk is proposed to be eight feet on Northside Drive and vary five to eight feet on Greensferry Avenue/McDaniel Street. The proposed project will be coordinated with PIs 0018303 & 0018343 to the south and PI 0018302 to the north to determine construction timing and temporary conditions until the final build out can be constructed.

Major Structures:
None

Mainline Design Features:

US 19/US 29/US 41/SR 3/ Northside Drive	**Functional Classification:** *Principal Arterial*		
Feature	**Existing**	***Policy**	**Proposed**
Typical Section:			
- Number of Through Lanes	4		4
- **Lane Width(s) (-ft)**	11-12	**11-12**	11
- **Median Width (-ft) & Type**	None	**14 flush**	11 raised
- **Border Area Width (-ft) urban shoulder**	Left: 7 Right: 7	**16 Preferred** **10 min**	Left 14.5 Right: 14.5
- **Cross Slope (%)**	Unknown	**2**	**2**
- **Outside Shoulder Slope (%)**	Unknown	**2**	**2**
- **Sidewalks (-ft)**	5	**5**	Left: 8 Right: 8
- Auxiliary Lanes (# LTL, RTL or TWLTL / -ft width)	None		2 LTL – 11
- **Bike Accommodations**	None	**Bike Lane or Shared-use path**	None
Posted Speed (mph)	35		35
Design Speed (mph)	35	35	35
Minimum Horizontal Curve Radius (-ft)	Unknown	**371**	371
Maximum Superelevation Rate (%)	Unknown	**4**	**4**
Maximum Grade (%)	Unknown	**7**	**7**
Access Control	**Permitted**	**Permitted**	**Permitted**
Design Vehicle	BUS-40		BUS-40
Check Vehicle	WB-40		WB-40
Pavement Type	HMA		HMA

**According to current GDOT Design Policy if applicable*

Sideroad Design Features:

Greensferry Avenue	**Functional Classification:** *Local Road and Street*		
Feature	**Existing**	***Policy**	**Proposed**
Typical Section:			
- Number of Through Lanes	2		2
- **Lane Width(s) (-ft)**	11-12	**10-11**	11
- **Median Width (-ft) & Type**	None	**None**	None
- **Border Area Width (-ft) urban shoulder**	Left: 7 Right: 7	**16 Preferred** **10 min**	Left 11.5-14.5 Right: 11.5-14.5
- **Cross Slope (%)**	Unknown	**2**	**2**
- **Outside Shoulder Slope (%)**	Uknown	**2**	**2**
- **Sidewalks (-ft)**	5	**5**	Left: 5-8 Right: 5-8
- Auxiliary Lanes (# LTL, RTL or TWLTL / -ft width)	None		1 LTL – 11
- **Bike Accommodations**	None	**Bike Lane or Shared-use path**	None
Posted Speed (mph)	25		25
Design Speed (mph)	25	25	25
Minimum Horizontal Curve Radius (-ft)	Unknown	**371**	371
Maximum Superelevation Rate (%)	Unknown	**4**	**4**
Maximum Grade (%)	Unknown	**7**	**7**
Access Control	**Permitted**	**Permitted**	**Permitted**
Design Vehicle	BUS-40		BUS-40
Check Vehicle	WB-40		WB-40
Pavement Type	HMA		HMA

**According to current GDOT Design Policy if applicable*

Sideroad Design Features:

McDaniel Street	**Functional Classification:** *Local Road and Street*		
Feature	**Existing**	***Policy**	**Proposed**
Typical Section:			
- Number of Through Lanes	2		2
- **Lane Width(s) (-ft)**	11-12	**10-11**	11
- **Median Width (-ft) & Type**	None	**None**	None
- **Border Area Width (-ft) urban shoulder**	Left: 7 Right: 7	**16 Preferred** **10 min**	Left 11.5–14.5 Right: 11.5-14.5
- **Cross Slope (%)**	Unknown	**2**	**2**
- **Outside Shoulder Slope (%)**	Uknown	**2**	**2**
- **Sidewalks (-ft)**	5	**5**	Left: 5-8 Right: 5-8
- Auxiliary Lanes (# LTL, RTL or TWLTL / -ft width)	None		1 LTL – 11 1 RTL – 11
- **Bike Accommodations**	None	**Bike Lane or Shared-use path**	None
Posted Speed (mph)	35		35
Design Speed (mph)	35	35	35
Minimum Horizontal Curve Radius (-ft)	Unknown	**371**	371
Maximum Superelevation Rate (%)	Unknown	**4**	**4**
Maximum Grade (%)	Unknown	**7**	**7**
Access Control	**Permitted**	**Permitted**	**Permitted**
Design Vehicle	BUS-40		BUS-40
Check Vehicle	WB-40		WB-40
Pavement Type	HMA		HMA

**According to current GDOT Design Policy if applicable*

Design Exceptions/Design Variances to FHWA or GDOT Controlling Criteria anticipated:
None

Design Variances to GDOT Standard Criteria anticipated:
Lateral Offset to Obstruction - Undetermined
Median Usage - Undetermined
Bike Accommodations – Undetermined

Lighting Proposed: ☒ No ☐ Yes
Any existing light that is disturbed by construction will be replaced but no new lighting is proposed.

Off-site Detours Anticipated: ☒ No ☐ Undetermined ☐ Yes
If yes: Roadway type to be closed: ☐ Local Road ☐ State Route
Detour route selected: ☐ Local Road ☐ State Route
District concurrence with detour route: ☐ No/Pending ☐ Received

Detour presented to public: ☐ No ☐ Yes

Transportation Management Plan [TMP] Required: ☐ No ☒ Yes Non-Significant

INTERCHANGES AND INTERSECTIONS

Interchanges/Major Intersections:
Greensferry Avenue/McDaniel Street (signalized)

Intersection Control Evaluation (ICE) Required: ☐ No ☒ Yes

Roundabout Concept Validation Required: ☒ No ☐ Yes ☐ Completed

UTILITY AND PROPERTY

Railroad Involvement: None

Utility Involvements:
Georgia Power Distribution
Comcast
Verizon MCI
City of Atlanta Water
Southern Company Gas
AT&T Distribution

SUE Required: ☐ No ☒Yes

Public Interest Determination Policy and Procedure recommended: ☒ No ☐ Yes

Right-of-Way (ROW): Existing width: 90ft. Proposed width: 120ft.
Required Right-of-Way anticipated: ☐ None ☒ Yes ☐ Undetermined
Easements anticipated: ☐ None ☒ Temporary ☒ Permanent ***** ☐ Utility ☐ Other
***** *Permanent easements include the right to place utilities.*

Anticipated total number of impacted parcels:		8
Displacements anticipated:	Businesses:	0
	Residences:	0
	Other:	0
Total Displacements:		0

Location and Design approval: ☐ Not Required ☒ Required

Impacts to federally managed property anticipated: ☒ No ☐ Yes ☐ Undetermined

ENVIRONMENTAL & PERMITS

Anticipated Environmental Document: *NEPA ~ CE*

Level of Environmental Analysis – The environmental considerations are based on:

☒ A preliminary desktop or screening level environmental analysis and are subject to revision after the completion of resource identification, delineation, and agency concurrence.

☐ Completion of resource identification and delineation and are subject to revision after the completion of agency concurrence.

☐ Completion of resource identification, delineation, and agency concurrence.

GDOT MS4 Permit Compliance – Is the project located in a GDOT MS4 area? ☐ No ☒ Yes

If yes, is the GDOT MS4 Permit anticipated to apply to all or part of this project? ☒ No ☐ Yes

Is ecology water quality mitigation anticipated? ☒ No ☐ Yes

Will a Non-MS4 Detention Report be required during preliminary design? ☒ No ☐ Yes

Environmental Permits/Variances/Commitments/Coordination anticipated:

Permit/Variance/Commitment/ Coordination Anticipated	No	Yes	Remarks
• U.S. Coast Guard Permit	☒	☐	
• Forest Service/NPS	☒	☐	
• CWA Section 404 Permit	☒	☐	No federal waters in the project Environmental Survey Boundary (ESB)
• Tennessee Valley Authority Permit	☒	☐	
• USACE Real Estate Outgrant	☒	☐	
• Buffer Variance	☒	☐	No waters in the project ESB
• Coastal Zone Management Coordination	☒	☐	
• NPDES	☐	☒	GAR100002 is needed due to land disturbance of over 1 acre
• FEMA	☒	☐	
• Cemetery Permit	☒	☐	
• Other Permits	☒	☐	
• Other Commitments	☐	☒	Special Provision 107.23H is anticipated to be required for tri-colored bat (*Perimyotis subflavus*).
• Other Coordination	☒	☐	

Is a PAR required? ☒ No ☐ Yes ☐ Completed *Date*

Environmental Comments and Information:
NEPA/GEPA: The project utilizes federal funds. A Categorical Exclusion (CE) is anticipated for this project. However, the project will be evaluated for eligibility for a Programmatic Categorical Exclusion (PCE) after Resource Identification is completed. Environmental Justice (EJ) populations are anticipated within the Environmental Survey Boundary (ESB). Two Recognized Environmental Conditions (RECs) have been identified within the ESB (auto repair shop at 252 Northside Dr SW, Atlanta, GA 30313; and gas station at 294 Northside Dr SW, Atlanta, GA 30313); a Phase I Environmental Site Assessment (ESA)/Hazmat Study is anticipated. No non-historic Section 4(f) resources have been identified within the ESB. There is a risk that known and potential historic resources within the ESB may receive impacts that may require Individual Section 4(f) evaluation.

A desktop review of the proposed project area identified numerous community resources, including three Historically Black Colleges and Universities (HBCU) campuses: Spelman College, Morehouse School of Medicine, and Clark Atlanta University. Other nearby community resources include the Flipper Temple A.M.E. Church, John Hope Homes Community Center, Cleopas R Johnson Park, Atlanta Baptist Rescue Mission, Russell Innovation Center for Entrepreneurs, and Georgia Technical University.

Ecology: An Ecology Resource Survey Report was completed for the larger Northside corridor project (PI 0007557) and transmitted to the Federal Highway Administration on November 20, 2015. No protected species habitat or jurisdictional waters of the U.S. were identified as present within the project area as a result of the survey.

A desktop review was conducted using the National Wetland Inventory (NWI) maps, National Hydrology Dataset (NHD), ArcGIS aerial base maps, the Fulton County soils map, the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool, the Georgia's Natural, Archaeological, and Historic Resources Geographic Information System (GNAHRGIS), and the Endangered Species Act (ESA) Section 7 Mapper for the National Oceanic and Atmospheric Administration (NOAA) Fisheries Southeast Region.

According to desktop analysis, there are no streams, open waters, or wetlands located within the project's ESB. Therefore, neither a Georgia Environmental Protection Division (EPD) buffer variance nor a United States Army Corps of Engineers (USACE) Clean Water Act (CWA) Section 404 permit is anticipated since no waters of the United States (WOTUS) are anticipated within the ESB. Suitable habitat is not anticipated for any federal or state protected species.

Suitable habitat is anticipated for the federally proposed endangered tri-colored bat (*Perimyotis subflavus*) and the state rare peregrine falcon (*Falco peregrinus*). If any culverts 3 feet or greater in height or diameter [excluding corrugated metal pipes (CMP)] are identified within the ESB, a culvert survey must be conducted during the appropriate winter survey season. There are two (2) tri-colored bat occurrences reported in GNAHRGIS and documented within three miles of the proposed site: one occurrence 2.9 miles northwest of the proposed project and one historic occurrence reported on-site [33.754971, -84.390018 (actual location is approximately 0.98 miles northeast of the proposed project)]. There is one (1) occurrence of peregrine falcon reported in GNAHRGIS and documented within three miles of the proposed site: 1.4 miles northeast of the proposed project. Coordination with Georgia Department of Natural Resources (GADNR) may be necessary for peregrine falcon. Potential impacts to these species may occur and will be further assessed in an Assessment of Effects (AOE) report. Informal Section 7 consultation with USFWS is anticipated for tri-colored bat based on the inclusion of Special Provision (SP) 107.23H which may include, but is not limited to, seasonal tree clearing restrictions, special lighting requirements, reporting requirements, and/or seasonal restrictions for work on culverts and/or bridges should a bat be found utilizing it.

An updated ecology resource field survey would be required for the project to confirm the previous findings and assess any areas not covered in previous surveys.

History: A desktop review for historic resources, comprised of buildings, districts, structures, sites, and objects constructed before 1974, was conducted within the ESB for PI 0018304 and corresponding viewshed from the furthest extent of the ESB. This review included the National Register of Historic Places (NRHP), National Historic Landmarks (NHL), GNAHRGIS, 2012 Georgia Historic Bridge Survey (GHBS), U.S. Geological Survey (USGS) topographic maps, Nationwide Environmental Title Research (NETR) aerial photography, Google Street View, and Georgia's Historical Marker program. The ESB falls within the limits of a 5-mi. corridor study of Northside Drive under PI 0007557. Under that project, a field survey was completed in 2015 for properties that were 45 years of age or older, culminating in a Historic Resources Survey Report that was approved in 2018. As a result of these identification efforts, one (1) property listed in the NRHP, the Atlanta University Center Historic District, was identified within the proposed project's ESB. One (1) previously identified, NRHP-eligible historic resource, McCord Sandwich Shop, is in the ESB; this was identified and evaluated previously on PI 0007557. In addition, five (5) other historic properties in the ESB were identified as ineligible for the NRHP on PI 0007557. Due to the age of the previous studies, additional survey is required. One (1) historic property was identified within the proposed project's ESB that requires field assessment and evaluation for NRHP eligibility as outlined in 36 CFR Part 60.4 of the National Historic Preservation Act. State Historic Preservation Officer (SHPO) concurrence required.

Archeology: A desktop review for archaeological resources was conducted within the PI No. 0018304 ESB. This review included the National Register of Historic Places (NRHP), Georgia's Natural, Archaeological, and Historic Resources Geographic Information System (GNAHRGIS), Fulton County tax assessor's record, U.S. Geological Survey (USGS) topographic maps, Nationwide Environmental Title Research (NETR) historic aerial photography, Google Street View, and Georgia's Historical Marker program. A Phase I archaeological survey that included a portion of the survey area was conducted in 2020 under PI 0007557. As a result of these identification efforts, no archaeological sites or cemeteries were identified within the survey area. Thirteen additional sites were identified within one kilometer of the ESB. No non-extant structures were identified through historic aerial research; therefore, there is a low probability of additional archaeological sites within the ESB. The project area was reviewed for the presence of historically documented trails, roads, and battlefields. A historic streetcar rail line associated with the Atlanta, West End & McPherson Barracks Railway (1871 – 1891) located in the vicinity of the project area was identified during background research. The known course of the historic Atlanta, West End & McPherson Barracks Railway does not extend into the ESB; therefore, Ground Penetrating Radar (GPR) is not anticipated.

An updated archaeology resource field survey and report would be required to confirm the previous findings and assess any areas not covered in previous surveys.

Air Quality:

Is the project located in an Ozone Non-attainment area? ☐ No ☒ Yes

Is a Carbon Monoxide hotspot analysis required? ☒ No ☐ Yes

The project is part of the FY 2020-2025 Transportation Improvement Program (TIP); **AT-003C.** The project is exempt from Air Quality Analysis (40 CFR 93).

Noise Effects: A noise study would be required for this project. If no change in alignment or widening is required, a Type III Screening is anticipated. Traffic/Design information is required to determine correct level of Noise study.

Public Involvement: Ongoing public involvement has taken place since 2015 to inform and educate the public as the Northside Drive corridor project has developed. This included meetings with Neighborhood Planning Units C, D, K, L, M, T, and X; public input meetings and workshops; and citizen advisory committee meetings. A virtual Public Information Open House (PIOH) is anticipated to inform the public the proposed design for this segment of the corridor. Due to the presence of community resources and EJ populations located within the proposed project corridor, supplemental in-person outreach to inform the public of the PIOH and to gather community feedback is recommended. All additional public outreach will be scheduled between November 2023 and December 2024.

Major stakeholders:

GDOT
City of Atlanta
Atlanta Regional Commission
Spelman College
Central Atlanta Progress
Mercedes Benz Stadium
World Congress Center
West End CID
Morehouse School of Medicine
Clark Atlanta University
Georgia Tech University
Property owners (The Villages of Castleberry Hills apartment complex)
MARTA
The public

COORDINATION, ACTIVITIES, RESPONSIBILITIES, AND COSTS

Constructability/Construction:
Construction is expected under traffic.
Seasonal restrictions likely to apply in this area.
High traffic volumes may require limited peak hour construction and/or require off-hour construction.
The project is shown as a stand-alone project; however, there are overlapping features with PI#0018302 Greensferry Avenue to Boone, PI # 0018303 Whitehall Street, and PI# 0018343 Spelman Lane that will be reviewed during preliminary design and limits adjusted accordingly.

Project Meetings:
Initial Concept Team Meeting – 06/12/23
Concept Team Meeting – 08/14/23

Other coordination to date: None

Project Activity	Party Responsible for Performing Task(s)
Concept Development	AECOM
Design	AECOM
Right-of-Way Acquisition	GDOT-D7
Utility Coordination (Preconstruction)	GDOT-D7/AECOM
Utility Relocation (Construction)	Utility Owners
Letting to Contract	GDOT- Bidding Administration
Construction Supervision	GDOT-D7
Providing Material Pits	Contractor
Providing Detours	Contractor
Environmental Studies, Documents, & Permits	AECOM
Environmental Mitigation	GDOT – Environmental Services
Construction Inspection & Materials Testing	GDOT – D7, OMAT

Project Cost Estimate Summary and Funding Responsibilities:						
	PE Activities		ROW	Reimbursable Utilities	CST*	Total Cost
	PE Funding	Section 404 Mitigation				
Date of Estimate:	*7/12/2023*	*7/12/2023*	*8/4/2023*	*7/13/2023*	*12/18/2023*	
Proposed Funding Source(s):	State/Fed.	State/Fed.	State/Fed.	State/Fed.	State/Fed.	
Programmed Cost:	$457,000		$1,870,000	$0	$1,130,000	$3,457,000
Estimated Cost:	$457,000	$0	$2,198,000	$810,000	$1,162,098	$4,627,098
Total Cost Difference:						$1,170,098

*CST Cost includes: Construction, Engineering and Inspection, Contingencies and Asphalt Fuel Price Adjustment.

ALTERNATIVES DISCUSSION

Alternative selection:

Preferred Alternative: Resurfacing and adding medians. Providing wider sidewalks. Road diet and widening. Details: 11' raised medians, 2-11' northbound lanes, 2-11' southbound lanes, 2-11' left turn lanes, 5'-8' sidewalks, 1-11' left, through-right, and right lane westbound. 1-11' left, through-right turn lane, and travel lane eastbound.

Estimated Property Impacts:	**8**	**Estimated Total Cost:**	**$4,627,098**
Estimated ROW Cost:	**$2,198,000**	**Estimated CST Time:**	**12-18 Months**

Rationale: This alternative best achieves the project justification statement by providing the most space for pedestrians and efficient traffic operations while balancing property impacts and construction costs. This alternative expects the intersection to operate at a LOS C in the AM and LOS C in the PM with an AM delay of 22.9 seconds and PM delay of 28.8 seconds for the open year.

Alternative 1: Upgraded signal. No widening.
Details: 2-11' northbound lanes, 2-11' southbound lanes, 2-11' southbound left turn lanes, 1-11' northbound left turn lane, 5'-8' sidewalks. 1-11' left lane, through-right eastbound, 1-11' right lane, through right westbound.

Estimated Property Impacts:	**0**	**Estimated Total Cost:**	**$2,498,000**
Estimated ROW Cost:	**$0**	**Estimated CST Time:**	**N/A**

Rationale: This alternative does not achieve the project justification statement, because it does not address the poor pedestrian level of service, nor does it provide the opportunities for streetscaping and for better separating pedestrians from motorized traffic along the corridor. This alternative expects the intersection to operate with an AM delay of 23.3 seconds and PM delay of 118.4 seconds.

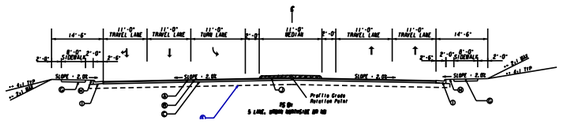
No-Build Alternative: No proposed changes. See Mainline Design Features table for details on existing roadway characteristics.			
Estimated Property Impacts:	**0**	**Estimated Total Cost:**	**$0**
Estimated ROW Cost:	**$0**	**Estimated CST Time:**	**N/A**
Rationale: This alternative does not achieve the project justification statement, because it does not address the poor pedestrian level of service, nor does it provide the opportunities for streetscaping and for better separating pedestrians from motorized traffic along the corridor. This alternative operates at a LOS C in AM and LOS E in PM with an AM delay of 20.6 and PM delay of 75.4 for the open year.			

LIST OF ATTACHMENTS/SUPPORTING DATA

1. Concept Layout – Preferred Alternative
2. Typical sections
3. Detailed Cost Estimates:
    a. Construction Cost Estimate
    b. Right-of-Way
    c. Utilities
4. Concept Utility Report
5. Crash summaries and diagrams
6. Traffic diagrams or projections
7. Summary of TE Study and/or Signal Warrant Analysis
8. ICE Report
9. MS4 Concept Report Summary
10. Minutes of Concept Meetings
11. Other Meeting Minutes

Concept Layout

GDOT



LEGEND

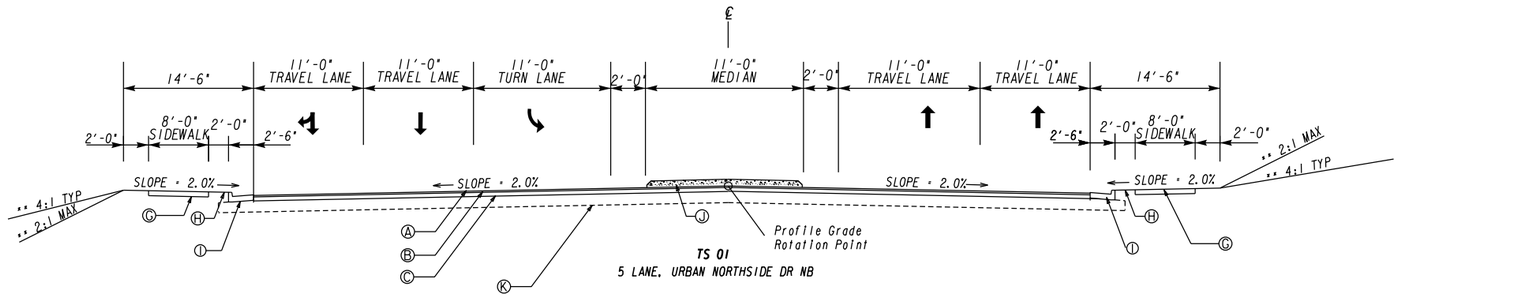
PROPOSED EDGE OF PAVEMENT
PROPOSED CURB AND GUTTER
PROPOSED SIDEWALK
PROPOSED RETAINING WALL
PROPOSED RIGHT OF WAY
EXISTING PROP LINE
EXISTING SIGNAL
PERMANENT EASESMENT

SCALE IN FEET

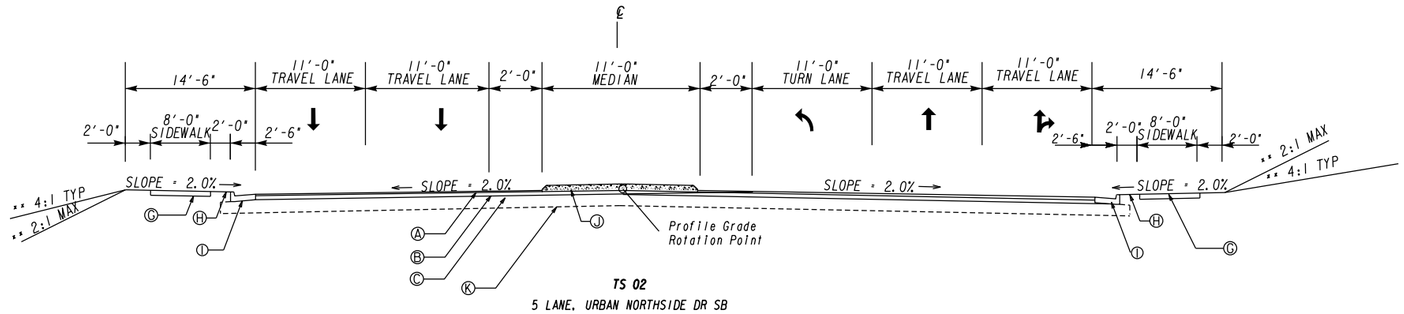
0 75 150 300

NORTHSIDE DRIVE AT GREENSFERRY AVENUE/ MCDANIELS STREET CONCEPT LAYOUT

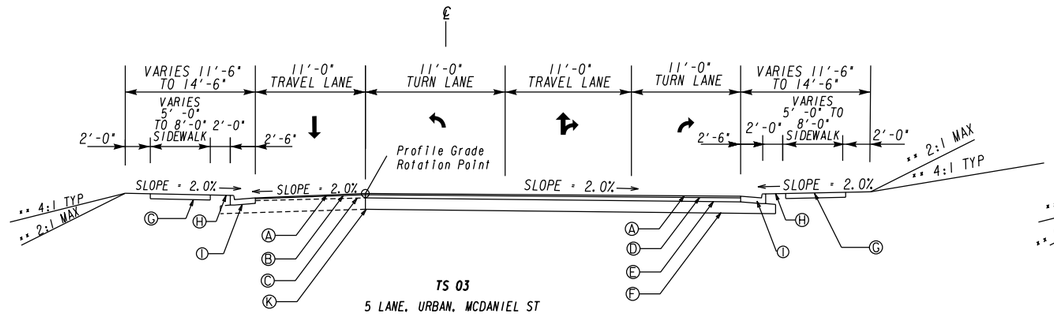
Typical Sections



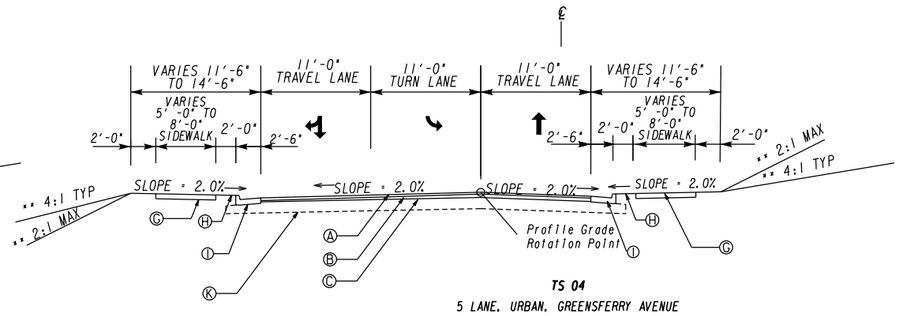
TS 01
5 LANE, URBAN NORTHSIDE DR NB



TS 02
5 LANE, URBAN NORTHSIDE DR SB



TS 03
5 LANE, URBAN, MCDANIEL ST



TS 04
5 LANE, URBAN, GREENSFERRY AVENUE

REQUIRED PAVEMENT

- (A) RECYCLED ASPH CONC 12.5 mm SUPERPAVE, GP 2 ONLY, INCL POLYMER MODIFIED BITUM MATL & H LIME, 165 LB/SY
- (B) MILLED ASPHALT CONCRETE PAVEMENT, VARIABLE DEPTH
- (C) EXISTING PAVEMENT
- (D) RECYCLED ASPH CONC 19 mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME 220 LB/SY
- (E) RECYCLED ASPH CONC 25 mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME 440 LB/SY
- (F) GR AGGR BASE CRS, 6 INCH, INCL MATL
- (G) CONCRETE SIDEWALK, 4 IN (TYP). USE 8 IN ON PEDESTRIAN RAMPS AND INTERSECTION RADIUS RETURNS
- (H) SOD
- (I) TP 2 (TYP), 8"x30"
- (J) CONCRETE INTEGRAL MEDIAN, 7.5 IN, TP 7 CURB FACE
- (K) ASPHALT CONCRETE PATCHING (AS NEEDED)

AECOM

NOT TO SCALE

REVISION DATES

NORTHSIDE DRIVE AT MCDANIEL ST

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		
CORRECTED:		DATE:		
VERIFIED:		DATE:		

Detailed Cost Estimates

GDOT Georgia Department of Transportation

4/10/2024

Project Cost Estimate

Processed on: 4/10/2024 3:46:36 PM

Concept Name: 0018304
Concept Description: Northside Drive at McDaniel St
Spec Year: 21
Item History: BHP-ALL
Cost Estimate Phase: 2-DE

Cost Estimate Name: 0018304
Adhoc Pricing Total: $0.00
Typical Section Total: $0.00
Estimate Total: $1,000,751.10

ITEMS FOR CONCEPT NAME 0018304

0100 - Roadway

Line Number	Item	Quantity	Units	Price	Description	Amount
0095	150-1000	1	LS	150,000.00	TRAFFIC CONTROL - - PI # 0018304	$150,000.00
0200	156-0100	1	LS	5,000.00	GPS DATA COLLECTION AND SUBMITTAL	$5,000.00
0005	210-0100	1	LS	150,000.00	GRADING COMPLETE - - PI # 0018304	$150,000.00
0175	310-1101	163	TN	62.25	GR AGGR BASE CRS, INCL MATL	$10,146.34
0195	402-1801	100	TN	315.00	RECYCLED ASPH CONC PATCHING, INCL BITUM MATL	$31,500.00
0165	402-3121	95	TN	184.33	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	$17,511.40
0170	402-3190	48	TN	189.08	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2,INCL BITUM MATL & H LIME	$9,075.77
0010	402-4510	340	TN	192.38	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL POLYMER-MODIFIED BITUM MATL & H LIME	$65,410.20
0015	413-0750	349	GL	5.94	TACK COAT	$2,073.25
0020	432-5010	3674	SY	8.68	MILL ASPH CONC PVMT, VARIABLE DEPTH	$31,907.33
0190	441-0018	39	SY	120.84	DRIVEWAY CONCRETE, 8 IN TK	$4,712.62
0025	441-0104	261	SY	73.69	CONC SIDEWALK, 4 IN	$19,231.93
0150	441-0108	200	SY	124.81	CONC SIDEWALK, 8 IN	$24,961.99
0030	441-0754	252	SY	129.06	CONCRETE MEDIAN, 7 1/2 IN	$32,522.86
0180	441-4020	48	SY	89.38	CONC VALLEY GUTTER, 6 IN	$4,290.13
0185	441-4030	48	SY	110.71	CONC VALLEY GUTTER, 8 IN	$5,313.93

0100 - Roadway

Line Number	Item	Quantity	Units	Price	Description	Amount
0035	441-6222	1160	LF	35.59	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	$41,278.69
0040	634-1200	19	EA	205.56	RIGHT OF WAY MARKERS	$3,905.70
0100 Total						$608,842.14

0200 - Drainage

Line Number	Item	Quantity	Units	Price	Description	Amount
0045	009-3000	1	LS	30,000.00	MISCELLANEOUS CONSTRUCTION	$30,000.00
0200 Total						$30,000.00

0300 - Temporary Erosion Control

Line Number	Item	Quantity	Units	Price	Description	Amount
0050	009-3000	1	LS	30,000.00	MISCELLANEOUS CONSTRUCTION	$30,000.00
0055	163-0232	0.10	AC	1,151.62	TEMPORARY GRASSING	$115.16
0060	163-0240	2	TN	467.32	MULCH	$934.64
0065	700-8000	1	TN	1,583.28	FERTILIZER MIXED GRADE	$1,583.28
0300 Total						$32,633.08

0400 - Permanent Erosion Control

Line Number	Item	Quantity	Units	Price	Description	Amount
0070	700-6910	1	AC	2,297.68	PERMANENT GRASSING	$2,297.68
0075	700-7000	2	TN	302.89	AGRICULTURAL LIME	$605.79
0080	700-8000	1	TN	1,583.28	FERTILIZER MIXED GRADE	$1,583.28
0085	700-8100	50	LB	4.44	FERTILIZER NITROGEN CONTENT	$221.95
0090	700-9300	256	SY	14.15	SOD	$3,622.43
0400 Total						$8,331.13

0600 - Signing

Line Number	Item	Quantity	Units	Price	Description	Amount
0160	009-3000	1	LS	10,000.00	MISCELLANEOUS CONSTRUCTION	$10,000.00
0600 Total						$10,000.00

0610 - Pavement Marking

Line Number	Item	Quantity	Units	Price	Description	Amount
0100	653-0110	2	EA	104.96	THERMOPLASTIC PVMT MARKING, ARROW, TP 1	$209.91
0105	653-0120	5	EA	128.61	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	$643.03
0110	653-0130	4	EA	196.86	THERMOPLASTIC PVMT MARKING, ARROW, TP 3	$787.46
0115	653-1704	268	LF	10.51	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	$2,816.14
0120	653-1804	1135	LF	3.30	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	$3,748.52
0125	653-2501	0.35	LM	3,194.15	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	$1,117.95
0130	653-2502	0.14	LM	3,572.68	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	$500.18
0135	653-3501	262	GLF	0.88	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	$229.52
0140	654-1001	20	EA	9.11	RAISED PVMT MARKERS TP 1	$182.11
0145	654-1003	100	EA	7.10	RAISED PVMT MARKERS TP 3	$709.93
0610 Total						$10,944.75

0700 - Signals

Line Number	Item	Quantity	Units	Price	Description	Amount
0155	647-1000	1	LS	300,000.00	TRAFFIC SIGNAL INSTALLATION NO - - Northside Drive @ Greensferry Avenue/McDaniel Street	$300,000.00
0700 Total						$300,000.00

ADHOC PRICING FOR CONCEPT NAME 0018304

TYPICAL SECTIONS FOR CONCEPT NAME 0018304

TOTALS FOR CONCEPT NAME 0018304

ITEMS COST:	$1,000,751.10
TYPICAL SECTION:	$0.00
AD-HOC PRICING:	$0.00
ESTIMATED COST:	$1,000,751.10
CONTINGENCY PERCENT:	
ENGINEERING AND INSPECTION:	
ESTIMATED COST WITH CONTINGNECY AND E&I:	

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Georgia Department of Transportation

Interoffice Memo

FILE

PI NUMBER	0018304	PROJECT DESCRIPTION	Reconstruction/Rehabilitation Nortside Drive at McDaniel St.
OFFICE	7		
DATE	Wednesday, December 13, 2023		

From: Kimberly N. Nesbitt, State Program Delivery Administrator

To: Erik Rohde, P.E., State Project Review Engineer
via email Mailbox: CostEstimatesandUpdates@dot.ga.gov

Subject: **REVISIONS TO PROGRAMMED COSTS**

Project Manager:	Sola Adekonojo
Management Let Date:	6/15/2026
Management Right of Way Date:	12/15/2024

Cost Estimate Review Iteration

Date of Submittal #1	
Date of Submittal #2	
Date of Submittal #3	

Summary of Programmed Costs and Proposed Revised Costs:

Estimate Type	Cost Estimate Amounts (T-Pro Without Inflation)	Last Estimate Date	Revised Cost Estimate
CONSTRUCTION	$1,130,000.00		$1,162,098.01
RIGHT OF WAY	$1,870,000.00		$2,198,000.00
UTILITIES			$810,000.00

Explanation for Cost Change and Contingency Justification:

(Please note below if the unit prices presented in the construction cost estimate were reviewed or derived by professional estimators external to GDOT.)

Attachments:

Georgia Department of Transportation

Interoffice Memo

Design Phase Leader Validation of Final QC/QA for Construction Cost Estimate Used In This Revision to Programmed Costs:

Consultant Company or GDOT Design Office:	AECOM
Printed Name:	Travis McClam
Title:	Lead Roadway Engineer
Signature:	
Date:	4/16/24

FOR PROJECTS WITH A LOCAL SPONSOR	
If the project has a local sponsor, the project manager should ensure that the local authority completes the following validation indicating that it has reviewed the construction cost estimate and whether it is in concurrence with the construction costs presented.	
Please select the appropriate validation below upon review of the cost estimate: ☐ I acknowledge that I have reviewed the project construction cost estimate and concur with the costs presented. ☐ I acknowledge that I have reviewed the project construction cost estimate but do not concur with the costs presented.	
Please provide an explanation for non-concurrence.	
Local Authority Name and Title:	
Local Authority Signature:	
Date:	

Georgia Department of Transportation

Interoffice Memo

Cost Estimate Worksheet:

CONSTRUCTION COST ESTIMATE (Required base estimate entered from AASHTOWare Project Estimation and should not include E&I). →	**A**	$ 1,000,751.10
ENGINEERING AND INSPECTION (The default E&I percentage is 5.0%, but may be adjusted per project scope.) →	**D**	$ 50,037.56

Construction Cost	E&I Percentage	E&I Cost
B	C	D = B x C
$ 1,000,751.10	5%	$ 50,037.56

CONTINGENCY (Refer to the Risk and Contingencies Table included in GDOT Policy 3A-9 Cost Estimating Purpose) →	**I**	$ 105,078.87

Construction Cost	E&I Cost	Construction + E&I	Contingency Percentage	Contingency Cost
E	F	G = E + F	H	I = G x H
$ 1,000,751.10	$ 50,037.56	$ 1,050,788.66	10%	$ 105,078.87

ASPHALT FUEL PRICE ADJUSTMENT (Leave blank if not applicable) →	**Q**	$ 6,230.49

Date	Apr 2024
Regular Unleaded	$3.338/ GAL
Diesel	$3.988/ GAL
Liquid AC	$600.00/ TON

Current Asphalt Fuel Index Prices can be found at the link below:

https://www.dot.ga.gov/GDOT/pages/AsphaltCementFuelPriceIndex.aspx

		Tons	Percentage of Asphaltic Concrete	Tons of Asphaltic Concrete	Total Monthly Tonnage of Asphalt Cement (TMT)	Monthly Asphalt Cement Price month project let (APL)	Max. Cap	Monthly Asphalt Cement Price month placed (APM)	Price Adjustment (PA)
Liquid AC	Description	J	K	L = J x K	M = Sum of Columns L, T & W	N	O	P = (N x O)+N	Q = [(P - N) / N)] x M x N
	Leveling				17.31 TN	$600.00/ TON	60%	$ 960.00	$ 6,230.49
	Patching								
	9.5 mm SP								
	12.5 OGFC								
	12.5 PEM								
	12.5 mm SP	322.00 TN	5.00%	16.10 TN					
	19 mm SP								
	25 mm SP								

		Tack Coat	GL/TN	Tons
Bituminous Tack Coat	Description	R	S	T = R/S
	Tack Coat	281.00 GL	232.8234 GL/TN	1.21 TN

		SY	GL/SY	TN
Bituminous Tack Coat (Surface Treatment)	Description	U	V	W = (U x V) / (232.8234 GL/TN)
	Single Surface Treatment		0.20 Gl/SY	
	Double Surface Treatment		0.44 Gl/SY	
	Triple Surface Treatment		0.71 Gl/SY	

CONSTRUCTION TOTAL COST →	**X = A+D+I+Q**	$ 1,162,098.01
RIGHT OF WAY COST →	**Y**	$ 2,198,000.00
UTILITIES COST (Provided by Utility Office) →	**Z = Sum of Reimbursable Costs**	$ 810,000.00

Utility Owner	Reimbursable Cost	Utility Owner	Reimbursable Cost
Georgia Power Distribution	$ 810,000.00		

GEORGIA DEPARTMENT OF TRANSPORTATION
PRELIMINARY ROW COST ESTIMATE SUMMARY

Date: 8/4/2023 Project: Northside Dr @ McDaniel Street
Revised: County: Fulton
PI: 18304
Description: SR 3/US 19 @ CS 2368/Greensferry Avenue/McDaniel Street
Project Termini:

Existing ROW: Varies
Parcels: 8 Required ROW: Varies

Land and Improvements		$1,897,500.00
Proximity Damage	*$0.00*	
Consequential Damage	*$100,000.00*	
Cost to Cures	*$20,000.00*	
Trade Fixtures	*$65,000.00*	
Improvements	*$450,000.00*	
Valuation Services		$109,375.00
Legal Services		$80,400.00
Relocation		$24,000.00
Demolition		$15,000.00
Administrative		$71,000.00
TOTAL ESTIMATED COSTS		$2,197,275.00
TOTAL ESTIMATED COSTS (ROUNDED)		***$2,198,000.00***

Prepared By: Emory D. Dixon III August 4, 2023
Print Name Signature Date

Cost Estimation Supervisor : Valencia Carter Valencia Carter 8/8/2023
Print Name Signature Date

NOTE: Superviser is only attesting that the estimate was completed using the correct information provided for the the project. The Supervisor is not attesting to property values or the accuracy of the market value estimations provided in this report. No Market Appreciation is included in this Preliminary Cost Estimate.

Comments: The project checklist shows no disp;acements. However, a portion of the building on Parcel 6 lies within the proposed RW and is a displacement

allsop

Georgia Department of Transportation

Interoffice Memo

FILE

Project No: **n/a**
County **Fulton**
P.I.# **0018304**
Office: **D7 - Chamblee**
Date: **7/13/2023**

Description: **SR 3 / US 19 @ Greensferry Ave / McDaniel St.**

FROM Shun L. Pringle, District Utility Manager

TO Olusola Adekonojo, Project Manager

SUBJECT **PRELIMINARY UTILITY COST ESTIMATE**

A review of utilities located on the above referenced project has been conducted with Concept Layout plans. Listed below is a breakdown of the anticipated reimbursable and non-reimbursable cost.

Utility Owner	Reimbursable	Non-Reimbursable	In Contract/CIA (Non-Reimbursable)	Estimate Based on
Georgia Power - Distribution	$810,000.00	$0.00	$0.00	Site Visit / Available Drawings
Comcast	$0.00	$185,000.00	$0.00	Preliminary info from Utility
Verizon MCI	$0.00	$20,000.00	$0.00	Preliminary info from Utility
City of Atlanta - Water **	$0.00	$0.00	$500,000.00	Site Visit / Available Drawings
Southern Company Gas	$0.00	$500,000.00	$0.00	Site Visit / Available Drawings
AT&T Distribution	$0.00	$100,000.00	$0.00	Site Visit / Available Drawings
Total	$810,000.00	$805,000.00	$500,000.00	

** Indicates Potential Utility Aid Request from Local Gov't

Estimate is based on the best available information at the current stage, unforeseen prior rights information may be provided by the Utility Company at a later date that could cause some non-reimbursable costs to shift to the reimbursable cost column.

If additional information is needed, please contact Gerald Ford at 770-216-3933.

SLP:GF

cc: Nicholas Fields, State Utilities Administrator
Marcela Coll, State Utilities Preconstruction Manager
File

Concept Utility Report

Original Version: May 24, 2013
Revision: April 5, 2018
Revision: March 16, 2023

Concept Utility Report

Project Number: N/A

Prepared by: Gerald Ford

County: Fulton

Date: 07/13/2023

P.I. # 0018304

District: 7 - Chamblee

Project Description: SR 3 / US 19 @ Greensferry Ave / McDaniel St.

The information provided herein has been gathered from field visits and serves as an estimate. Nothing contained in this report is to be used as a substitute for 1st Submission or SUE.

Are SUE services recommended? Yes

Level: ☐A ☒B ☐C ☐D

Public Interest Determination (PID):

☐Automatic ☐Mandatory ☐Consideration ☐No Use ☒Exempt

Is a separate utility funding phase recommended? No

Potential Project (Schedule/Budget) Impacts: This Project is located at the intersection of the beginning of project P.I. 0018302.

Capital Improvement Projects (Utilities) Anticipated in the Area: None

Project Specific Recommendations for Avoidance/Mitigation: If Mast arms are required, they may present a power distribution clearance issue at this intersections. Avoid small cells at top of AT&T poles.

Right of Way Coordination: Permanent Easements will need to include the rights to place and maintain utilities.

Environmental Coordination: None at this phase

Additional Remarks: This Project is located at the intersection of the beginning of project P.I. 0018302.

City of Atlanta Department of Watershed Management will request to include their facilities in the contract. Their relocations will need to be covered under the department's environmental permit

Need to coordinate with City of Atlanta for security cameras on poles

Original Version: May 24, 2013
Revision: March 8, 2018
Revision: March 16, 2023

Utilities have facilities within the project limits.

Utilities have been identified using Email Confirmations from Utility Companies

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Facility Owner	Facility Owner Contact Email Address	Existing Facilities/ Appurtenances	General Description of Location	Facilities to Avoid *approx. limits*	Facilities Retention Recommended *approx. limits*	Comments
AGL/Sthrn Co. Gas	Conner Owen Coowen@Southernco.com G2SCGDOT@southernco.com	Plastic Gas Mains and Steel Gas Main	Intersection of the project	.	.	.
City of Atlanta - Water	Daniel Ephraim DEphraim@atlantaga.gov	Fire hydrants, water meters and valves	Intersection of the project	.	.	
GA. Power – Distribution	Kris Stephens KStephens@pike.com	Power Poles	Intersection of the project	.	.	Potential design Variance for Lateral Offset for poles
AT&T – Distribution	Tiffany Hammond th638j@att.com	Power Poles	Intersection of the project	.	.	Potential design Variance for Lateral Offset for poles
Verizon MCI	Ashwanarayana Belavadi ash.belavadi@verizon.com	Fiber	Intersection of the project	.	.	.
Comcast Fiber	Charles Ross Charles_Ross@comcast.com	Fiber	Intersection of the project	.	.	.

Note: *To add additional rows, click the bottom right corner of the box above, then click the blue + that will appear. Please add additional rows prior to entering text.*

Crash Summaries and Diagrams

Count of Collision ID	Column Labels					
Row Labels	**K**	**A**	**B**	**C**	**O**	**Grand Total**
Left Angle	1	6	14	28	41	90
Right Angle				2	5	7
Through Angle			2	4	2	8
Angle (Other)			1		2	3
Head On			1		1	2
Rear End			1	18	43	62
Not a Collision with Motor Vehicle			2	1	9	12
Sideswipe-Same Direction				6	42	48
Sideswipe-Opposite Direction				1	1	2
Grand Total	**1**	**6**	**21**	**60**	**146**	**234**

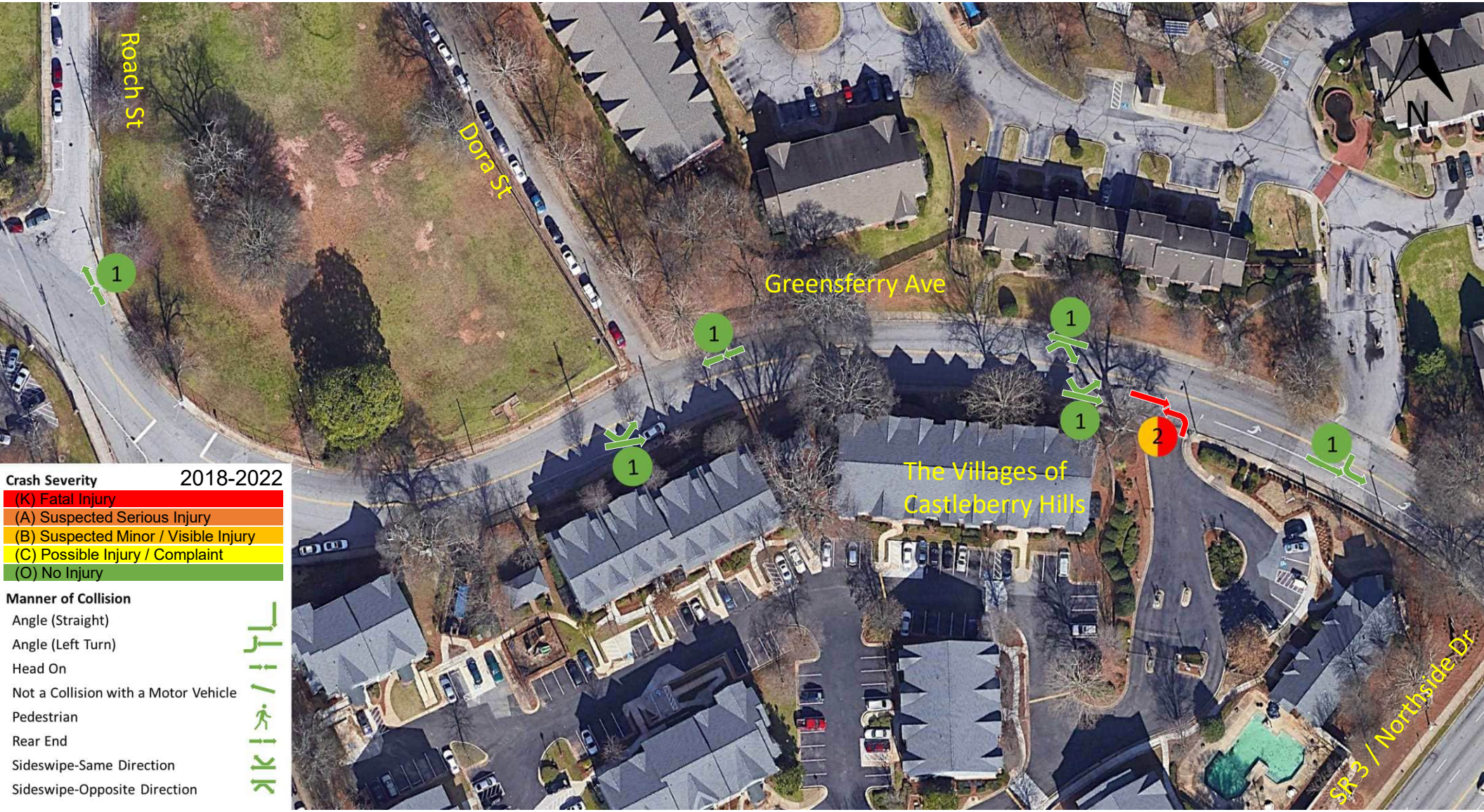
Count of Collision ID	Column Labels					
Row Labels	**2018**	**2019**	**2020**	**2021**	**2022**	**Grand Total**
Left Angle	17	16	9	29	19	90
Right Angle		1		3	3	7
Through Angle	1		3	1	3	8
Angle (Other)	1				2	3
Head On		1		1		2
Rear End	8	16	14	13	11	62
Not a Collision with Motor Vehicle		6	2	3	1	12
Sideswipe-Same Direction	8	12	9	8	11	48 ,
Sideswipe-Opposite Direction		1		1		2
Grand Total	**35**	**53**	**37**	**59**	**50**	**234**

Count of Collision ID	Column Labels									
Row Labels	**Left Angle**	**Right Angle**	**Through Angle**	**Angle (Other)**	**Head On**	**Rear End**	**Not a Collision with Motor**	**Sideswipe-Same Direction**	**Sideswipe-Opposite**	**Grand Total**
Roach St						1				1
Dora St						1		1		2
Village at Castleberry Hill	3							1	1	5
Northside DR	56	5	6	2	1	39	10	29	1	149
between Northside Dr and Peters St	3	1				5	1	3		13
Peters St	28	1	2	1	1	16	1	14		64
Grand Total	**90**	**7**	**8**	**3**	**2**	**62**	**12**	**48**	**2**	**234**

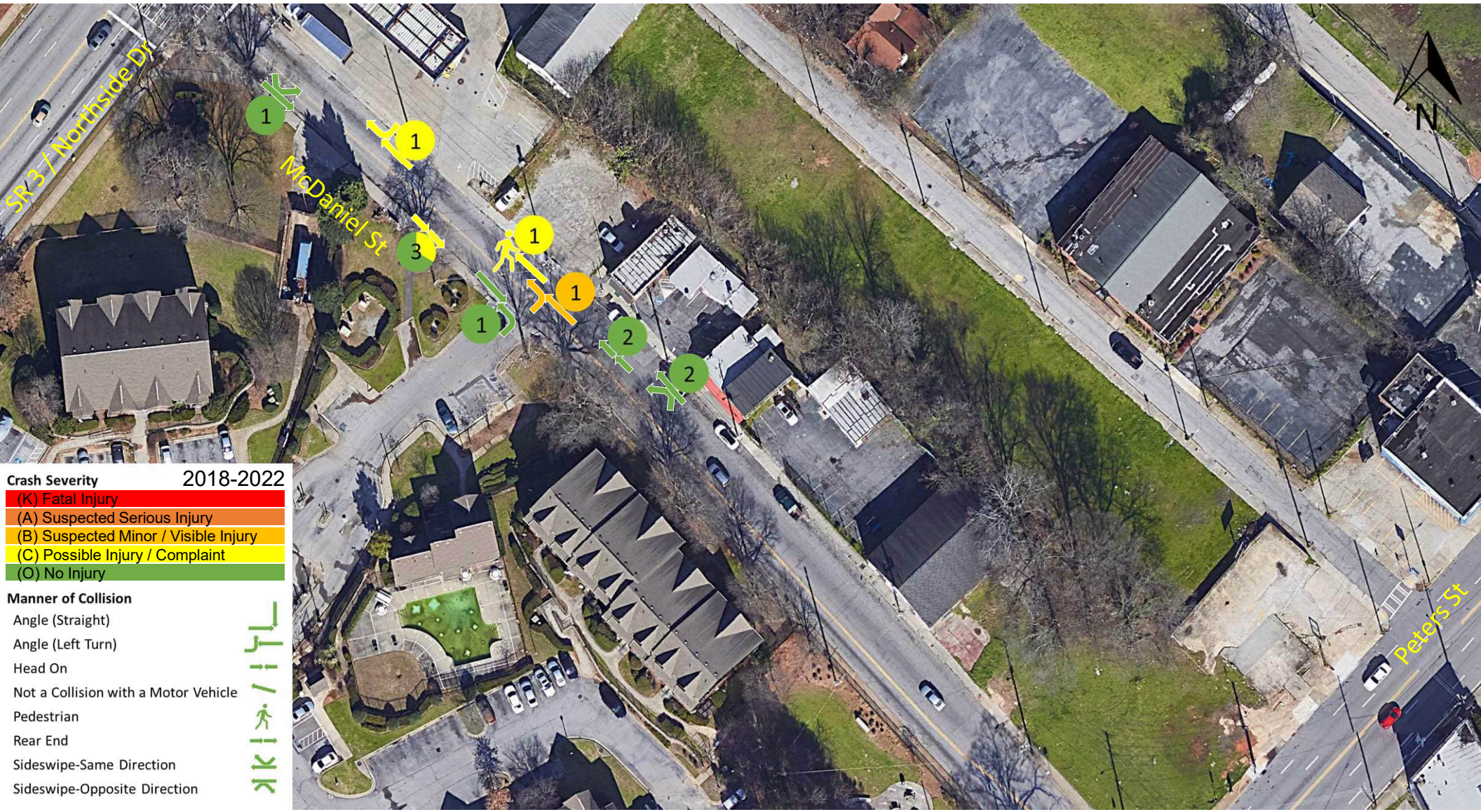
Count of Collision ID	Column Labels

Row Labels	2018	2019	2020	2021	2022	Grand Total
Roach St			1			1
Dora St	1	1				2
Village at Castleberry Hill	2	1		2		5
Northside DR	16	37	30	36	30	149
between Northside Dr and Peters St	5	3		4	1	13
Peters St	11	11	6	17	19	64
Grand Total	**35**	**53**	**37**	**59**	**50**	**234**

Count of Collision ID	Column Labels					
Row Labels	**K**	**A**	**B**	**C**	**O**	**Grand Total**
Roach St					1	1
Dora St					2	2
Village at Castleberry Hill		1		1	3	5
Northside DR			4	16	39	90	149
between Northside Dr and Peters St					7	6	13
Peters St			2	4	14	44	64
Grand Total		**1**	**6**	**21**	**60**	**146**	**234**


Roach St
Dora St
Greensferry Ave
The Villages of Castleberry Hills
SR 3 / Northside Dr
N
1
1
1
1
2
1
Crash Severity
2018-2022
(K) Fatal Injury
(A) Suspected Serious Injury
(B) Suspected Minor / Visible Injury
(C) Possible Injury / Complaint
(O) No Injury
Manner of Collision
Angle (Straight)
Angle (Left Turn)
Head On
Not a Collision with a Motor Vehicle
Pedestrian
Rear End
Sideswipe-Same Direction
Sideswipe-Opposite Direction


Greensferry Ave
SR 3 / Northside Dr
McDaniel St
N
Google Earth
Crash Severity
2018-2022
(K) Fatal Injury
(A) Suspected Serious Injury
(B) Suspected Minor / Visible Injury
(C) Possible Injury / Complaint
(O) No Injury
Manner of Collision
Angle (Straight)
Angle (Left Turn)
Head On
Not a Collision with a Motor Vehicle
Pedestrian
Rear End
Sideswipe-Same Direction
Sideswipe-Opposite Direction

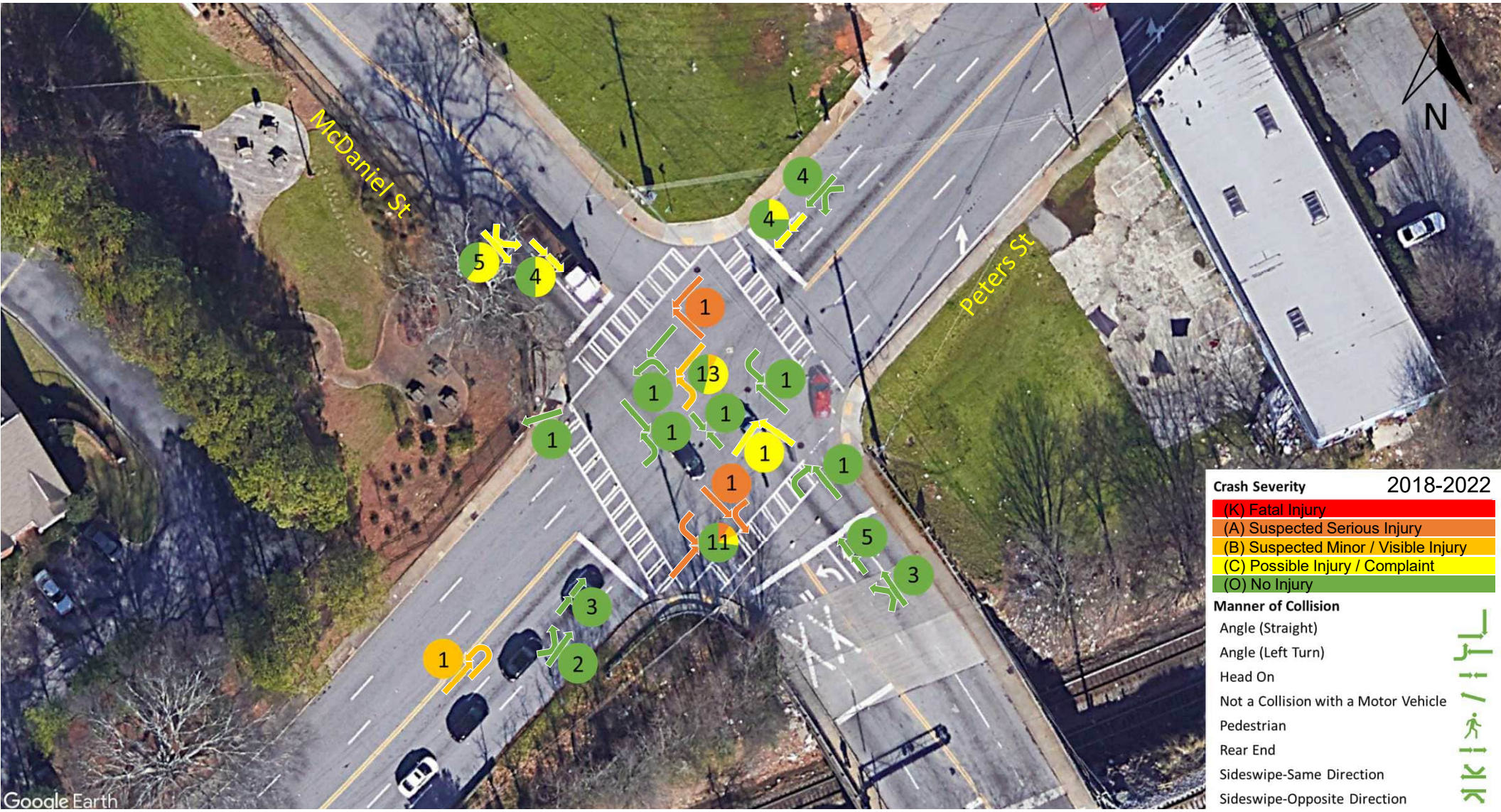


Crash Severity 2018-2022

- (K) Fatal Injury
- (A) Suspected Serious Injury
- (B) Suspected Minor / Visible Injury
- (C) Possible Injury / Complaint
- (O) No Injury

Manner of Collision

- Angle (Straight)
- Angle (Left Turn)
- Head On
- Not a Collision with a Motor Vehicle
- Pedestrian
- Rear End
- Sideswipe-Same Direction
- Sideswipe-Opposite Direction


McDaniel St
Peters St
N
Google Earth
Crash Severity
2018-2022
(K) Fatal Injury
(A) Suspected Serious Injury
(B) Suspected Minor / Visible Injury
(C) Possible Injury / Complaint
(O) No Injury
Manner of Collision
Angle (Straight)
Angle (Left Turn)
Head On
Not a Collision with a Motor Vehicle
Pedestrian
Rear End
Sideswipe-Same Direction
Sideswipe-Opposite Direction

Design Traffic Diagrams and Projections

Interoffice Memo

FILE: Fulton County
P.I. # 0018304

DATE: January 18, 2024

FROM: Matt Markham, Deputy Director of Planning

TO: Kimberly Nesbitt, State Program Delivery Administrator
Attention: Olusola Adekonojo

SUBJECT: **Design Traffic Forecasts** for SR 3/US 19 @ CS 2368/GREENSFERRY AVE/MCDANIEL STREET

Per request, we have reviewed the consultant's design traffic forecasts for the above project. Based on the information furnished, we find the design traffic forecasts to be satisfactory, and the design traffic forecasting task to be complete for the above project. The reviewed and approved design traffic forecast for the above project is attached in 0018304_10.pdf and 0018304_10.dgn.

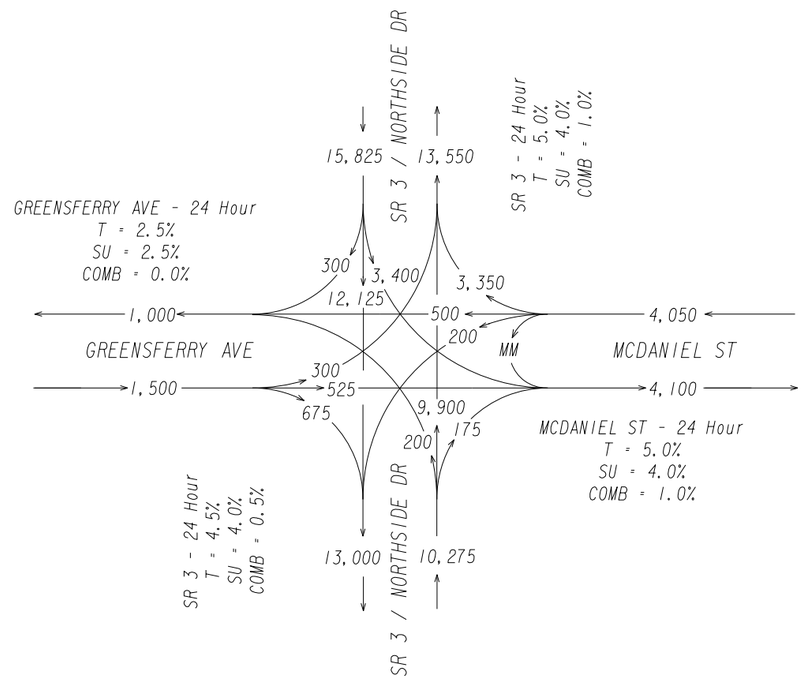
If you have any questions concerning this information, please contact Andre Washington at 404-631-1925.

Nithin Gomez
Gresham Smith
Design Traffic Review Consultant to GDOT
678-478-3350

MM/NMG

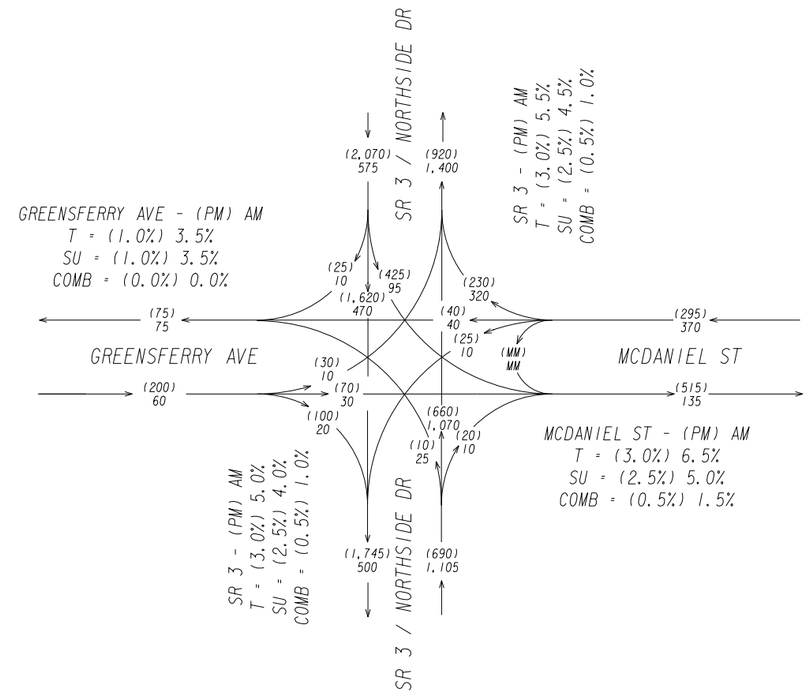
12/19/2023 USER: sarah.nastasi			STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
			GA	0018304	1 / 18	18

Fulton County



P.I.# 0018304 FULTON COUNTY SR 3 AT MCDANIEL ST	AECOM ONE MIDTOWN PLAZA 1360 PEACHTREE ST.N.E., SUITE 300 ATLANTA, GEORGIA 30309 TEL: (404) 965-9600 FAX: (404) 965-9605	GDOT Georgia Department of Transportation	EXISTING YEAR AADT 2023	REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE: PLANNING TRAFFIC DESIGN EXISTING YEAR AADT DATE: DECEMBER 2023 PREPARED BY: AECOM DRAWING No. 10-1

Fulton County



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Georgia Department of Transportation

EXISTING YEAR DHV 2023
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REVISION DATES		

STATE OF GEORGIA
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OFFICE: PLANNING

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EXISTING YEAR DHV

DATE: DECEMBER 2023
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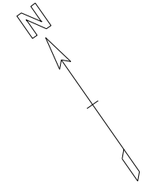
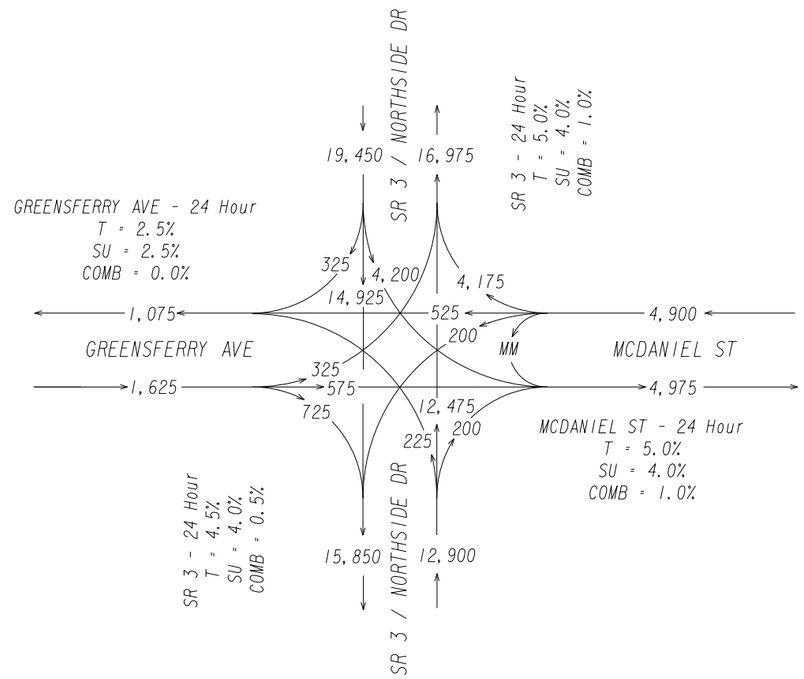
10-2

Fulton County





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FULTON COUNTY
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Georgia Department of Transportation

OPENING YEAR AADT 2030
NO BUILD

REVISION DATES

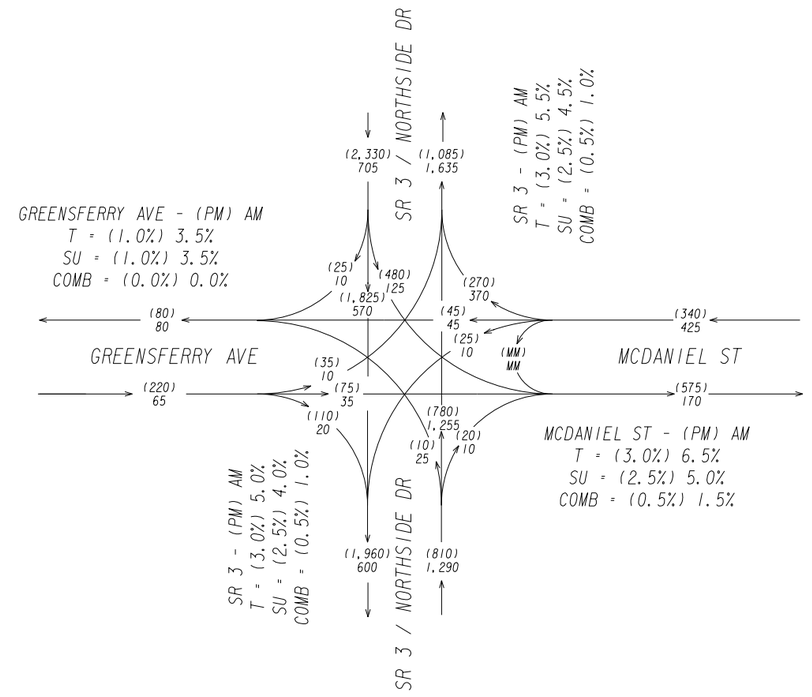
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PLANNING

TRAFFIC DESIGN
OPENING YEAR AADT

DATE: DECEMBER 2023
PREPARED BY: AECOM

DRAWING No.
10-3

Fulton County



P.I.# 0018304
FULTON COUNTY
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Georgia Department of Transportation

OPENING YEAR DHV 2030
(PM)AM
NO BUILD

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PLANNING

TRAFFIC DESIGN
OPENING YEAR DHV

DATE: DECEMBER 2023
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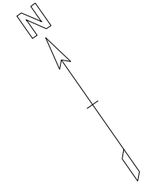
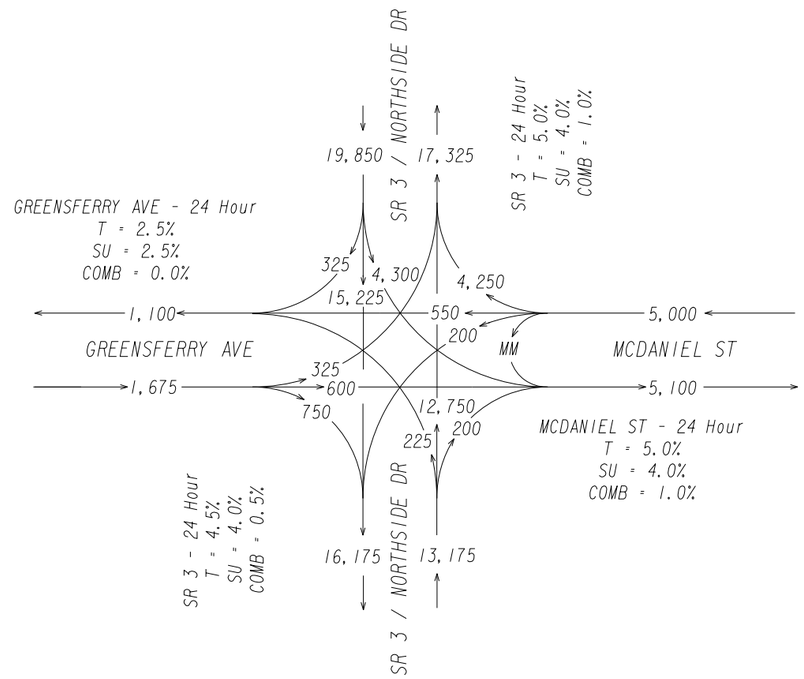
DRAWING No.
10-4

Fulton County





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OPENING YEAR+2 AADT

DATE: DECEMBER 2023
PREPARED BY: AECOM

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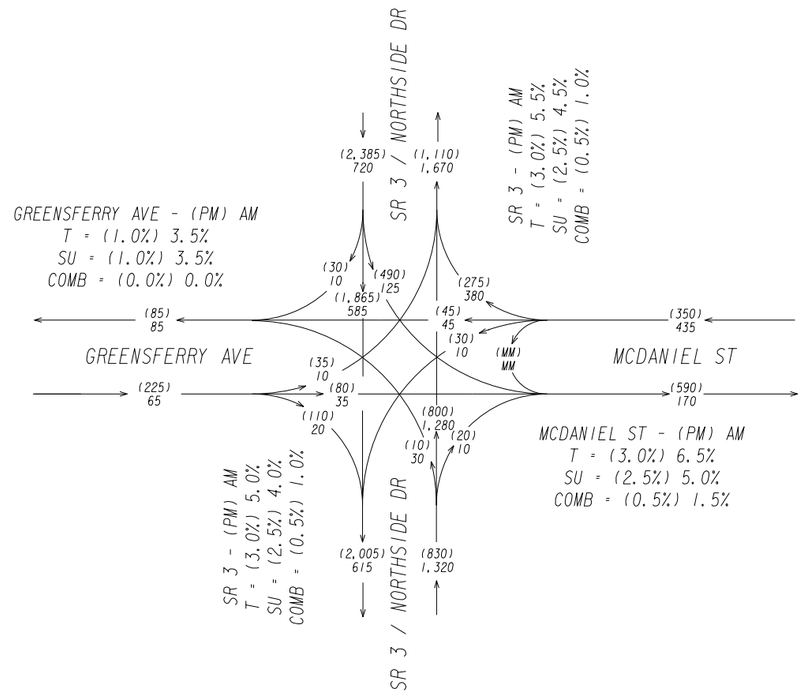
Fulton County



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FULTON COUNTY
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OPENING YEAR+2 DHV 2032
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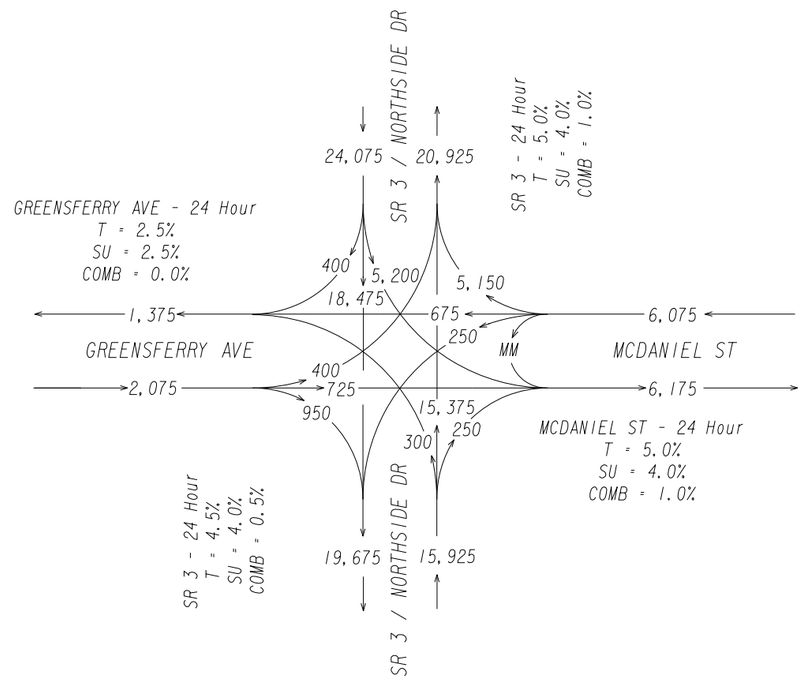
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PLANNING

TRAFFIC DESIGN
OPENING YEAR+2 DHV

DATE: DECEMBER 2023
PREPARED BY: AECOM

DRAWING No.
10-6

Fulton County



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Georgia Department of Transportation

DESIGN YEAR AADT 2050
NO BUILD

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PLANNING

TRAFFIC DESIGN
DESIGN YEAR AADT

DATE: DECEMBER 2023
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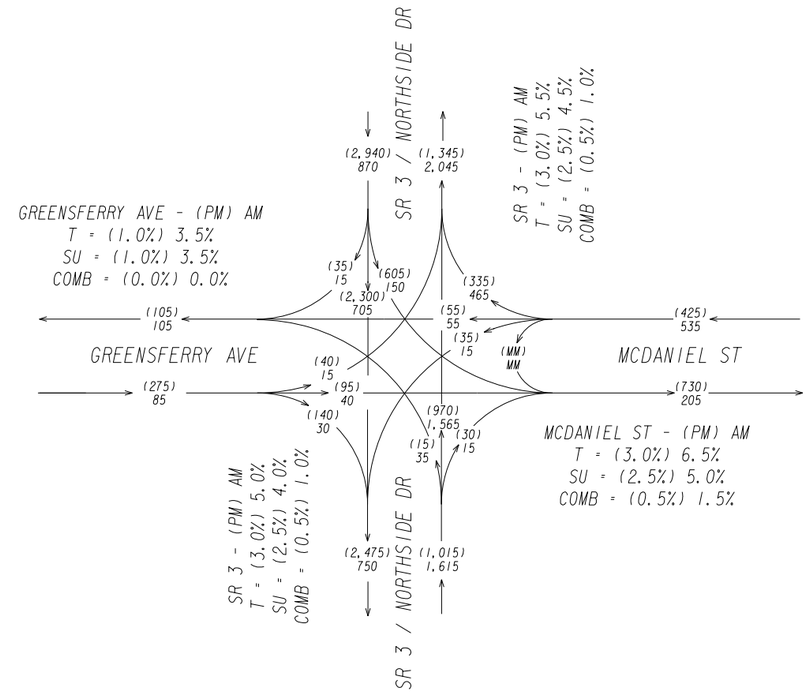
DRAWING No. 10-7

Fulton County



P.I.# 0018304
FULTON COUNTY
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Georgia Department of Transportation

DESIGN YEAR DHV 2050
(PM)AM
NO BUILD

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PLANNING

TRAFFIC DESIGN
DESIGN YEAR DHV

DATE: DECEMBER 2023
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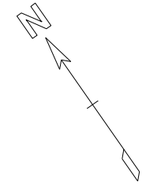
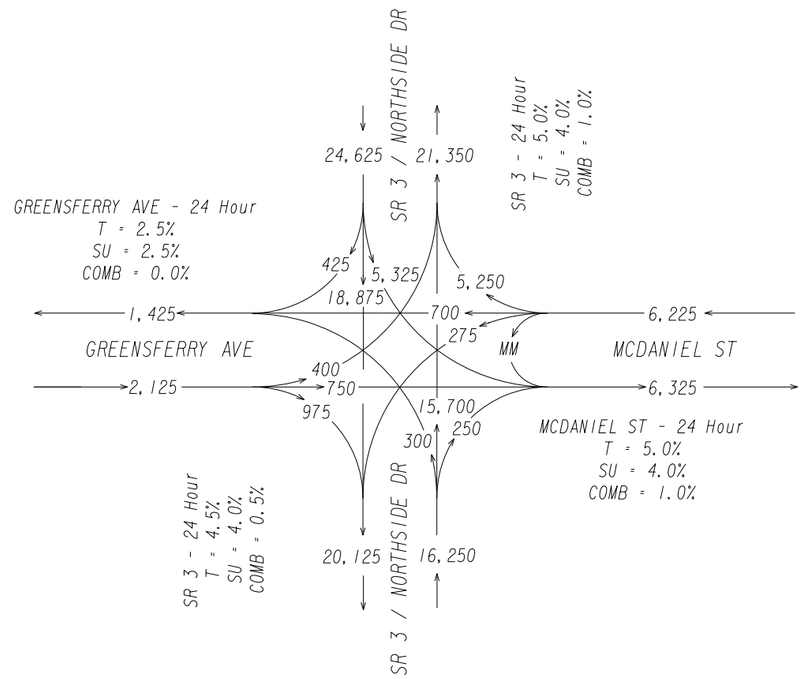
DRAWING No.
10-8

Fulton County





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FULTON COUNTY
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GDOT
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DESIGN YEAR+2 AADT 2052
NO BUILD

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
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TRAFFIC DESIGN
DESIGN YEAR+2 AADT

DATE: DECEMBER 2023
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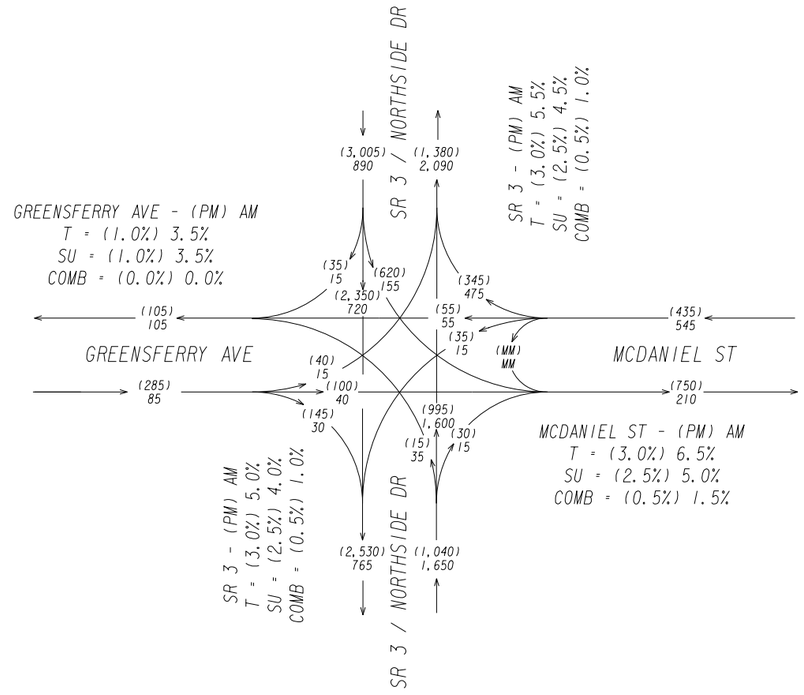
DRAWING No.
10-9

Fulton County



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Georgia Department of Transportation

DESIGN YEAR+2 DHV 2052
(PM)AM
NO BUILD

REVISION DATES

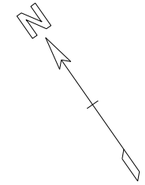
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PLANNING

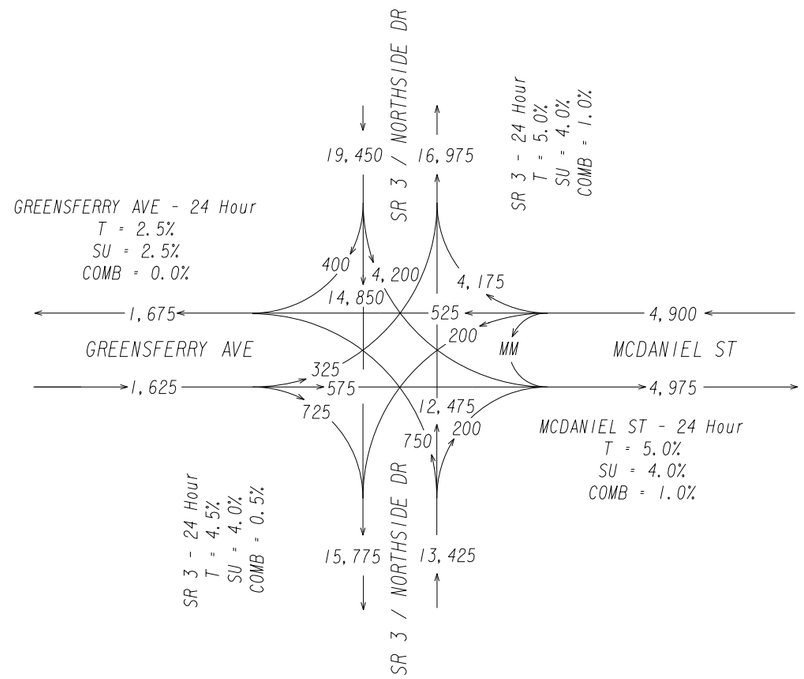
TRAFFIC DESIGN
DESIGN YEAR+2 DHV

DATE: DECEMBER 2023
PREPARED BY: AECOM

DRAWING No.
10-10

Fulton County





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OPENING YEAR AADT 2030
BUILD

REVISION DATES

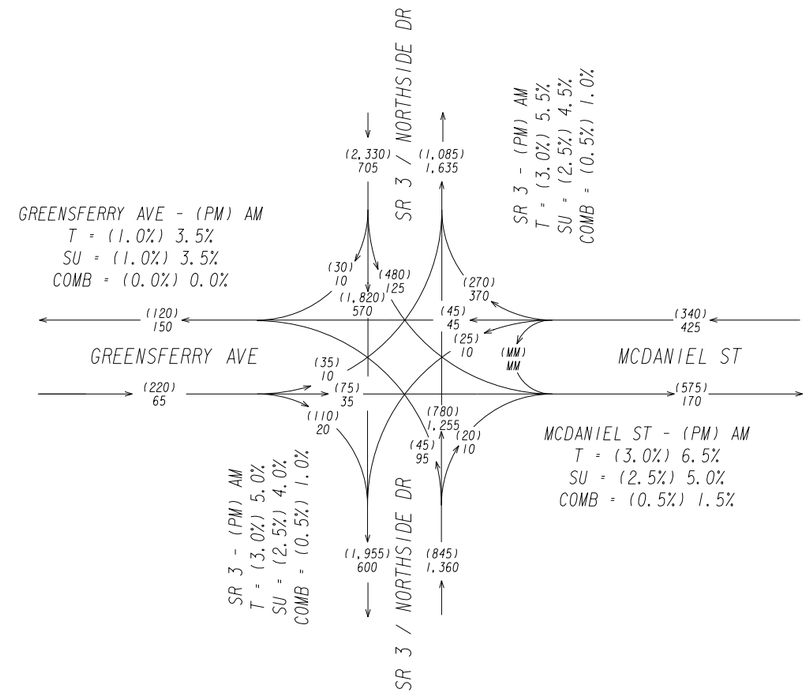
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PLANNING

TRAFFIC DESIGN
OPENING YEAR AADT

DATE: DECEMBER 2023
PREPARED BY: AECOM

DRAWING No.
10-11

Fulton County



P.I.# 0018304
FULTON COUNTY
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Georgia Department of Transportation

OPENING YEAR DHV 2030
(PM)AM
BUILD

REVISION DATES

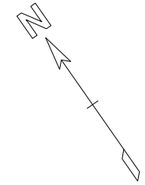
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PLANNING

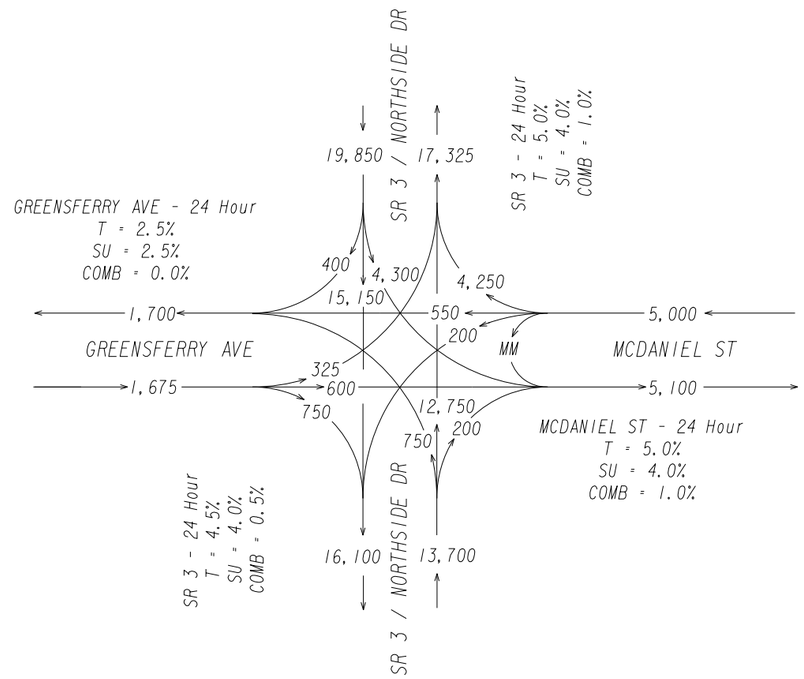
TRAFFIC DESIGN
OPENING YEAR DHV

DATE: DECEMBER 2023
PREPARED BY: AECOM

DRAWING No.
10-12

Fulton County





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FULTON COUNTY
SR 3 AT MCDANIEL ST

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OPENING YEAR+2 AADT 2032
BUILD

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

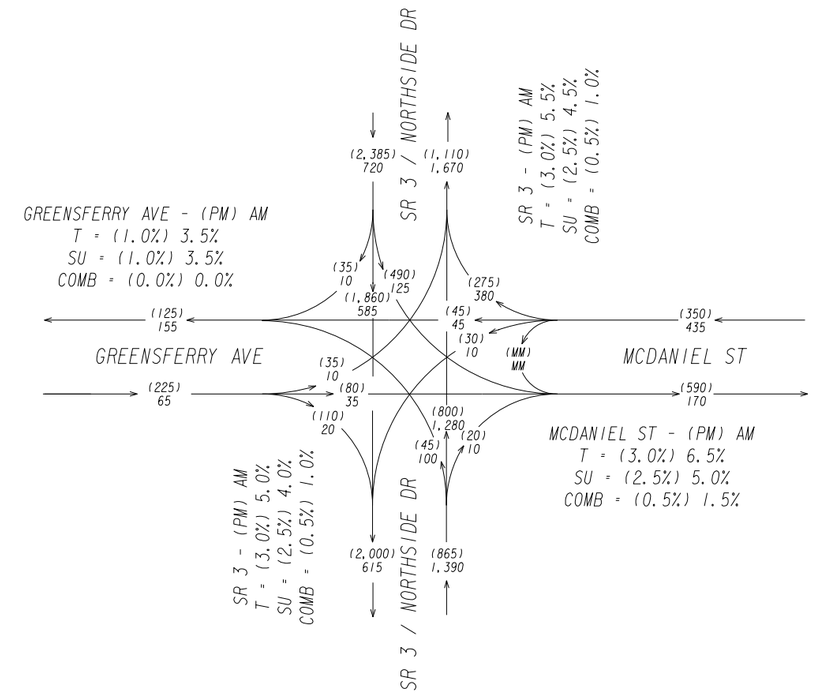
OFFICE: PLANNING

TRAFFIC DESIGN
OPENING YEAR+2 AADT

DATE: DECEMBER 2023
PREPARED BY: AECOM

DRAWING No.
10-13

Fulton County



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Georgia Department of Transportation

OPENING YEAR+2 DHV 2032
(PM)AM
BUILD

REVISION DATES		

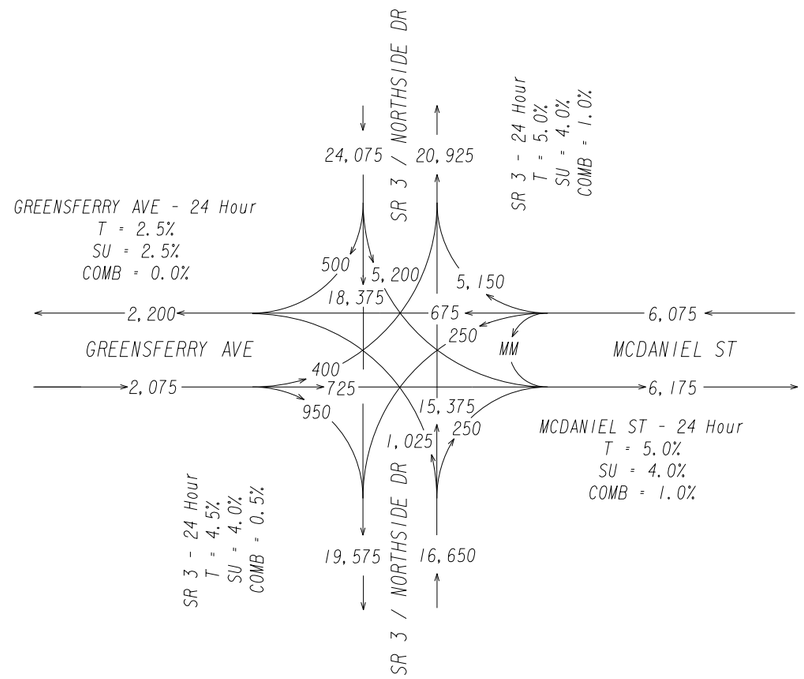
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PLANNING

TRAFFIC DESIGN
OPENING YEAR+2 DHV

DATE: DECEMBER 2023
PREPARED BY: AECOM

DRAWING No.
10-14

Fulton County



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GDOT Georgia Department of Transportation

DESIGN YEAR AADT 2050
BUILD

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PLANNING

TRAFFIC DESIGN
DESIGN YEAR AADT

DATE: DECEMBER 2023
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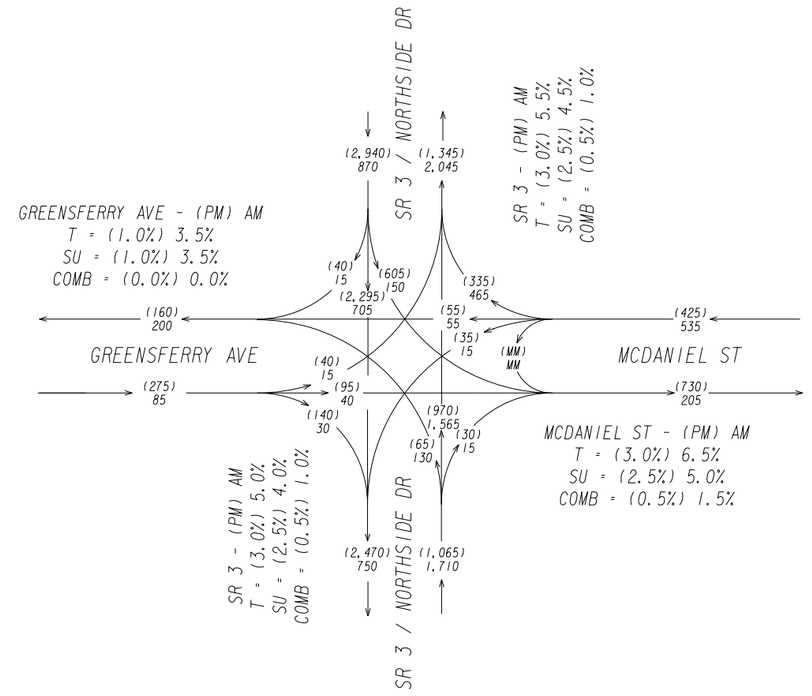
DRAWING No.
10-15

Fulton County



P.I.# 0018304
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Georgia Department of Transportation

DESIGN YEAR DHV 2050
(PM)AM
BUILD

REVISION DATES		

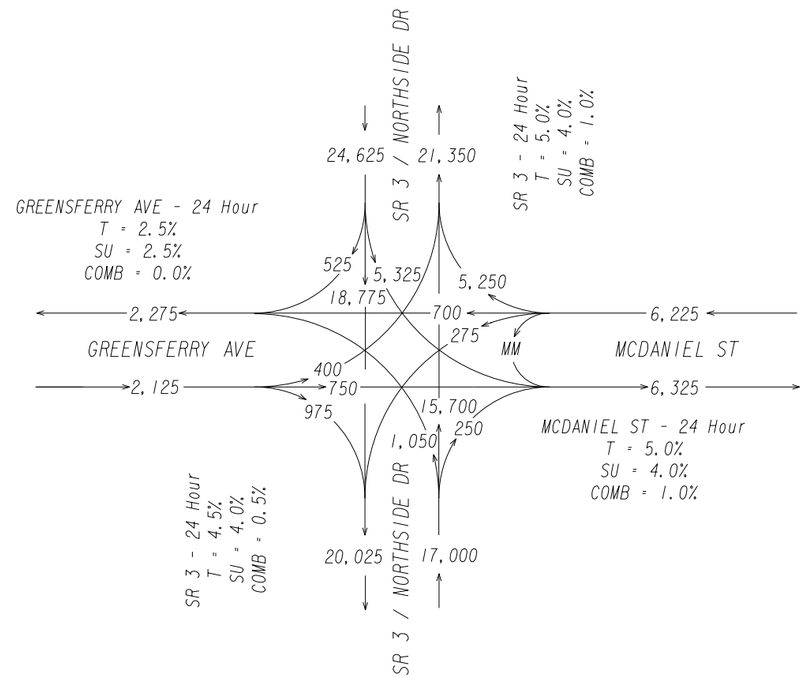
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PLANNING

TRAFFIC DESIGN
DESIGN YEAR DHV

DATE: DECEMBER 2023
PREPARED BY: AECOM

DRAWING No.
10-16

Fulton County



P.I.# 0018304
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Georgia Department of Transportation

DESIGN YEAR+2 AADT 2052
BUILD

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

OFFICE: PLANNING

TRAFFIC DESIGN
DESIGN YEAR+2 AADT

DATE: DECEMBER 2023
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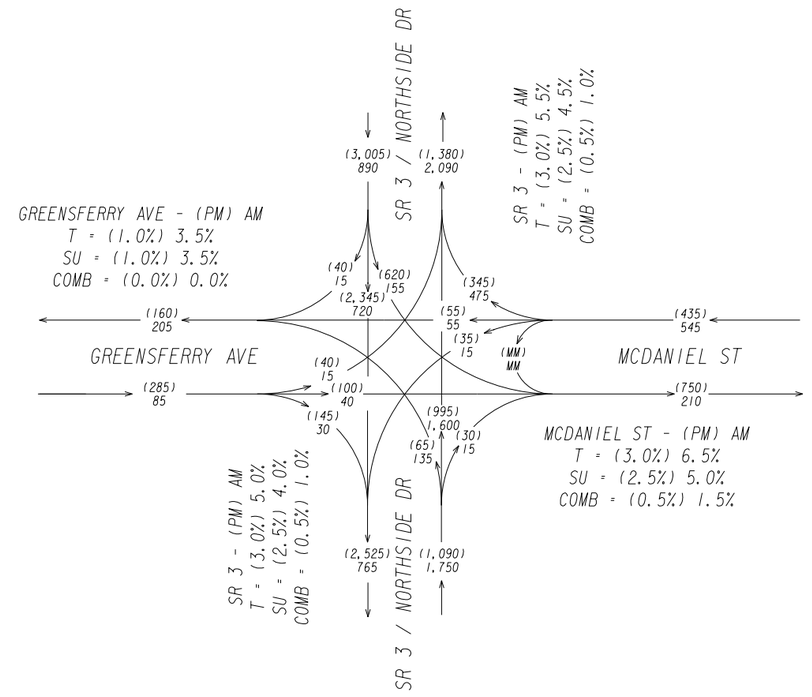
10-17

Fulton County



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Georgia Department of Transportation

DESIGN YEAR+2 DHV 2052
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REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PLANNING

TRAFFIC DESIGN
DESIGN YEAR+2 DHV

DATE: DECEMBER 2023
PREPARED BY: AECOM

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TE Study

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SR 3 Traffic Engineering Summary

SR 3 / Northside Drive at Greensferry Avenue / McDaniel Street
P.I. No. 0018304
Traffic Engineering Study

January 31, 2024

Quality information

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1. Introduction

This memorandum is intended to provide information on traffic projections for US 19/US 29/US 41/SR 3/ Northside Drive at Greensferry Ave/McDaniel St. The traffic projections presented in this memorandum will support the development of a concept report for an approved Build alternative including sidewalk widening, installation of raised medians, and intersection improvement. The count data collection locations include all intersections and road segments within the study area, as well as additional count locations approved by the Georgia Department of Transportation (GDOT). Peak hour turning movement counts and 48-hour vehicle volumes for the existing condition have been collected for each new count location. Furthermore, this document describes the methodology to be used to estimate projected traffic volumes for the concept report and to seek approval of these methods to move forward with projections.

2. Existing Conditions

2.1 Study Network

The study network includes US 19/US 29/US 41/SR 3/Northside Drive at Greensferry Avenue/McDaniel Street, SR 14/SR 154/Peters Street at McDaniel Street, and McDaniel Street between these two intersections as shown in Figure 1 below. SR 3 is classified as an Urban Principal Arterial corridor, SR 14 is classified as a Minor Arterial corridor, and McDaniel Street is classified as a Major Collector corridor within the study area. While two (2) signalized intersections were initially considered, only the intersection of SR 3 at McDaniel Street/Greensferry Avenue is considered within the study area.

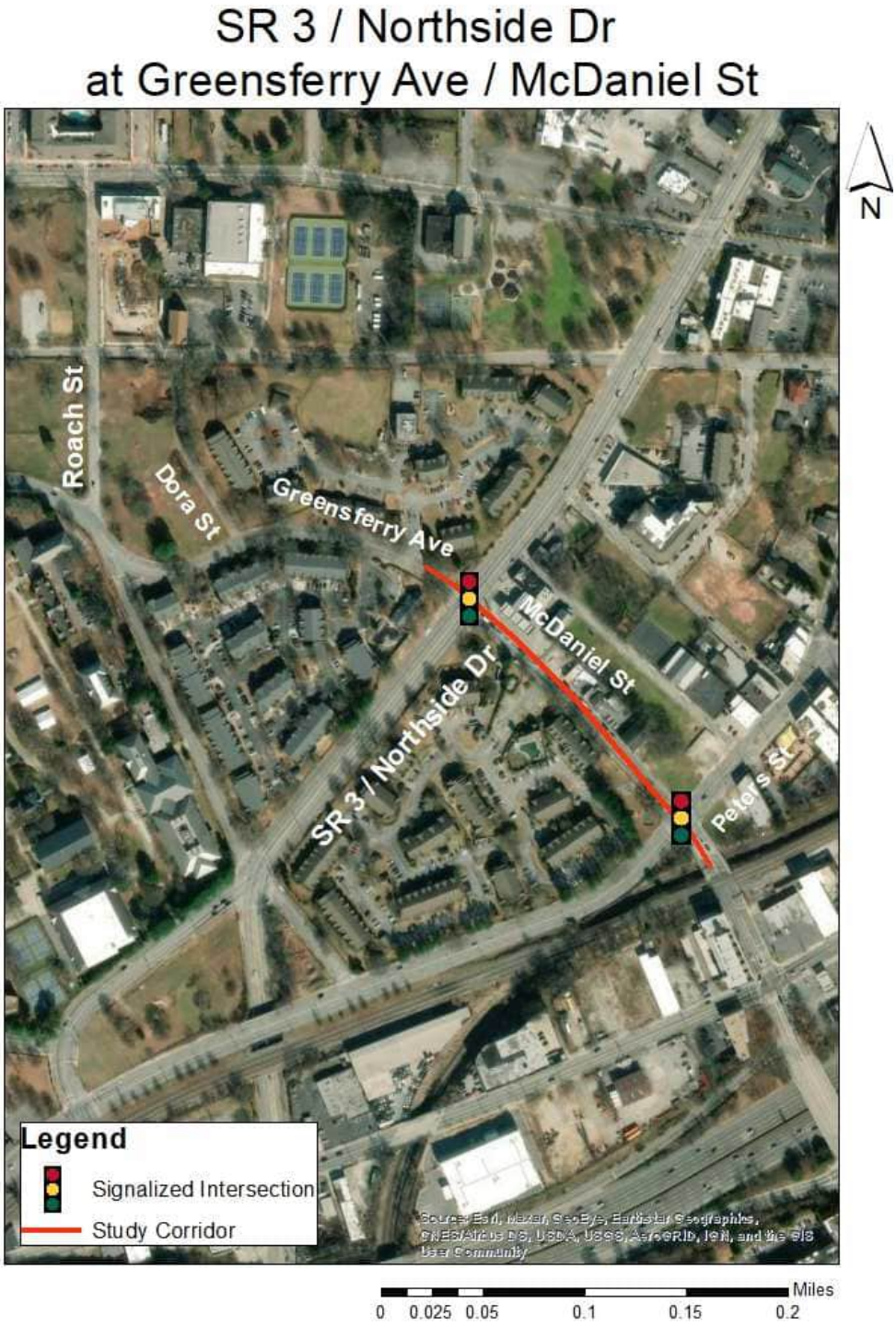


Figure 1 - Study Network Map

2.2 Roadway Conditions

As it exists today, the study area portion of SR 3/Northside Dr has three (3) southbound and three (3) northbound travel lanes with no median. There are sidewalks on both sides of SR 3, but some portions of sidewalks are damaged and/or covered with vegetation. Sidewalks on both sides of SR 3 are narrower than the minimum 8-10' sidewalks recommended in the Northside Drive Corridor Improvement Study (P.I. 0007557).

McDaniel Street varies from 28 to 40 feet in width to accommodate two-way vehicular traffic. While there is a southeastbound left turn lane on McDaniel Street at SR 14, the northwestbound approach to SR 3 has only a single designated lane to share through, left, and right turn movements. There are sidewalks on both sides of McDaniel Street, but some portions of sidewalks are damaged and/or covered with vegetation. On-street parking is permitted along the wider section of McDaniel Street. There are also regular conflicts in the existing sidewalk with signs, utility poles, fire hydrants, and other facilities restricting clear accessibility.

The signalized intersection of SR 3 at Greensferry Avenue/McDaniel Street allows all turn and through movements.

2.3 Signal Conditions

The signal at SR 3 and Greensferry Avenue/McDaniel Street is in compliance, but could benefit from additional upgrades to bring it into line with current GDOT standards. Push buttons should be replaced so they comply with the newest ADA standards. Not all signal heads have backplates with retroreflective borders. Flashing yellow arrow operation includes a bimodal lamp in a 5-section head. This intersection also may have some vertical constraints with overhead utilities, so make-ready work may be needed to provide the additional height to obtain minimum clearances with the addition of backplates and any four-section heads. There are not enough conduits in the existing pole bases, so risers are installed on the outside of the self-supporting poles. Considering the fiber along SR 3, 28-series sheets may be needed as part of the plan set.

The traffic signal at this intersection is being upgraded to current standards along with mast arms as part of PI 0012823. One or two mast arms may need to be replaced from PI 0012823 to accommodate the proposed intersection footprint.

2.4 Crash History

Analysis of crashes in the study area was conducted for crash years 2018 through 2022, with data collected from Numetric and the Georgia Electronic Accident Reporting System (GEARS). The results of this analysis are summarized below.

A total of 233 crashes were found for the five (5) year analysis period. These included six (6) crashes resulting in serious injuries (A), 23 resulting in visible injuries (B), 61 resulting in complaint injuries (C), and 143 crashes were PDO crashes (O), as shown in **Table 1**.

Table 1 - Crashes Manner of Collision and Severity

	A	B	C	O	Crashes
Left Angle	6	14	28	41	**89**
Right Angle	0	0	2	5	**7**
Through Angle	0	2	4	2	**8**
Angle (Other)	0	1	0	2	**3**
Head On	0	1	0	1	**2**
Rear End	0	1	18	43	**62**
Not a Collision with Motor Vehicle	0	4	2	6	**12**
Sideswipe (Same)	0	0	6	42	**48**
Sideswipe (Opposite)	0	0	1	1	**2**
Total	**6**	**23**	**61**	**143**	**233**

Table 2 displays crashes by manner of collision and year. Total crashes in the study area increased by 50% from 2018 to 2019 before dropping in 2020 (first year of the COVID-19 pandemic). Total crashes returned to at least 50 per year in 2021 and 2022.

Notably, left angle crashes are higher post 2020 than compared to pre 2020, and left angle crashes were the most common manner of collision in both 2021 and 2022.

Table 2 - Crashes Manner of Collision and Year

	2018	2019	2020	2021	2022	Total
Left Angle	17	16	9	28	19	**89**
Right Angle	0	1	0	3	3	**7**
Through Angle	1	0	3	1	3	**8**
Angle (Other)	1	0	0	0	2	**3**
Head On	0	1	0	1	0	**2**
Rear End	8	16	14	13	11	**62**
Not a Collision with Motor Vehicle	0	6	2	3	1	**12**
Sideswipe (Same)	8	12	9	8	11	**48**
Sideswipe (Opposite)	0	1	0	1	0	**2**
Total	**35**	**53**	**37**	**58**	**50**	**233**

The number of crashes for each intersection and segment in the study corridor were also tabulated by manner of collision, year, and severity, as shown in **Table 3**, Table 4, and Table 5, respectively. There were four (4) pedestrian crashes noted within the study corridor – three (3) at Northside Dr and one (1) between Northside Dr and Peters St. All four (4) crashes occurred when vehicles were going straight and hit pedestrians crossing the street.

Table 3 - Crashes by Location and Manner of Collision

Location on Northside Dr	Left Angle	Right Angle	Through Angle	Angle (Other)	Head On	Not a Crash with Motor Vehicle	Rear End	SS (Same)	SS (Opps)
Roach St	0	0	0	0	0	0	1	0	0
Dora St	0	0	0	0	0	0	1	1	0
Village at Castleberry Hill	2	0	0	0	0	0	0	1	1
Northside Dr	56	5	6	2	1	10	39	29	1
between Northside Dr and Peters St	3	1	0	0	0	1	5	3	0
Peters St	28	1	2	1	1	1	16	14	0

Table 4 - Crashes by Location and Year

Location on Northside Dr	2018	2019	2020	2021	2022
Roach St	0	0	1	0	0
Dora St	1	1	0	0	0
Village at Castleberry Hill	2	1	0	1	0
Northside Dr	16	37	30	36	30
between Northside Dr and Peters St	5	3	0	4	1
Peters St	11	11	6	17	19

Table 5 - Crashes by Location and Severity

Location on Northside Dr	A	B	C	O	Crashes
Roach St	0	0	0	1	1
Dora St	0	0	0	2	2
Village at Castleberry Hill	0	1	0	3	4
Northside Dr	4	18	40	87	149
between Northside Dr and Peters St	0	0	7	6	13
Peters St	2	4	14	44	64

Comparison with GDOT annual average crashes also indicated major crash issues throughout the study corridor and trends can be viewed in **Table 6**.

In comparison to statewide averages, the injury crash rate of the study corridor has been rising from 2018-2020. In 2018, 2019, and 2020, the injury crash rate in the study corridor was more than seven (7) times, nine (9) times, and 16 times, respectively, that of urban principal arterials (NHS) statewide. The injury crash rate reached nearly 3,000 2,500 crashes per 100 million vehicle miles of travel in 2021 but dropped to just over half of that in 2022 at 1,596 crashes per 100 million vehicle miles of travel.

Overall crash rates show a similar trend to injury crash rates. In comparison to statewide averages, the overall crash rate of the study corridor has been rising from 2018-2020. In 2018, 2019, and 2020, the overall crash rate in the study corridor was more than four (4) times, seven (7) times, and nine (9) times, respectively, that of urban principal arterials (NHS) statewide. The overall crash rate has continued to increase in 2021 and 2022 reaching 6,524 crashes and 5,320 crashes, respectively, per 100 million vehicle miles of travel.

Table 6 - Corridor Crash Rates versus Statewide Averages [Crashes/100 Million Vehicle Miles of Travel]

Location	2018			2019			2020			2021			2022		
	Fatal Crashes	Injury Crashes	All Crashes	Fatal Crashes	Injury Crashes	All Crashes	Fatal Crashes	Injury Crashes	All Crashes	Fatal Crashes	Injury Crashes	All Crashes	Fatal Crashes	Injury Crashes	All Crashes
SR 3 (Northside Drive) at Greensferry Ave / McDaniel St (inclusive)	0.00	1044	2609	0.00	1333	3924	0.00	1912	4422	0.00	2986	6524	0.00	1596	5320
GDOT Statewide Crash Rate for Principal Arterial, Non-Freeway, NHS, Urban	1.46	141	581	1.41	137	559	1.70	118	469	Not Yet Available	Not Yet Available	Not Yet Available	Not Yet Available	Not Yet Available	Not Yet Available

3. Traffic Volumes

The main steps in the methodology to estimate the projected volumes are: the collection of traffic volumes for the existing condition, traffic analysis of peak hours, determination of key traffic parameters such as K- and D-Factors, seasonal factors, truck percentages, and volume development procedure. **Figure 2** is a flowchart of these steps.

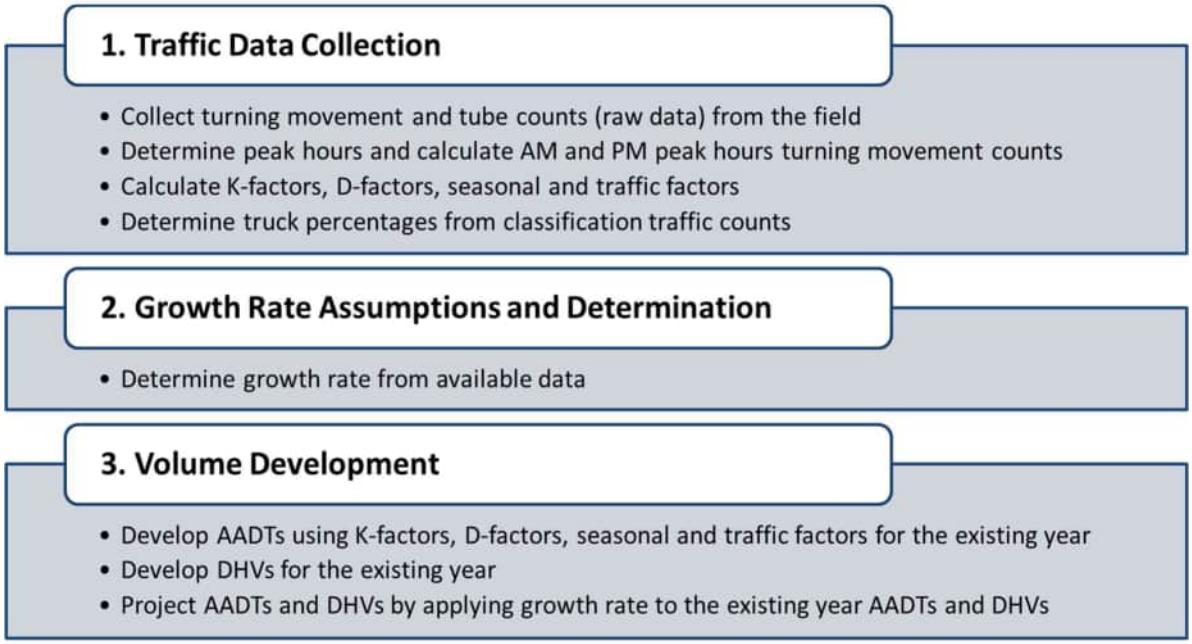


Figure 2 - Volume Projection Methodology Steps

Development Trends

There is one Development of Regional Impact (DRI) near this portion of SR 3/Northside Drive. The proposed Friendship Village (DRI #2686) is a 17.5-acre mixed-use redevelopment project located north of the Northside Drive and McDaniel Street/Greensferry Avenue intersection. The redevelopment is expected to impact projected traffic volumes along Northside Drive, including within the study area, as shown in **Appendix A**. Although this DRI was expected to be completed by 2022, these volumes will be included in open and design year traffic in case this project is constructed in the future. Daily traffic will be added onto the grown future year AADT volumes based on net trip generation and trip distributions provided in the DRI Traffic Study report. Peak hour traffic will be added onto the grown future year DHV volumes based on morning and afternoon project trips provided in the report.

Traffic Data Collection

12-hour turn movement counts at the following intersections along SR 3 were collected in January 2023 as part this study (shown in **Appendix A**):

1 – SR 3 @ McDaniel St / Greensferry Ave
2 – SR 3 @ at The Village of Castleberry HI Dwy
3 – SR 3 @ SR 14 / SR 154 / Peters St

48-hour vehicle video counts at the following locations within the study area were collected in 2023 as part of this project (shown in **Appendix B**):

A – Greensferry Ave west of SR 3 (CC = class count)
B – SR 3 south of McDaniel St / Greensferry Ave (CC = class count)

C – McDaniel St east of SR 3
D – SR 3 north of McDaniel St / Greensferry Ave (CC = class count)
E – McDaniel St west of SR 14 / SR 154 / Peters St (CC = class count)
F – SR 14 / SR 154 / Peters St south of McDaniel St
G – McDaniel St east of SR 14 / SR 154 / Peters St (CC = class count)
H – SR 14 / SR 154 / Peters St north of McDaniel St
I – The Villages of Castleberry Dwy south of McDaniel St

All of these count stations are shown in **Figure 3**.

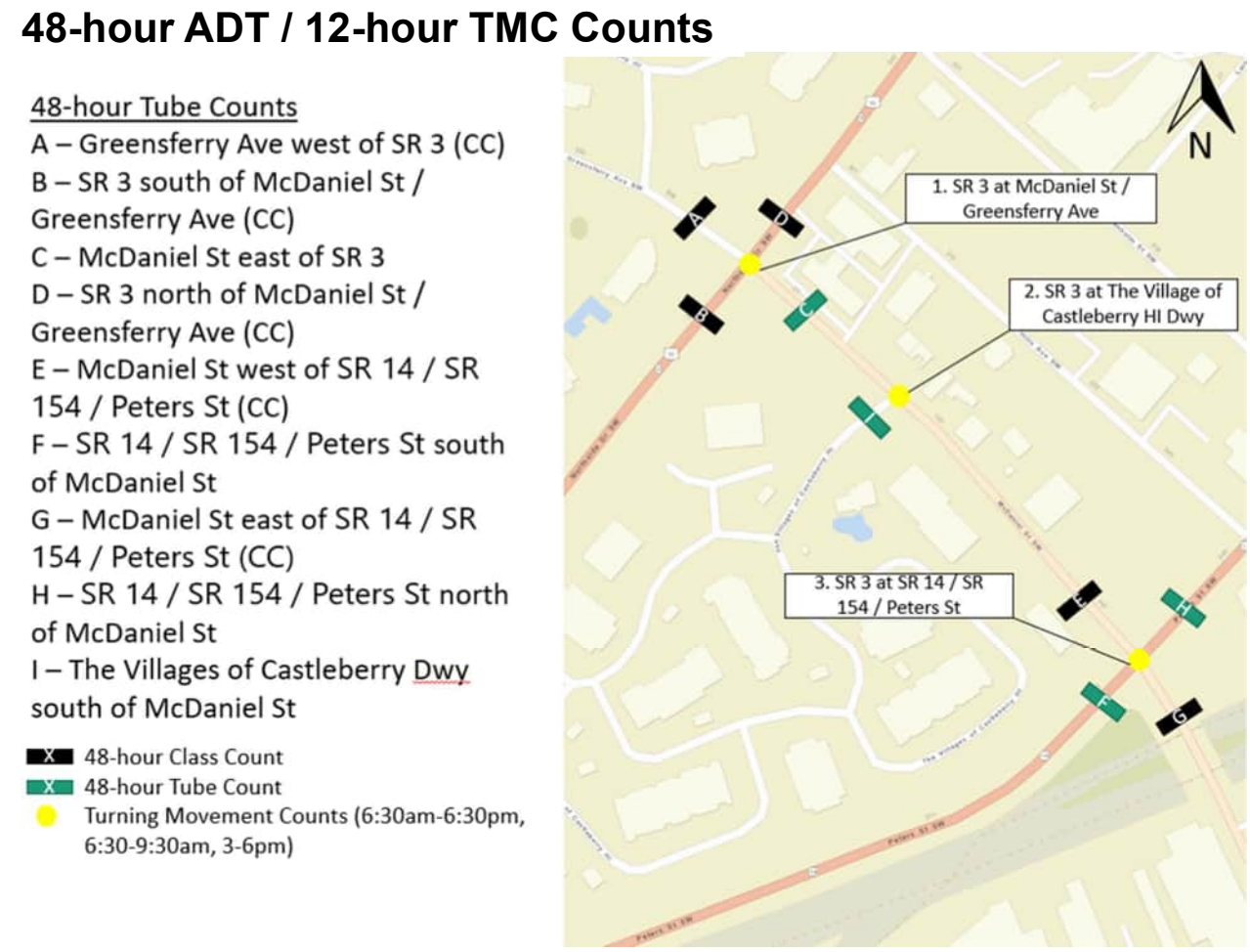


Figure 3 - Count station locations or turn movement counts and ADT count stations

Project Peak Hours

Peak hours were calculated by summing the hourly counts at all turn movement count stations over a 12-hour period. The highest volumes were noted between 8:30-9:30am (the morning peak) and between 4:30-5:30pm (the afternoon peak).

K-Factors, D-Factors, and Traffic Factors

K-factors were calculated as the average across two days of daily and peak hour count data at each daily count station and applied as calculated to estimate DHVs for each approach. Typical K-factors along SR 3 were 0.08 for the morning peak hour and 0.09 for the afternoon peak hour.

D-factors were also calculated from data gathered at each daily count station as the ratio of the higher volume direction vehicle count to the total vehicle count (sum for both directions of travel) during each peak hour. Average D-factors for SR 3 were 0.71 in the morning peak hour and 0.64 for the afternoon peak hour.

The traffic factors used to convert ADT counts to AADT estimates were GDOT 2019 Traffic Factors:

- Count stations located along SR 3 (B and D) and SR 14 / SR 154 / Peters Street (F and H) were from Factor Group 08, Urban Minor / Major Arterials (ATL). All traffic counts occurred in January, so a Monthly Factor of 1.07 was applied. All counts used were collected on a Tuesday or Wednesday, so a Daily Factor of 0.95 or 0.92 was applied as applicable. Axle factors were not used since video counts were collected for all stations.
- Count stations located along McDaniel Street (C, E, and G), Greensferry Avenue (A), and The Villages of Castleberry Driveway (I) were from Factor Group 04, Small Urban/Urban Local Collectors. All traffic counts occurred in January, so a Monthly Factor of 1.07 was applied. All counts used were collected on a Tuesday or Wednesday, so a Daily Factor of 0.97 or 0.95 was applied as applicable. Axle factors were not used since video counts were collected for all stations.
- It was determined during the methodology approval to not use either 2020 or 2021 Traffic Factors. 2022 Traffic Factors were not yet ready when this process got underway.

Truck Percentages

Truck percentages were calculated as the highest average daily and peak hour truck percentage observed among the class count stations on SR 3 in the project area. The highest average truck percentages of 6.6% (6.5% rounded to the nearest half percent) for the AM peak hour and 3.0% (3.0% rounded to the nearest half percent) for the PM peak hour were observed at count station “C”. The highest 24-hour truck percentage of 4.9% (5.0% rounded to the nearest half percent) was observed at count station “C”.

Growth Rate

Analysis of data from GDOT TADA station 121-5220 on SR 3 south of the study area Chapel St indicated an annual growth rate of 2.53%, while station 121-5221 on SR 14 / SR 154 indicated an annual growth rate of 3.48%, but since this value is based on 6-7 years of data ranging over 13 years, it is not recommended for use in long-term forecasting. Analysis of Census data from 1990 to 2020 indicated that the resident population in the immediate area has declined by 1.08% annually. The study area falls within Census Tract 43 in Fulton County, GA, which had estimated 2020 population of 2,475 residents. The Atlanta Regional Commission (ARC)

population growth model estimates the population in tract 43 to grow from 4,968 to 7,589 by 2050, which would be an annual increase of 1.42% compounded annually, but population growth is expected to be only a minor factor in shifting travel demand in this area relative to regional factors impacting travel patterns. Therefore, the Atlanta Regional Commission Travel Demand Model future growth rate for this area (to year 2050), which is 1.2%, will be used to model future traffic volumes.

Volume Development

Figure 4 shows the process to calculate the Existing Year (2023) DHVs and AADT volumes. The 2023 AADT volumes were estimated from 12-hour counts to get the turn movement percentages and applying these to average AADT values for each approach (calculated by applying seasonal factors to ADT counts). The DHVs were calculated by using peak hour volumes to calculate turn movement percentages and applying those and the K-factors and D-factors to the 2023 AADTs. The Existing Year (2023) AADTs and DHVs are shown in **Appendix H**. Finally, the growth rate will be utilized to calculate the future year DHVs and AADTs listed below.

- Base year (2030)
- Base year +2 (2032)
- Design year (2050)
- Design year +2 (2052)

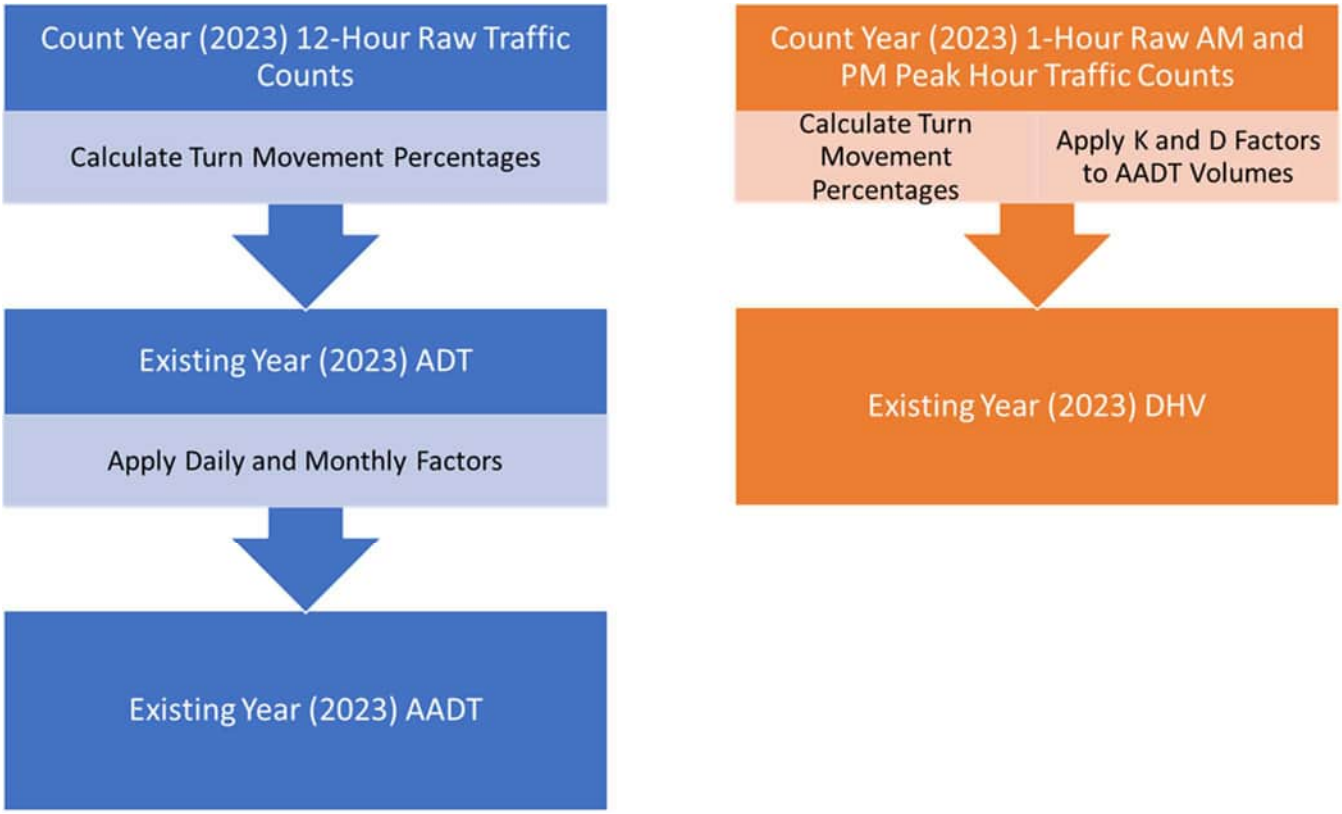


Figure 4 - Volume Development for the Existing Condition

Relevant Plans, Analysis, and Studies

This study will largely follow the recommendations of the previous scoping report, the Northside Drive Corridor Scoping Study (PI 0007557), which included review and consideration of over 50 relevant past plans and studies, as well as input from an extensive analysis and public engagement processes. The draft final report has been submitted to GDOT for review and comment at this time.

Spelman Lane is proposed to be closed as part of PI 0018303 and PI 0018343, which will cause some traffic to be diverted to this intersection. The build condition reflects the impacts of the Spelman Lane closure. Otherwise, the build and no build volumes are the same.

4. No Build Alternative Capacity Analysis

4.1 Intersection Level-of-Service Analysis

The "No Build" scenario capacity analysis results as calculated using the HCM 2000 methodology and Synchro 11 software package are summarized in Table 7.

Table 7 - No Build Synchro 11 Capacity Analysis Results

SR 3 @	2030 AM Delay	2030 AM LOS	2030 PM Delay	2030 PM LOS	2050 AM Delay	2050 AM LOS	2050 PM Delay	2050 PM LOS
Greensferry / McDaniel	20.6	C	75.4	E	28.5	C	220.1	F

The intersection of SR 3 at Greensferry Avenue/McDaniel Street is expected in the afternoon peak to be at capacity in the open year and over capacity in the design year, estimated at 75.4 seconds (LOS E) in 2030 and 220.1 seconds (LOS F) in 2050. These results were largely driven by development project volumes and forecasted increases in vehicle volumes on SR 3.

5. Potential Alternatives and Countermeasures

To compare alternatives at each signalized intersection in the study area, ICE analysis was performed. The results are briefly summarized below.

5.1 Intersection Control Evaluation (ICE) – Stage 1

This process was the framework for consideration of the most applicable intersection alternatives based on seven (7) questions, shown below. The results guided the selection of 3 alternatives to advance to Stage 2 analysis, as shown in **Table 8**.

1. Does alternative address the project need in a balanced manner and in scale with the project?
2. Does alternative improve safety performance in terms of reducing severe crashes?
3. Does alternative incorporate safety, convenience, and accessibility for pedestrians and bicyclists?
4. Does alternative improve (or preserve) traffic operations (congestion, delay, reliability, etc.)?
5. Does alternative appear feasible given the site characteristics, constraints, and location context?
6. Does alternative appear feasible with respect to other project factors?
7. Overall feasible alternative (select alternative for further evaluation in Stage 2)?

Table 8 - ICE Stage 1 Analysis Results

SR 3 @	Stage 1 Alternative	Need	Safety	Ped/Bike	Operations	Feasible site	Feasible project	Feasible overall	Advanced to ICE Stage 2
McDaniel Street	Traffic Signal	Y	Y	Y	Y	Y	Y	Y	Yes
	Add Left and Right Turn Lanes	Y	Y	Y	Y	Y	Y	Y	Yes
	Road Diet	Y	Y	Y	Y	Y	Y	Y	Yes

5.2 Crash Reduction Factors

The following crash reduction factors taken from the CMF Clearinghouse at http://www.cmfclearinghouse.org were used in the ICE analysis and overall benefit cost-ratio calculation for the recommended multimodal safety project:

- Change from Permitted-Protected to Protected on a Major Approach
  - CRF_{PDO}: 42% (CMF ID 340)
  - $CRF_{I/F}$: 42% (CMF ID 340)
- Road diet conversion from Six to Five Lanes
  - CRF_{PDO}: 3% (CMF ID 7, inverse)
  - $CRF_{I/F}$: 7% (CMF ID 9, inverse)
- Provide a Left-Turn Lane on Both Major-Road Approaches
  - CRF_{PDO}: 19% (CMF ID 270)
  - $CRF_{I/F}$: 17% (CMF ID 274)
- Provide a Right-Turn Lane on One Major-Road Approach
  - CRF_{PDO}: 14% (CMF ID 285)
  - $CRF_{I/F}$: 9% (CMF ID 288)

5.3 Intersection Control Evaluation (ICE) – Stage 2

Further analysis of each road diet alternative that advanced to ICE Stage 2 included consideration of planning-level cost estimates, traffic operations factors, and safety benefits estimated from crash data and appropriate crash reduction factors (CRFs) for property damage only (PDO) and injury or fatal crashes (I/F). These estimates were used to calculate a benefit-cost (B/C) ratio for each alternative, as well as an ICE score and rank among the alternatives considered. The results of the ICE Stage 2 analysis process are shown in **Table 9** with the preferred alternative shown in bold. Note that all alternatives considered include an assumed road diet along SR 3. The intersection alternative included in the study recommendations ranked 1st in ICE Stage 2.

Table 9 - ICE Stage 2 Analysis Results

SR 3 @	Alternative	Cost	CRF_{PDO}	$CRF_{I/F}$	Rank	Score
McDaniel Street	1 - Traffic Signal	$3,750,000	44%	46%	2	3.3
	2 - Add Left and Right Turn Lanes	**$3,750,000**	**28%**	**28%**	**1**	**3.3**
	3 - Road Diet	$2,550,000	21%	23%	3	3.1

6. Build Alternative Capacity Analysis

6.1 Preferred Build

In the Preferred Build scenario, SR 3 would be modified in both directions to have an exclusive left turn lane, an exclusive through lane, and a shared thru-right turn lane, and the receiving lanes would be reduced from three to two. Greensferry Avenue would remain largely unchanged with an exclusive left turn lane, a shared thru-right turn lane, and a single receiving lane. McDaniel Street would be modified to have an exclusive left turn lane, a shared thru-right turn lane, an exclusive right turn lane, and a single receiving lane. Signal phasing changes would include adding protected-permissive left turn phases as appropriate.

The results of capacity analysis using Synchro 11 for the Preferred Build scenario are summarized in Table 10.

Table 10 - Build Synchro 11 Capacity Analysis Results

SR 3 @	2030 AM Delay	2030 AM LOS	2030 PM Delay	2030 PM LOS	2050 AM Delay	2050 AM LOS	2050 PM Delay	2050 PM LOS
Greensferry / McDaniel	22.9	C	28.8	C	36.9	D	62.0	E

In the Preferred Build scenario, the intersection of SR 3 at Greensferry Avenue/McDaniel Street is expected to operate at an acceptable level of service during both peaks in the opening year. At the design year, the intersection is expected to operate near capacity in the morning peak with an average vehicle delay of 36.98 seconds (LOS D) and at capacity in the afternoon peak with an average vehicle delay of 62.0 seconds (LOS E.) These results were largely driven by development project volumes and forecasted increases in vehicle volumes on SR 3.

6.2 Queue Length Analysis

Queue length analysis was performed based on the 95th percentile queue lengths estimated in Synchro 10 for the 2050 Preferred Build scenario. The higher of the peak hour queue lengths was used, rounded up to the next multiple of 25. For many of the approaches, the through queue is expected to extend farther than the left turn queue, so the through queue length was recommended to prevent starvation of the left turn lane. For the southbound approach, the queue lengths were theoretically infinite, so a turn bay length of at least 300 feet is recommended. The results are shown in Table 11.

Table 11 - SR 3 95th Percentile Queue Lengths

SR 3 @	NBL	EBL	SBL	WBL
Greensferry Ave/McDaniel St	125	275	MAX	200

7. Conclusion

7.1 Recommendations

At the intersection of SR 3 and McDaniel Street, **it is recommended to add left turn lanes on both roads (north, south, and east legs; west leg has an existing left turn lane) and an exclusive right turn lane on McDaniel Street (east leg).** At this intersection there are a significant number of crashes between northbound and southbound through and left-turn movements. Converting through lanes to left-turn lanes on SR 3 will improve safety at the intersection.

Appendix A Synchro 11 Intersection Delay Reports

Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	11	60	462	1402	767
v/c Ratio	0.09	0.15	0.88	0.50	0.38
Control Delay	30.7	22.4	48.0	12.9	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	22.4	48.0	12.9	8.5
Queue Length 50th (ft)	7	25	244	170	70
Queue Length 95th (ft)	20	53	371	330	165
Internal Link Dist (ft)		443	191	793	152
Turn Bay Length (ft)	235				
Base Capacity (vph)	132	549	594	2796	1999
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.08	0.11	0.78	0.50	0.38

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	35	20	10	45	370	25	1255	10	125	570	10
Future Volume (vph)	10	35	20	10	45	370	25	1255	10	125	570	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	16	16	16	10	10	10	11	11	11
Grade (%)		3%			-3%			-3%			-1%	
Total Lost time (s)	3.4	4.5			4.5			4.7			4.7	
Lane Util. Factor	1.00	1.00			1.00			0.91			0.91	
Frpb, ped/bikes	1.00	0.99			0.98			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.94			0.88			1.00			1.00	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1551	1529			1764			4580			4654	
Flt Permitted	0.12	1.00			0.99			0.91			0.63	
Satd. Flow (perm)	201	1529			1755			4157			2971	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	38	22	11	49	402	27	1364	11	136	620	11
RTOR Reduction (vph)	0	16	0	0	134	0	0	0	0	0	1	0
Lane Group Flow (vph)	11	44	0	0	328	0	0	1402	0	0	766	0
Confl. Peds. (#/hr)	5		9	3		9	6		7	4		11
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	34.8	34.8			27.4			82.4			82.4	
Effective Green, g (s)	36.5	36.5			29.1			84.3			84.3	
Actuated g/C Ratio	0.28	0.28			0.22			0.65			0.65	
Clearance Time (s)	5.1	6.2			6.2			6.6			6.6	
Vehicle Extension (s)	2.0	3.0			3.0			5.0			5.0	
Lane Grp Cap (vph)	97	429			392			2695			1926	
v/s Ratio Prot	0.00	c0.03										
v/s Ratio Perm	0.03				c0.19			c0.34			0.26	
v/c Ratio	0.11	0.10			0.84			0.52			0.40	
Uniform Delay, d1	37.0	34.6			48.2			12.1			10.8	
Progression Factor	1.00	1.00			1.00			1.01			0.72	
Incremental Delay, d2	0.2	0.1			14.3			0.6			0.1	
Delay (s)	37.2	34.7			62.5			12.9			8.0	
Level of Service	D	C			E			B			A	
Approach Delay (s)		35.1			62.5			12.9			8.0	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	38	202	369	881	2533
v/c Ratio	0.27	0.51	0.83	0.32	1.48dl
Control Delay	36.2	41.0	46.1	10.4	98.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	41.0	46.1	10.4	98.8
Queue Length 50th (ft)	23	132	190	112	~947
Queue Length 95th (ft)	48	193	290	161	#1098
Internal Link Dist (ft)		440	191	793	151
Turn Bay Length (ft)	235				
Base Capacity (vph)	143	516	542	2763	2192
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.27	0.39	0.68	0.32	1.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	75	110	25	45	270	10	780	20	480	1825	25
Future Volume (vph)	35	75	110	25	45	270	10	780	20	480	1825	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	16	16	16	10	10	10	11	11	11
Grade (%)		3%			-3%			-3%			-1%	
Total Lost time (s)	3.4	4.5			4.5			4.7			4.7	
Lane Util. Factor	1.00	1.00			1.00			0.91			0.91	
Frpb, ped/bikes	1.00	0.98			0.96			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.91			0.89			1.00			1.00	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1609	1517			1805			4740			4822	
Flt Permitted	0.14	1.00			0.96			0.87			0.67	
Satd. Flow (perm)	241	1517			1743			4114			3261	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	82	120	27	49	293	11	848	22	522	1984	27
RTOR Reduction (vph)	0	10	0	0	115	0	0	1	0	0	1	0
Lane Group Flow (vph)	38	192	0	0	254	0	0	880	0	0	2532	0
Confl. Peds. (#/hr)	25		14	9		33	5		17	8		30
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	32.8	32.8			23.0			84.4			84.4	
Effective Green, g (s)	34.5	34.5			24.7			86.3			86.3	
Actuated g/C Ratio	0.27	0.27			0.19			0.66			0.66	
Clearance Time (s)	5.1	6.2			6.2			6.6			6.6	
Vehicle Extension (s)	2.0	3.0			3.0			5.0			5.0	
Lane Grp Cap (vph)	131	402			331			2731			2164	
v/s Ratio Prot	0.01	c0.13										
v/s Ratio Perm	0.06				c0.15			0.21			c0.78	
v/c Ratio	0.29	0.48			0.77			0.32			1.48dl	
Uniform Delay, d1	38.2	40.2			49.9			9.3			21.9	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.4	0.9			10.2			0.1			81.9	
Delay (s)	38.7	41.1			60.1			9.5			103.8	
Level of Service	D	D			E			A			F	
Approach Delay (s)		40.7			60.1			9.5			103.8	
Approach LOS		D			E			A			F	

Intersection Summary			
HCM 2000 Control Delay	75.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	117.5%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	16	76	581	1755	945
v/c Ratio	0.11	0.15	0.92	0.72	1.92dl
Control Delay	27.6	17.6	53.3	21.5	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	17.6	53.3	21.5	17.2
Queue Length 50th (ft)	9	25	339	372	165
Queue Length 95th (ft)	24	58	#601	474	224
Internal Link Dist (ft)		443	191	793	152
Turn Bay Length (ft)	235				
Base Capacity (vph)	156	584	642	2429	1807
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.10	0.13	0.90	0.72	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	40	30	15	55	465	35	1565	15	150	705	15
Future Volume (vph)	15	40	30	15	55	465	35	1565	15	150	705	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	16	16	16	10	10	10	11	11	11
Grade (%)		3%			-3%			-3%			-1%	
Total Lost time (s)	3.4	4.5			4.5			4.7			4.7	
Lane Util. Factor	1.00	1.00			1.00			0.91			0.91	
Frpb, ped/bikes	1.00	0.99			0.98			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.93			0.88			1.00			1.00	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1551	1511			1764			4579			4654	
Flt Permitted	0.15	1.00			0.99			0.88			0.64	
Satd. Flow (perm)	238	1511			1752			4043			3008	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	43	33	16	60	505	38	1701	16	163	766	16
RTOR Reduction (vph)	0	21	0	0	114	0	0	0	0	0	1	0
Lane Group Flow (vph)	16	55	0	0	467	0	0	1755	0	0	944	0
Confl. Peds. (#/hr)	5		9	3		9	6		7	4		11
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	44.1	44.1			36.6			73.1			73.1	
Effective Green, g (s)	45.8	45.8			38.3			75.0			75.0	
Actuated g/C Ratio	0.35	0.35			0.29			0.58			0.58	
Clearance Time (s)	5.1	6.2			6.2			6.6			6.6	
Vehicle Extension (s)	2.0	3.0			3.0			5.0			5.0	
Lane Grp Cap (vph)	125	532			516			2332			1735	
v/s Ratio Prot	c0.00	0.04										
v/s Ratio Perm	0.04				c0.27			c0.43			0.31	
v/c Ratio	0.13	0.10			0.91			0.75			1.92dl	
Uniform Delay, d1	32.0	28.3			44.1			20.6			17.0	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.1			19.4			2.3			0.4	
Delay (s)	32.1	28.4			63.5			22.9			17.3	
Level of Service	C	C			E			C			B	
Approach Delay (s)		29.0			63.5			22.9			17.3	
Approach LOS		C			E			C			B	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	103.6%	ICU Level of Service	G
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	43	255	462	1103	3196
v/c Ratio	0.25	0.53	0.89	0.49	2.78dl
Control Delay	30.8	39.2	53.2	15.9	318.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	39.2	53.2	15.9	318.9
Queue Length 50th (ft)	24	164	267	196	~1480
Queue Length 95th (ft)	50	242	#438	245	#1574
Internal Link Dist (ft)		440	191	793	151
Turn Bay Length (ft)	235				
Base Capacity (vph)	183	556	560	2238	1935
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.23	0.46	0.82	0.49	1.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	95	140	35	55	335	15	970	30	605	2300	35
Future Volume (vph)	40	95	140	35	55	335	15	970	30	605	2300	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	16	16	16	10	10	10	11	11	11
Grade (%)		3%			-3%			-3%			-1%	
Total Lost time (s)	3.4	4.5			4.5			4.7			4.7	
Lane Util. Factor	1.00	1.00			1.00			0.91			0.91	
Frpb, ped/bikes	1.00	0.98			0.96			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.91			0.89			1.00			1.00	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1611	1517			1807			4734			4824	
Flt Permitted	0.16	1.00			0.95			0.77			0.64	
Satd. Flow (perm)	265	1517			1723			3630			3140	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	103	152	38	60	364	16	1054	33	658	2500	38
RTOR Reduction (vph)	0	3	0	0	107	0	0	2	0	0	1	0
Lane Group Flow (vph)	43	252	0	0	355	0	0	1101	0	0	3195	0
Confl. Peds. (#/hr)	25		14	9		33	5		17	8		30
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	40.0	40.0			29.3			77.2			77.2	
Effective Green, g (s)	41.7	41.7			31.0			79.1			79.1	
Actuated g/C Ratio	0.32	0.32			0.24			0.61			0.61	
Clearance Time (s)	5.1	6.2			6.2			6.6			6.6	
Vehicle Extension (s)	2.0	3.0			3.0			5.0			5.0	
Lane Grp Cap (vph)	160	486			410			2208			1910	
v/s Ratio Prot	0.02	c0.17										
v/s Ratio Perm	0.07				c0.21			0.30			c1.02	
v/c Ratio	0.27	0.52			0.87			0.50			2.78dl	
Uniform Delay, d1	34.4	36.0			47.5			14.3			25.5	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.3	0.9			17.2			0.4			305.1	
Delay (s)	34.8	36.9			64.7			14.7			330.6	
Level of Service	C	D			E			B			F	
Approach Delay (s)		36.6			64.7			14.7			330.6	
Approach LOS		D			E			B			F	

Intersection Summary			
HCM 2000 Control Delay	220.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.45		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.6
Intersection Capacity Utilization	138.8%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	11	60	11	230	221	103	1375	136	631
v/c Ratio	0.09	0.24	0.07	0.71	0.60	0.23	0.67	0.45	0.25
Control Delay	40.4	30.8	48.1	34.1	13.1	17.4	21.2	15.4	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	30.8	48.1	34.1	13.1	17.4	21.2	15.4	6.1
Queue Length 50th (ft)	8	30	8	80	0	23	269	13	47
Queue Length 95th (ft)	22	60	26	163	74	119	695	110	177
Internal Link Dist (ft)		443		191			116		152
Turn Bay Length (ft)	235		100		160	100			
Base Capacity (vph)	126	526	357	522	550	444	2057	309	2527
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.11	0.03	0.44	0.40	0.23	0.67	0.44	0.25

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	35	20	10	45	370	95	1255	10	125	570	10
Future Volume (vph)	10	35	20	10	45	370	95	1255	10	125	570	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	16	16	16	10	10	10	11	11	11
Grade (%)		3%			-3%			-3%			-1%	
Total Lost time (s)	3.4	4.5		5.2	4.5	6.2	4.7	4.7		4.3	4.7	
Lane Util. Factor	1.00	1.00		1.00	0.95	0.95	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.88	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1550	1529		1934	1680	1611	1588	3191		1639	3266	
Flt Permitted	0.21	1.00		0.72	1.00	1.00	0.41	1.00		0.12	1.00	
Satd. Flow (perm)	340	1529		1461	1680	1611	689	3191		209	3266	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	38	22	11	49	402	103	1364	11	136	620	11
RTOR Reduction (vph)	0	18	0	0	119	197	0	0	0	0	0	0
Lane Group Flow (vph)	11	42	0	11	111	24	103	1375	0	136	631	0
Confl. Peds. (#/hr)	5		9	3		9	6		7	4		11
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	21.5	21.5		14.1	14.1	14.1	78.9	78.9		95.7	95.7	
Effective Green, g (s)	23.2	23.2		15.1	15.8	14.1	80.8	80.8		97.3	97.6	
Actuated g/C Ratio	0.18	0.18		0.12	0.12	0.11	0.62	0.62		0.75	0.75	
Clearance Time (s)	5.1	6.2		6.2	6.2	6.2	6.6	6.6		5.9	6.6	
Vehicle Extension (s)	2.0	3.0		3.0	3.0	3.0	5.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	97	272		169	204	174	428	1983		293	2452	
v/s Ratio Prot	0.00	c0.03			c0.07			c0.43		c0.04	0.19	
v/s Ratio Perm	0.02			0.01		0.01	0.15			0.30		
v/c Ratio	0.11	0.15		0.07	0.54	0.14	0.24	0.69		0.46	0.26	
Uniform Delay, d1	45.1	45.1		51.2	53.7	52.4	10.9	16.4		11.3	5.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.15	1.10		1.94	1.11	
Incremental Delay, d2	0.2	0.3		0.2	2.9	0.4	1.1	1.7		1.1	0.2	
Delay (s)	45.3	45.4		51.3	56.6	52.8	13.7	19.7		23.1	5.8	
Level of Service	D	D		D	E	D	B	B		C	A	
Approach Delay (s)		45.4			54.7			19.2			8.9	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	38	202	27	175	167	49	870	522	2011
v/c Ratio	0.26	0.70	0.18	0.61	0.53	0.78	0.75	0.74	0.80
Control Delay	45.1	59.3	54.0	34.2	13.6	107.5	42.8	30.7	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.1	59.3	54.0	34.2	13.6	107.5	42.8	30.7	14.8
Queue Length 50th (ft)	27	153	21	67	0	37	336	286	497
Queue Length 95th (ft)	55	224	49	143	68	#124	446	458	759
Internal Link Dist (ft)		440		191			110		151
Turn Bay Length (ft)	235		100		160				
Base Capacity (vph)	145	514	324	503	511	63	1161	704	2524
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.39	0.08	0.35	0.33	0.78	0.75	0.74	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	75	110	25	45	270	45	780	20	480	1820	30
Future Volume (vph)	35	75	110	25	45	270	45	780	20	480	1820	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	16	16	16	10	10	10	11	11	11
Grade (%)		3%			-3%			-3%			-1%	
Total Lost time (s)	3.4	4.5		5.2	4.5	6.2	4.7	4.7		4.3	4.7	
Lane Util. Factor	1.00	1.00		1.00	0.95	0.95	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	0.96	0.95	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.89	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1605	1517		1998	1728	1621	1659	3301		1702	3391	
Flt Permitted	0.23	1.00		0.63	1.00	1.00	0.10	1.00		0.13	1.00	
Satd. Flow (perm)	390	1517		1327	1728	1621	179	3301		240	3391	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	82	120	27	49	293	49	848	22	522	1978	33
RTOR Reduction (vph)	0	8	0	0	84	150	0	1	0	0	1	0
Lane Group Flow (vph)	38	194	0	27	91	17	49	869	0	522	2010	0
Confl. Peds. (#/hr)	25		14	9		33	5		17	8		30
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	23.4	23.4		13.6	13.6	13.6	42.8	42.8		93.8	93.8	
Effective Green, g (s)	25.1	25.1		14.6	15.3	13.6	44.7	44.7		95.4	95.7	
Actuated g/C Ratio	0.19	0.19		0.11	0.12	0.10	0.34	0.34		0.73	0.74	
Clearance Time (s)	5.1	6.2		6.2	6.2	6.2	6.6	6.6		5.9	6.6	
Vehicle Extension (s)	2.0	3.0		3.0	3.0	3.0	5.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	135	292		149	203	169	61	1135		701	2496	
v/s Ratio Prot	0.01	c0.13			0.05			0.26		0.27	c0.59	
v/s Ratio Perm	0.04			0.02		0.01	0.27			0.28		
v/c Ratio	0.28	0.66		0.18	0.45	0.10	0.80	0.77		0.74	0.81	
Uniform Delay, d1	43.9	48.5		52.3	53.4	52.7	38.7	38.0		25.3	11.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	5.6		0.6	1.6	0.3	57.1	3.7		4.3	2.9	
Delay (s)	44.3	54.1		52.9	55.0	53.0	95.8	41.7		29.6	14.0	
Level of Service	D	D		D	E	D	F	D		C	B	
Approach Delay (s)		52.6			53.9			44.6			17.2	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	76	16	287	278	141	1717	163	782
v/c Ratio	0.13	0.25	0.08	0.77	0.78	0.41	0.93	0.60	0.32
Control Delay	37.5	25.5	43.9	39.2	37.7	22.0	36.6	38.3	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	25.5	43.9	39.2	37.7	22.0	36.6	38.3	7.7
Queue Length 50th (ft)	12	33	12	128	108	59	622	74	84
Queue Length 95th (ft)	27	64	31	215	196	140	#974	#250	209
Internal Link Dist (ft)		443		191			116		152
Turn Bay Length (ft)	235		100		160	100			
Base Capacity (vph)	129	526	352	524	499	343	1842	272	2424
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.14	0.05	0.55	0.56	0.41	0.93	0.60	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	40	30	15	55	465	130	1565	15	150	705	15
Future Volume (vph)	15	40	30	15	55	465	130	1565	15	150	705	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	16	16	16	10	10	10	11	11	11
Grade (%)		3%			-3%			-3%			-1%	
Total Lost time (s)	3.4	4.5		5.2	4.5	6.2	4.7	4.7		4.3	4.7	
Lane Util. Factor	1.00	1.00		1.00	0.95	0.95	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.88	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1550	1511		1934	1679	1611	1590	3190		1639	3264	
Flt Permitted	0.17	1.00		0.71	1.00	1.00	0.36	1.00		0.05	1.00	
Satd. Flow (perm)	280	1511		1440	1679	1611	595	3190		91	3264	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	43	33	16	60	505	141	1701	16	163	766	16
RTOR Reduction (vph)	0	25	0	0	119	132	0	0	0	0	1	0
Lane Group Flow (vph)	16	51	0	16	168	146	141	1717	0	163	781	0
Confl. Peds. (#/hr)	5		9	3		9	6		7	4		11
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	25.7	25.7		18.2	18.2	18.2	70.0	70.0		91.5	91.5	
Effective Green, g (s)	27.4	27.4		19.2	19.9	18.2	71.9	71.9		93.1	93.4	
Actuated g/C Ratio	0.21	0.21		0.15	0.15	0.14	0.55	0.55		0.72	0.72	
Clearance Time (s)	5.1	6.2		6.2	6.2	6.2	6.6	6.6		5.9	6.6	
Vehicle Extension (s)	2.0	3.0		3.0	3.0	3.0	5.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	99	318		212	257	225	329	1764		269	2345	
v/s Ratio Prot	0.01	c0.03			c0.10			c0.54		c0.08	0.24	
v/s Ratio Perm	0.03			0.01		0.09	0.24			0.35		
v/c Ratio	0.16	0.16		0.08	0.66	0.65	0.43	0.97		0.61	0.33	
Uniform Delay, d1	42.4	41.9		47.8	51.8	52.9	17.0	28.1		36.1	6.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.2		0.2	5.9	6.3	4.0	15.9		3.8	0.4	
Delay (s)	42.6	42.1		47.9	57.7	59.1	21.1	44.0		40.0	7.2	
Level of Service	D	D		D	E	E	C	D		D	A	
Approach Delay (s)		42.2			58.1			42.3			12.8	
Approach LOS		D			E			D			B	

Intersection Summary			
HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	43	255	38	217	207	71	1087	658	2538
v/c Ratio	0.45	0.82	0.43	0.57	0.12	0.47	0.87	1.05	1.08
Control Delay	62.4	61.7	61.9	33.4	0.2	33.4	46.0	85.7	67.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	61.7	61.9	33.4	0.2	33.4	46.0	85.7	67.0
Queue Length 50th (ft)	32	166	28	100	0	17	442	~577	~1317
Queue Length 95th (ft)	73	#270	66	186	0	53	538	#831	#1447
Internal Link Dist (ft)		440		191			110		151
Turn Bay Length (ft)	235		100		160				
Base Capacity (vph)	109	349	103	424	1676	152	1251	626	2346
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.73	0.37	0.51	0.12	0.47	0.87	1.05	1.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	95	140	35	55	335	65	970	30	605	2295	40
Future Volume (vph)	40	95	140	35	55	335	65	970	30	605	2295	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	16	16	16	10	10	10	11	11	11
Grade (%)		3%			-3%			-3%			-1%	
Total Lost time (s)	4.5	4.5		5.2	4.5	4.0	2.1	4.7		5.0	4.7	
Lane Util. Factor	1.00	1.00		1.00	0.95	0.95	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	0.96	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.98	1.00		0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.89	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1579	1517		2003	1727	1676	1660	3297		1702	3391	
Flt Permitted	0.32	1.00		0.25	1.00	1.00	0.08	1.00		0.08	1.00	
Satd. Flow (perm)	535	1517		524	1727	1676	142	3297		140	3391	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	103	152	38	60	364	71	1054	33	658	2495	43
RTOR Reduction (vph)	0	42	0	0	75	0	0	2	0	0	1	0
Lane Group Flow (vph)	43	213	0	38	142	207	71	1085	0	658	2537	0
Confl. Peds. (#/hr)	25		14	9		33	5		17	8		30
Turn Type	Perm	NA		Perm	NA	Free	pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		Free	6			2		
Actuated Green, G (s)	21.4	21.4		21.4	21.4	130.0	51.9	47.4		95.8	87.3	
Effective Green, g (s)	23.1	23.1		22.4	23.1	130.0	55.7	49.3		97.4	89.2	
Actuated g/C Ratio	0.18	0.18		0.17	0.18	1.00	0.43	0.38		0.75	0.69	
Clearance Time (s)	6.2	6.2		6.2	6.2		4.0	6.6		6.6	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	95	269		90	306	1676	135	1250		626	2326	
v/s Ratio Prot		c0.14			0.08		0.03	0.33		c0.35	c0.75	
v/s Ratio Perm	0.08			0.07		0.12	0.20			0.44		
v/c Ratio	0.45	0.79		0.42	0.46	0.12	0.53	0.87		1.05	1.09	
Uniform Delay, d1	47.8	51.2		48.0	47.9	0.0	57.0	37.3		37.5	20.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	14.7		3.2	1.1	0.2	3.7	7.2		50.1	48.6	
Delay (s)	51.2	65.8		51.2	49.0	0.2	60.6	44.5		87.6	69.0	
Level of Service	D	E		D	D	A	E	D		F	E	
Approach Delay (s)		63.7			27.3			45.5			72.9	
Approach LOS		E			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	62.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	110.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Stage 1 ICE Report

GDOT INTERSECTION CONTROL EVALUATION (ICE) TOOL

ICE Version 2.22 | Revised 5/6/2022

GDOT PI#:	0018304	Request By:	O. Adekonojo
County:	Fulton	GDOT District:	7 - Metro Atlanta
Major Road:	SR3/Northside	Road Class:	Principal Arterial
Speed Limit:	35 mph		
Crossing Road:	McDaniel Street	Road Class:	Major Collector
Speed Limit:	35 mph		
Major Rd Direction:	North/South	Area Type:	Urban
Intersection Control:	Signal (no turn lanes on mainline)	Project ID:	
Prepared By:	C. Queen	Date:	6/27/2023
Project Purpose:	Corridor Safety and Operational Improvements		

Existing Data Year:	2023
Project Opening Year:	2028
Project Design Year:	2048
Annual Growth Rate:	1.2%
K Factor*:	8%

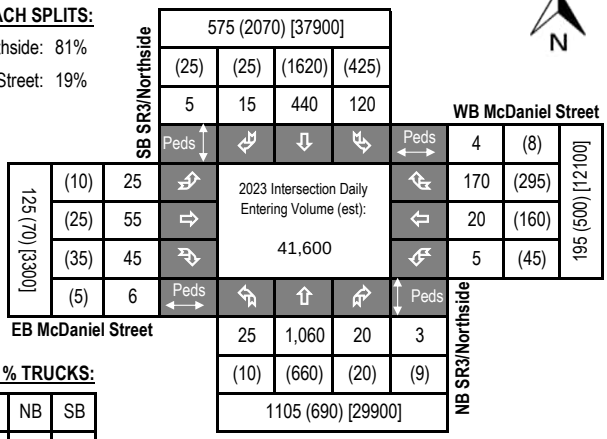
* K Factor = Proportion of average annual daily traffic occurring in the highest one hour of the day

APPROACH SPLITS:

SR3/Northside: 81%

McDaniel Street: 19%

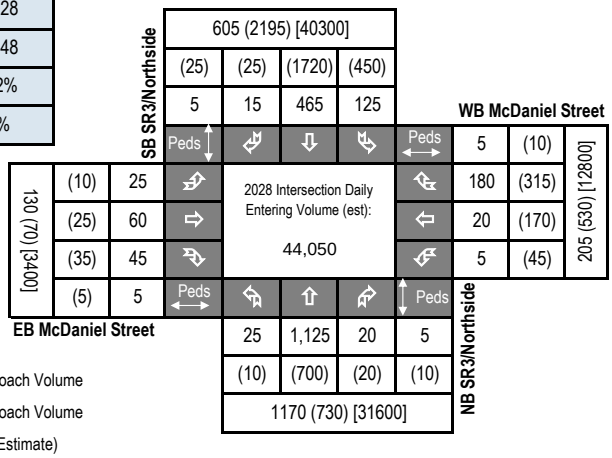
2023 EXISTING YEAR VOLUMES



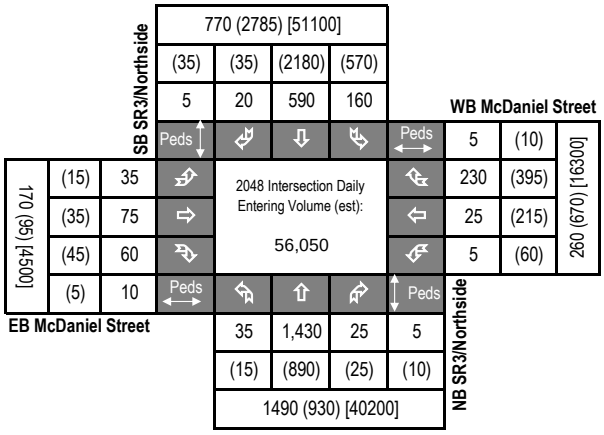
PEAK HR % TRUCKS:

EB	WB	NB	SB
1%	3%	3%	3%

2028 OPENING YEAR VOLUMES



2048 DESIGN YEAR VOLUMES



LEGEND:

000 = AM Peak Approach Volume

(000) = PM Peak Approach Volume

[000] = ADT Volume (Estimate)

Introduction: In 2005, SAFETEA-LU established the Highway Safety Improvement Program (HSIP) and mandated that each state prepare a Strategic Highway Safety Plan (SHSP) to prioritize safety funding investments. Intersections quickly became a common component of most states' SHSP emphasis areas and HSIP project lists, including Georgia's SHSP. Intersection Control Evaluation (ICE) policies and procedures represent a traceable and transparent procedure to streamline the evaluation of intersection control alternatives, and further leverage safety advancements for intersection improvements beyond just the safety program. Approximately one-third of all traffic fatalities and roughly seventy five percent of all traffic crashes in Georgia occur at or adjacent to intersections. Accordingly, the Georgia SHSP includes an emphasis on enhancing intersection safety to advance the *Toward Zero Deaths* vision embraced by the Georgia Governor's Office of Highway Safety (GOHS). This ICE tool was developed to support the ICE policy, developed and adopted to help ensure that intersection investments across the entire Georgia highway system are selected, prioritized and implemented with defensible benefits for safety towards those ends.

Tool Goal: The goal of this ICE tool is to provide a simplified and consistent way of importing traffic, safety, cost, environmental impact and stakeholder posture data to assess and quantify intersection control improvement benefits. The tool supports the ICE policy and procedures to provide traceability, transparency, consistency and accountability when identifying and selecting an intersection control solution that both meets project purpose and reflects overall best value in terms of specific performance-based criteria.

Requirements: An ICE is required for any intersection improvement (e.g. new or modified intersection, widening/reconstruction or corridor project, or work accomplished through a driveway or encroachment permit that affects an intersection) where: **1)** the intersection includes at least one roadway designated as a State Route (State Highway System) or as part of the National Highway System; or **2)** the intersection will be designed or constructed using State or Federal funding. In certain circumstances where an ICE would otherwise be required, the requirement may be waived based on appropriate evidence presented with a written request. (See the "**Waiver**" tab to review criteria that may make a project waiver eligible and for instructions to submit a waiver request to the Department). An ICE is not required when the proposed work does not include any changes to the intersection design, involves only routine traffic signal timing and equipment maintenance, or for driveway permits where the driveway is not a new leg to an already existing intersection on either 1) a divided, multi-lane highway with a closed median and only right-in/right-out access or 2) an undivided roadway where the development is not required to construct left and/or right turn lanes (as per the Driveway Manual and District Traffic Engineer).

Two-Stage Process: A complete ICE process consists of two (2) distinct stages, and it is expected that the respective level of effort for completing both stages of ICE will correspond to the magnitude and complexity of the intersection. Prior to starting an ICE, the District Traffic Engineer and/or State Traffic Engineer should be consulted for advice on an appropriate level of effort. The Stage 1 and Stage 2 ICE forms are designed minimize required data inputs using drop-down menu choices and limiting text entry. All fields shaded grey include drop down menu choices and all fields shaded blue require data entry. All other cells in the worksheet are locked.

Stage 1: Screening Decision Record Stage 1 should be conducted early in the project development process and is intended to inform which alternatives are worthy of further evaluation in Stage 2. Stage 1 serves as a screening effort meant to *eliminate* non-competitive options and identify which alternatives merit further considerations based on their practical feasibility. Users should use good engineering judgement in responding to the seven policy questions by selecting "Yes" or "No" in the drop-down boxes. Alternatives should not be summarily eliminated without due consideration, and reasons for eliminating or advancing an alternative should be documented in the "Screening Decision Justification" column.

Stage 2: Alternative Selection Decision Record Stage 2 involves a more detailed and familiar evaluation of the alternatives identified in Stage 1 in order to support the selection of a preferred alternative that may be advanced to detailed design. Stage 2 data entry may require the use of external analysis tools to determine costs, operations and/or safety data that, combined with environmental and stakeholder posture data, form the basis of the ICE evaluation. A separate "CostEst" worksheet tab helps users develop pre-planning-level cost estimates for each Stage 2 alternative evaluated, and a separate Users Guide has been prepared to give guidance on Stage 1 and Stage 2 data entry. Once all data is entered, each alternative is scored and ranked, with the results reported at the bottom of the Stage 2 worksheet to inform on the best of the intersection controls evaluated for project recommendation.

Documentation: A complete ICE document consists of the combination of the outputs from either a completed and signed waiver form or both Stage 1 and Stage 2 worksheets (along with supporting costing and/or environmental documentation), to be included in the approved project Concept Report (or equivalent) or as a stand-alone document.

GDOT ICE STAGE 1: SCREENING DECISION RECORD

ICE Version 2.22 | Revised 5/6/2022

GDOT PI #	0018304
Project Location:	SR3/Northside @ McDaniel Street
Existing Control:	Signal (no turn lanes on mainline)
Prepared by:	C. Queen
Date:	6/27/2023

Answer "Yes" or "No" to each policy question for each control type to identify which alternatives should be evaluated in the Stage 2 Decision Record; enter justification in the rightmost column

Note: Up to 5 alternatives may be selected and evaluated; Use this ICE Stage 1 to screen 5 or fewer alternatives to evaluate in Stage 2

	Intersection Alternative (see "Intersections" tab for detailed description of intersection/interchange type)	1. Does alternative address the project need in a balanced manner and in scale with the project?	2. Does alternative improve safety performance in terms of reducing severe crashes?	3. Does alternative incorporate safety, convenience and accessibility for pedestrians and/or bicyclists?	4. Does alternative improve (or preserve) traffic operations (congestion, delay, reliability, etc.)?	5. Does alternative appear feasible given the site characteristics, constrains & location context?	6. Does alternative appear feasible with respect to other project factors?	7. Overall feasible alternative (select alternative for further evaluation in Stage 2)?	**Screening Decision Justification:**
Unsignalized Intersections	Conventional (Minor Stop)	No	No	No	No	No	No	No	Operationally infeasible
	Conventional (All-Way Stop)	No	No	No	No	No	No	No	Operationally infeasible
	Mini Roundabout	No	No	No	No	No	No	No	Operationally infeasible
	Single Lane Roundabout	No	No	No	No	No	No	No	Operationally infeasible
	Multilane Roundabout	No	No	No	No	No	No	No	Low BC due to high ROW costs
	RCUT (stop control)	No	No	No	No	No	No	No	No existing median
	RIRO w/down stream U-Turn	No	No	No	No	No	No	No	No existing median
	High-T (unsignalized)	No	No	No	No	No	No	No	N/A, More than 3 legs
	Offset-T Intersections	No	No	No	No	No	No	No	Low BC due to high ROW costs
	Diamond Interch (Stop Control)	No	No	No	No	No	No	No	N/A, Not an interchange
	Diamond Interch (RAB Control)	No	No	No	No	No	No	No	N/A, Not an interchange
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	N/A
	Other unsignalized (provide description):	No	No	No	No	No	No	No	N/A
Signalized Intersections	Traffic Signal	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	Change SR 3 from 6-lane to 5-lane
	Median U-Turn (Indirect Left)	No	No	No	No	No	No	No	No existing median
	RCUT (signalized)	No	No	No	No	No	No	No	No existing median
	Displaced Left Turn (CFI)	No	No	No	No	No	No	No	Low BC due to high ROW costs
	Continuous Green-T	No	No	No	No	No	No	No	N/A, More than 3 legs
	Jughandle	No	No	No	No	No	No	No	Low BC due to high ROW costs
	Quadrant Roadway	No	No	No	No	No	No	No	Low BC due to high ROW costs
	Diamond Interch (Signal Control)	No	No	No	No	No	No	No	N/A, Not an interchange
	Diverging Diamond	No	No	No	No	No	No	No	N/A, Not an interchange
	Single Point Interchange	No	No	No	No	No	No	No	N/A, Not an interchange
	Add LT Lanes on Both Roads Add one RT Lane on McDaniel Street	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	Significant number of crashes between NB and SB Ts and Ls
	Other Signalized (Road Diet)	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	Change SR 3 from 6-lane to 5-lane

= Intersection type selected for more detailed analysis in Stage 2 Alternative Selection Decision Record

GDOT ICE STAGE 2: ALTERNATIVE SELECTION DECISION RECORD

ICE Version 2.22 | Revised 5/6/2022

Project Location: SR3/Northside @ McDaniel Street
Existing Intersection Control: Signal (no turn lanes on mainline)
Type of Analysis: Conventional Non-Safety Funded Project

District: 7 - Metro Atlanta
County: Fulton
Area: Urban

GDOT PI #: 0018304
Prepared by: C. Queen
Date: 6/27/2023

Opening / Design Year Traffic Operations

Intersection meets signal/AWS warrants?	Meets Signal Warrants	
Traffic Analysis Measure of Effectiveness	Intersection Delay	
Traffic Analysis Software Used	Synchro	
Analysis Time Period	AM Peak Hr	PM Peak Hr
2028 Opening Yr No-Build Peak Hr Intersection Delay	12.7 sec	103.2 sec
2028 Opening Yr No-Build Peak Hr Intersection V/C	0.46	1.18
2048 Design Yr No-Build Peak Hr Intersection Delay	16.8 sec	236.1 sec
2048 Design Yr No-Build Peak Hr Intersection V/C	0.63	1.53

Complete Streets Warrants Met?
- ☑ PEDESTRIANS
- ☑ BICYCLES
- ☑ TRANSIT

Crash Data: Enter most recent 5 years of crash data	*Crash Severity*					Years:
Crash Type	K*	A*	B*	C*	O	5
Angle	0	4	12	23	30	46%
Head-On	0	0	1	0	0	1%
Rear End	0	0	1	14	24	26%
Sideswipe - same	0	0	0	1	28	19%
Sideswipe - opposite	0	0	0	1	0	1%
Not Collision w/Motor Veh	0	0	2	0	8	7%
TOTALS:	0	4	16	39	90	149

* Number of crashes resulting in injuries / fatalities, not number of persons

Alternatives Analysis:

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Proposed Control Type/Improvement:	Traffic Signal	Add LT and RT Lanes	Other Signalized (Road Diet)	N/A	N/A
Project Cost: (From CostEst Worksheet)	*SB Dual Lefts*	*LT bays, McDaniel dual right*	*5-lanes w LT bays*	*Additional description here*	*Additional description here*
Construction Cost	$1,750,000	$1,750,000	$1,500,000		
ROW Cost	$1,000,000	$1,000,000	$500,000		
Environmental Cost	$500,000	$500,000	$250,000		
Reimbursable Utility Cost	$250,000	$250,000	$100,000		
Design & Contingency Cost	$250,000	$250,000	$200,000		
Cost Adjustment (justification req'd)					
Total Cost	$3,750,000	$3,750,000	$2,550,000		
Traffic Operations:					
Traffic Analysis Software Used	Synchro	Synchro	Synchro		
Analysis Period	AM Peak Hr / PM Peak Hr	AM Peak Hr / PM Peak Hr	AM Peak Hr / PM Peak Hr		
2048 Design Yr Build Intersection Delay	23.3 sec / 118.4 sec	22.6 sec / 82.3 sec	26.2 sec / 141.7 sec		
2048 Design Yr Build Intersection V/C	0.77 / 1.22	0.79 / 1.04	0.80 / 1.24		
Safety Analysis:					
Predefined CRF: PDO	39%	27%	0%		
Predefined CRF: Fatal/Inj	40%	24%	0%		
Predefined CRF Source:	FHWA Clearinghouse #s 7982 / 7984	FHWA Clearinghouse #s 270&285 / 274&288	CRF unavailable; provide user defined CRF below		
User Defined CRF: PDO	44%	28%	21%		
User Defined CRF: Fatal/Inj	46%	28%	23%		
User Defined CRF Source (write in if applicable):	CMF 340, 7 / 9	CMF 270/274, 285/288, 7 / 9	CMF 270/274, 7 / 9		
Environmental Impacts:[1]					
Historic District/Property	Minimal	Minimal	Minimal		
Archaeology Resources	None	None	None		
Graveyard	None	None	None		
Stream	None	None	None		
Underground Tank/Hazmat	**Significant**	**Significant**	Minimal		
Park Land	None	None	None		
EJ Community	Minimal	Minimal	Minimal		
Wooded Area	None	None	None		
Wetland	None	None	None		

*Note: If environmental impact is significant (**RED**), provide justification impact won't jeopardize project delivery using "Env" worksheet*

[1] *Environmental impacts are only preliminary estimates; detailed environmental impact documentation will be included with project concept*

Stakeholder Posture:					
Local Community Support	Unknown	Unknown	Unknown		
GDOT Support	Unknown	Unknown	Unknown		
Final ICE Stage 2 Score:	**3.3**	**3.3**	**3.1**		
Rank of Control Type Alternatives:	**2**	**1**	**3**		
Final Intersection Control Selection:	**1 - Add LT and RT Lanes**				

Note: Stage 2 score is not given (shown as "-") if signal or AWS is selected as control type but respective warrants are not met

Provide additional comments and/or explain any unique analysis inputs, or results (as necessary):

ICE ENVIRONMENTAL FACTORS

ICE Version 2.22 | Revised 5/6/2022

Project Information

GDOT District:	7 - Metro Atlanta	Date:	6/27/2023
Requested By:	O. Adekonojo	Area Type:	Urban
County:	Fulton	Prepared By:	C. Queen
Project Location:	SR3/Northside @ McDaniel Street		
Existing Intersection Control:	Signal (no turn lanes on mainline)		

Environmental Factors

In the box below, document any significant environmental factors for any alternative considered. Include a plan and costs for mitigation that retains the proposed intersection type as a viable alternative. Include in ICE documentation package only if one or more alternatives have significant impacts.

Proposed Intersection Control #1: Traffic Signal

Widening McDaniel St to 4 lanes would increase the roadway width by 10-15 feet, which could result in partial encroachment on the underground storage tank at the gas station to the north and possibly a taking. This impact could be mitigated by widening to the south to reduce the amount of widening to the north of McDaniel St.

Proposed Intersection Control #2: Add LT and RT Lanes

Widening McDaniel St to 4 lanes would increase the roadway width by 10-15 feet, which could result in partial encroachment on the underground storage tank at the gas station to the north and possibly a taking. This impact could be mitigated by widening to the south to reduce the amount of widening to the north of McDaniel St.

Proposed Intersection Control #3: Other Signalized (Road Diet)

None

Proposed Intersection Control #4: N/A

None

Proposed Intersection Control #5: N/A

None

MS4 Concept Report Summary

P.I. Number: 0018304

PLE Evaluation

Attach the following checklist information to the Concept Report Template:

Is there a Project Level Exclusion that applies to this project: ☐ No ☐ Yes

If yes, please indicate which of the following exclusions apply:

☐ 1. Roadway not owned or operated (maintained) by GDOT may not require post-construction BMPs. Coordinate with the appropriate local government or entity to determine stormwater management requirements.

☐ 2. The project location is not in an GDOT's MS4 area.

☐ 3. Maintenance and safety improvement project such as resurfacing, maintenance projects that do not add impervious surface area, driveway access paving, shoulder paving and building, fiber optic line installation, sign addition, safety barrier installation, multi-use projects used solely for recreational purposes and separate from transportation projects (e.g. bike lanes on roads), and sound barrier installation. (RCUTs and roundabouts do not qualify for PLE 3 but they may be evaluated for PLE 5 during preliminary design).

☐ 4. Project with environmental documents approved or right-of-way plans submitted for approval on or before June 30, 2012.

5. Road project that disturbs less than 1 acre **(Evaluate during Preliminary Design)**.

6. Site development/redevelopment project that creates, adds, or replaces less than 5,000 ft^2 of impervious area **(Evaluate during Preliminary Design)**.

☐ 7. Project in MS4 area added to GDOT's 2017 MS4 permit with concept approval (start of preliminary engineering) before January 3, 2018.

☒ 8. Project in Combined Sewer Overflow area.

Minutes of Concept Team Meeting

AECOM
1360 Peachtree Street NE,
One Midtown Plaza, Suite 500
Atlanta, GA 30309
www.aecom.com
678 808 8882 tel

SR 3/Northside Drive at Greensferry Ave/ McDaniel St
Project No:
PI No: 0018304 – Fulton County

Meeting Minutes

Subject: Concept Meeting

Date: August 14, 2023

Location: Teams

Attendees: Olusola Adekonojo, GDOT PM, OAdekonojo@dot.ga.gov
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Colin Abbey, GDOT OTO, rabbey@dot.ga.gov
Albert Shelby, Director OPD, ashelby@dot.ga.gov
Jean Hee Barrett, ARC - jbarrett@atlantaregional.org
Ossie Brewer, ODPS, OBrewer@dot.ga.gov
Cynthia Burney, GDOT D7 PM, cburney@dot.ga.gov
Nicole Defrancisco, GDOT OES Archaeologist, NDefrancisco@dot.ga.gov
Kimberly Nesbitt, State Program Delivery Administrator, knesbitt@dot.ga.gov

Meeting Notes:

- Please change the Ozone Non-Attainment area check box to yes.

Other Meeting Minutes

AECOM
1360 Peachtree Street NE,
One Midtown Plaza, Suite 500
Atlanta, GA 30309
www.aecom.com
678 808 8882 tel

SR 3/Northside Drive at Greensferry Ave/ McDaniel St
Project No:
PI No: 0018304 – Fulton County

Meeting Minutes

Subject: Initial Concept Meeting

Date: June 12, 2023

Location: Teams

Attendees:
Michael Lewies, GDOT Survey, mlewis@dot.ga.gov
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Solomon Caviness, City of Atlanta (ATLDOT) Commissioner, SCaviness@atlantaGA.gov

Meeting Notes:

- This is a main signal used during Mercedes Benz events
- Additional stakeholders:
  - Morehouse
  - Mercedes Benz
  - World Congress Center
  - West End CID
- **Scoping Document:**
  - Survey Scope:
    - None
  - Environmental
    - Add additional scope for stakeholder engagement
  - Environmental
    - NEPA: No comments
    - Ecology: no comments
    - Cultural Resources: no comments
  - Survey
    - Assume Mobilization for 0018303, 0018304, & 0018343
    - Unstrike line 91