

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

**OFFICE OF DESIGN POLICY & SUPPORT
INTERDEPARTMENTAL CORRESPONDENCE**

FILE P.I. #0010111 - PE ONLY **OFFICE** Design Policy & Support
T.I.P.# GW-345A
GDOT District 1 - Gainesville
Gwinnett County **DATE** March 29, 2011
Diverging Diamond Interchange
I-85 @ SR 140/Jimmy Carter Blvd.

FROM *Brent Story*
for Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT APPROVED CONCEPT REPORT

Attached is the approved Concept Report for the above subject project. This project is included in the Atlanta Regional Commission's Transportation Improvement Program as project GW-345A.

Attachment

DISTRIBUTION:

Genetha Rice-Singleton, Program Control Administrator
Bobby Hilliard, State Program Delivery Engineer
Cindy VanDyke, State Transportation Planning Administrator
Angela Robinson, Financial Management Administrator
Glenn Bowman, State Environmental Administrator
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BOARD MEMBER - 4th Congressional District

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

PROJECT CONCEPT REPORT

Gwinnett County Project Number: F-0780-01

County: Gwinnett

TIP Project Number: GW-345A

P. I. Number: ~~N/A~~ **OD10111-PE** *dfc*

Federal Route Number: I-85

State Route Number: SR 140 (Jimmy Carter Blvd)

County Route Number: CR 1305 (Jimmy Carter Blvd)

I-85 North Diverging Diamond Interchange at Jimmy Carter Blvd/SR 140

Submitted for approval:

DATE 1/24/2011

DATE 1/25/2011

DATE 1/25/2011

DATE 1/25/2011

M. J. ...
 Kimley-Horn and Associates, Inc.
...
 Gwinnett County Department of Transportation
Russell F. M. Murray *CAH*
 Office Head - Office of Roadway Design
...
 Project Manager

Recommendation for approval:

DATE _____

DATE 02/15/2011

DATE 02/15/2011

DATE 01/26/2011

DATE 02/15/2011

DATE 01/26/2011

DATE 02/20/2011

DATE _____

Program Control Administrator
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 District Engineer / District Utilities Engineer
BEN RABUN *
 State Bridge Design Engineer
 State Transportation Financial Management Administrator

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and/or the State Transportation Improvement Program (STIP).

DATE 1-29-11

Cynthia L. ...
 State Transportation Planning Administrator

*** RECOMMENDATION ON FILE / *dfc***

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Need and Purpose Statement
Gwinnett County
I-85 North Diverging Diamond Interchange at Jimmy Carter Boulevard
P.I. No: N/A
TIP Project Number: GW-345A

The purpose of the Diverging Diamond Interchange improvements at the I-85 interchange with SR 140/Jimmy Carter Blvd corridor is to:

1. Improve vehicular safety by reducing the number of conflict points at the signalized intersections of the I-85 ramp terminals and reducing the rate of occurrence and severity of vehicle crashes.
2. Reduce traffic congestion and accommodate the need for mobility, access, and goods movement on a critical facility.
3. Facilitate efficient operation of traffic entering and exiting I-85 by reducing the number of signal phases at each ramp terminal signal, resulting in an improvement in overall signal operation and efficiency.
4. Improve pedestrian safety by providing for a raised, channelized, and barrier-protected pedestrian walkway.

The need for the Diverging Diamond Interchange improvements at the I-85 interchange with SR 140/Jimmy Carter Blvd is based on:

1. Deficient levels-of-service (LOS) for vehicular traffic through the corridor.
2. Accident rates and injury rates that significantly exceed statewide averages for similar facilities.

(See Attachments for Full Need and Purpose Statement as approved by GDOT Office of Planning on October 27, 2010)

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Description of the proposed project: Project P.I. 0010111 consists of approximately 0.54 miles of widening, median construction, signing, pavement marking, signalization, and minor bridge rail and sidewalk re-construction along SR 140/Jimmy Carter Blvd between approximate limits at Goshen Springs Road and Live Oak Parkway (approximate MP 3.12 to MP 3.39 along Jimmy Carter Blvd and approximate MP 5.44 to MP 5.71 along SR 140).

The proposed project will construct a Diverging Diamond Interchange (DDI) improvement at the intersections of Jimmy Carter Boulevard and I-85 ramps. The project will also include widening of the Goshen Springs Road approach to Jimmy Carter Boulevard to construct a right-turn lane, as recommended by previous Gwinnett County traffic and signalization studies on the corridor. The right-turn lane addition will be accompanied by minor modifications to the existing signal to accept the proposed dedicated right-turn lane.

The proposed project seeks to improve operations along the corridor by reducing delays at the I-85 ramp intersections. The DDI improvement proposes an innovative way to accommodate heavy left-turn volumes in a more efficient manner. By crossing the traffic lanes over, the left-turns obtain free-flow operation onto the I-85 ramps. The result is elimination of left-turn queues at a signal, allowing the same amount of left-turn traffic volume to be accommodated with fewer lanes. By reducing the laneage requirements, the improvements can be constructed within the existing width of the Jimmy Carter Blvd bridge over I-85. While the existing bridge sufficiency rating is 50.28, the bridge does not warrant a high-priority of replacement or rehabilitation since none of the structural components are rated less than 5. Thus, the bridge rating is largely driven by functional deficiencies and still has significant structural service life. Since the bridge appears to have significant service life remaining, this project proposes to maximize the life of the bridge asset by constructing operational improvements within the existing bridge footprint and with minimal impact to the existing structure.

Logical termini for the project are established considering the project as an intersection improvement. The project limits are of a sufficient length to improve operation of the signalized intersections, while also improving pedestrian mobility at the location. The preferred alternative is a stand-alone project that ties into the existing capacity on either end of the project. Construction of the proposed project would not require additional transportation improvements. The preferred alternative also would not restrict consideration of reasonably foreseeable transportation improvements.

The proposed improvements will address the Purpose and Need by:

- a. improving intersection delays along the SR 140/Jimmy Carter Blvd corridor at the I-85 ramp intersections,
- b. improving vehicular operation at these intersections by reducing vehicular conflict points, and
- c. improving pedestrian operation by reducing the number of pedestrian conflict points with unsignalized vehicular movements.

Additionally, the project will include re-construction of traffic signals, which will include upgrading all pedestrian components of the signals to current standards (i.e. countdown ped signals and ADA-compliant ped ramps and push-button locations).

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While the primary focus of the project is improvement of vehicular operations at the intersection, the proposed improvements include features that decrease the potential for vehicle/pedestrian conflict within the interchange area. These features include a barrier-separated pedestrian walkway.

Is the project located in a PM 2.5 Non-attainment area? Yes ___ No

Is this project located in an Ozone Non-attainment area? Yes ___ No
Exempt from conformity modeling.

PDP Classification: Major Minor

Federal Oversight: Full Oversight () Exempt (X) State Funded () or
Other ()

Functional Classification: Jimmy Carter Boulevard (SR 140) Urban Principal Arterial

U. S. Route Number(s): N/A State Route Number(s): SR 140

Traffic (AADT):

Jimmy Carter Boulevard (SR 140):

Existing Year ADT (2010): 59,800

Base Year ADT (2012): 61,500

Design Year ADT (2022): 70,600

Existing Year DHV (2010): 3,675 (AM) 3,900 (PM)

Base Year DHV (2012): 3,775 (AM) 4,000 (PM)

Design Year DHV (2022): 4,425 (AM) 4,650 (PM)

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Existing design features:

Jimmy Carter Boulevard (CR 1305) [East of I-85 Interchange]

- Typical Section: Two (2) 11-foot through lanes (WB)
Three (3) 11-foot through lanes (EB)
Two (2) 11-foot left turn lanes (WB)
One (1) 4-foot center median w/2-foot raised conc island
One (1) 6-foot through lane/right-turn lane median w/2-foot raised conc island (WB)
One (1) 12-foot right turn lane (WB)
2'-6" curb and gutter
5'-0" sidewalk (WB side only)
- Posted speed: 40 mph
- Minimum radius for curve: 5,729.58' (1 degree)
- Maximum super-elevation rate for curve: 2.0 % (+/-) (normal crown)
- Maximum grade: 4 % (+/-)
- Width of right-of-way: Varies 115 ft. to 135 ft. (approximate)
- Major structures: Jimmy Carter Boulevard (SR 140) Bridge over I-85
 - Existing Bridge: 176' x 90.50'
 - Structure ID No: 135-0035-0
 - Suff Rating: 48.39
 - Typical Section:
One (1) 10-foot outside through lane (WB/EB)
One (1) 11-foot inside through lane (WB/EB)
Two (2) 11-foot left turn lanes (WB)
One (1) 11-foot left-turn lane (EB)
2'-0" gutter offset and 6" curb
4'-0" sidewalk

Jimmy Carter Boulevard (SR 140) [West of I-85 Interchange]

- Typical Section: Three (3) 11-foot through lanes (WB)
Three (3) 11-foot through lanes (EB)
One variable width raised center median
One (1) 11-foot right turn lane (EB)
2'-6" curb and gutter
- Posted speed: 45 mph
- Minimum radius for curve: 5,729.58' (1 degree)
- Maximum super-elevation rate for curve: 2.0% (+/-) (normal crown)
- Maximum grade: 5 % (+/-)
- Width of right-of-way: Varies 100 ft. to 195 ft. (approximate)
- Major interchanges or intersections along the project:
 - Jimmy Carter Blvd (SR 140) at I-85
 - Jimmy Carter Blvd (SR 140) at Goshen Springs Road

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- Existing length of roadway segment: 0.54 miles
 MP 3.12 to MP 3.39 along CR 1305/Jimmy Carter Blvd
 MP 5.44 to MP 5.71 along SR 140

Proposed Design Features:

Jimmy Carter Boulevard (CR 1305) [East of I-85 Interchange]

- Typical Section: Three (3) 11-foot through lanes (WB/EB)*
One (1) variable width raised center median w/ low landscaping
One (1) variable width raised turn lane barrier median (WB)
One (1) 11-foot right turn lane (WB)
12-foot urban shoulder
2'-6" curb and gutter
5'-0" sidewalk
2'-0" grass strip
2'-6" border behind sidewalk

*Note: Through-lane transitions from 11' to 14' in cross-over curves

- Proposed Design Speed Mainline: 25 mph (speed zone reduction)
- Proposed Maximum grade Mainline: Match Existing (5 % (+/-))
- Maximum grade allowable: 9% (urban arterial/rolling)
- Proposed Maximum grade driveway: Match Existing (varies by location)
- Proposed minimum radius of curve: 200' Radius
- Minimum radius allowable: 198' Radius
- Maximum allowable superelevation rate: $e_{MAX} = -2.0\%$ (normal crown, low-speed)
- Proposed maximum superelevation rate: -2.0 % (normal crown)

Jimmy Carter Boulevard (SR 140) Bridge over I-85

- Maintain existing bridge external dimensions
- Typical Section: One (1) 11-foot through lane (WB)
Two (2) 11-foot through lanes (EB)
One (1) 11-foot shared through/left lane (WB)
One (1) 11-foot dedicated left turn lane (WB/EB)
17'-2" center median with side barrier with 6'-2" pedestrian walkway
4'-0" "outside" shoulder adjacent to center median
2'-0" "inside" shoulder adjacent to outside bridge barriers

Jimmy Carter Boulevard (SR 140) [West of I-85 Interchange]

- Typical Section: Three (3) 11-foot through lanes (WB/EB)*
One (1) variable width raised center median w/ low landscaping
One (1) 11-foot right turn lane (EB)
12-foot urban shoulder
2'-6" curb and gutter
5'-0" sidewalk
2'-0" grass strip
2'-6" border behind sidewalk

*Note: Through-lane transitions from 11' to 14' in cross-over curves

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- Proposed Design Speed Mainline: 25 mph (speed zone reduction)
- Proposed Maximum grade Mainline: Match Existing (5 % (+/-))
- Maximum grade allowable: 9% (urban arterial/rolling)
- Proposed Maximum grade driveway: Match Existing (varies by location)
- Proposed minimum radius of curve: 200' Radius
- Minimum radius allowable: 198' Radius
- Maximum allowable superelevation rate: e_{MAX} = -2.0 % (normal crown, low-speed)
- Proposed maximum superelevation rate: -2.0 % (normal crown)

- Right-of-Way
 - Right-of-Way: Width Varies 100 ft to 195 ft
 - Easements: Temporary (X) Permanent (X) Utility () Other ()
 - Type of access control: Full () Partial () By Permit (X) Other ()
 - Number of parcels: 7 Number of displacements:
 - Business: 0
 - Residences: 0
 - Mobile homes: 0
 - Other: 0

- Structures:
 - Jimmy Carter Boulevard (SR 140) Bridge over I-85: No structural or rehabilitative changes anticipated as part of this project. Proposed modifications include removal of existing sidewalks and replacement of side barriers, constructing center pedestrian walkway, addition of pedestrian walkway barriers, modification of signing and marking, and lighting.
 - Retaining walls: Existing retaining walls forming the abutments of the Jimmy Carter Boulevard/SR 140 Bridge over I-85 will not be modified as a result of this project. Proposed standard gravity walls may be required at isolated locations to contain widening.

- Transportation Management Plan Anticipated: Yes () No (X)
- Design Exceptions to controlling criteria anticipated:

	<u>YES</u>	<u>NO</u>	<u>UNDETERMINED</u>
DESIGN SPEED:	()	(X)	()
LANE WIDTH:	()	(X)	()
SHOULDER WIDTH:	()	(X)	()
BRIDGE WIDTH:	()	(X)	()
HORIZONTAL ALIGNMENT:	(X)	()	()
SUPERELEVATION:	()	(X)	()
VERTICAL ALIGNMENT:	()	(X)	()
GRADE:	()	(X)	()
STOPPING SIGHT DISTANCE:	()	(X)	()
CROSS SLOPE:	()	(X)	()
VERTICAL CLEARANCE:	()	(X)	()
LATERAL OFFSET TO OBSTRUCTION:	()	(X)	()
STRUCTURAL CAPACITY:	()	(X)	()

- Design Exceptions: Horizontal Alignment
 The design speed along Jimmy Carter Boulevard (SR140), functionally-classified as a Urban Principal Arterial, is 40 mph east of the I-85 Interchange and 45 mph west of the I-85

Interchange. The proposed project will reconstruct the existing, conventionally-configured Diamond Interchange to a Diverging Diamond Interchange. The major controlling element of a DDI (other than vertical alignment) is the design speed of the horizontal alignment (e.g. crossover movements). The crossover movements associated with the proposed project have been designed to meet 25 mph. The placement of the crossovers is largely dependent on the spacing and location of the Interstate Interchange Ramps (i.e. intersections spaced closely together will result in lower horizontal curve radii). The horizontal alignment of the DDI consists of three main interacting elements: 1) crossing angle; 2) tangent length approaching and following the crossover; and 3) curve radii approaching and following the crossover.

1. Crossing Angle.

a. Potential mitigation strategies:

- i. Additional signage indicating “no right turn” or “no left turn” at cross-over intersections to clarify permitted movements.
- ii. Enhanced pavement markings, such as directional arrows on opposite side of intersection to guide traffic to appropriate lanes.
- iii. Enhanced pavement markings, such as RPMs and “chicken tracks” across intersection for guidance.
- iv. Additional intersection lighting for clarity during night-time operations.
- v. Upward orientation of “green arrow” on signal installations to indicate straight-ahead movement.

2. Tangent Length.

a. Potential mitigation strategies:

- i. Additional signage indicating reverse curves.
- ii. Enhanced pavement markings, such as RPMs for guidance.
- iii. Select curve radii such that normal crown can be maintained throughout based on design speed and low-speed superelevation criteria.

3. Curve Radii.

a. Potential mitigation strategies:

- i. Additional signage indicating reverse curves.
- ii. Enhanced pavement markings, such as RPMs for guidance.

- o Note: Bridge Width design exception not anticipated since clear width between barriers will meet the curb-to-curb width of the approaching lanes. This meets current policy for both new construction as well as 3R policy for urban bridges. Clear width between barriers also selected to meet a minimum coding of “4” for Item 68 of BIMS based on number of approach lanes to ensure that minimum tolerable limits are met for the bridge to remain functional after construction of the DDI.

- Design Variances: None
- Environmental Concerns:
 - o Anticipated permits required:
 - NPDES permit
 - Encroachment Permit: To be issued by GDOT.
 - Signals Permit: Plan submittal to Gwinnett County for review and comment, then to GDOT for issuance of permit. No warrant studies required as no new

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signal locations are proposed, only modifications to existing signalized intersections.

- Previous environmental screening findings:
 - Due to culturally diverse businesses and high population of minorities, the project is considered to be an Environmental Justice area.
 - The Westside Police Precinct and its parking lot are adjacent to the project area and may be impacted by the proposed project.
 - Five religious institutes were observed in an office park adjacent to the project study area. No cemeteries were observed.
 - No historic properties identified within a 0.5 mile radius of the project.
 - Potential hazardous material involvement
- Anticipated Level of environmental analysis:
 - Are Time Savings Procedures appropriate? Yes (X) No ()
 - Categorical exclusion anticipated (X).
 - Environmental Assessment/Finding of No Significant Impact anticipated (FONSI) ().
 - Environmental Impact Statement (EIS) ().
- Utility involvements
 - Utility facilities located within the project limits include:
 - Electrical/Electrical Transmission
 - Gas
 - Sanitary Sewer
 - Telecommunications
 - ATMS/ITS
 - Telephone
 - Television
 - Water
 - Subsurface Utility Exploration (SUE) Level D completed
- VE Study Anticipated Yes () No (X)
- Benefit/Cost Ratio 6.5

Project Cost Estimate and Funding Responsibilities:

	PE	ROW	Utility	CST	Mitigation
By Whom	GVCID	Gwinnett County DOT	Gwinnett County DOT	Gwinnett County DOT	N/A
\$ Amount	\$391,000	\$487,000	\$500,000	\$2,231,000	N/A

**CST Cost includes: Construction, Engineering and Inspection, Fuel Cost Adjustment, and Asphalt Cement Cost Adjustment*

Project Activities and Responsibilities:

- Design: Gwinnett Village CID (GVCID) Consultant

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- Right-of-Way Acquisition: Gwinnett County DOT (GWDOT)
- Right-of-Way funding (real property): GWDOT
- Relocation of Utilities: GWDOT /Utility Owners
- Letting to contract: GWDOT
- Posted Speed Reduction: GWDOT/GDOT
- Supervision of construction: GWDOT
- Providing material pits: Contractor
- Providing detours: Contractor
- Environmental Studies/Documents/Permits: GVCID
Consultant
- Environmental Mitigation: None Anticipated

Coordination:

Initial Concept Meeting date and brief summary. July 26, 2010

Concept Meeting date and brief summary. (None Anticipated)

P A R meetings, dates and results: (None Anticipated)

FEMA, USCG, and/or TVA: (None Anticipated)

Public Involvement: PIOH (scheduled for March 1, 2011 at GVCID offices)

Local government comments: N/A

Other projects in the area: Intersection improvements on SR 140/Jimmy Carter Blvd

1. At Singleton Rd – PI 0006698 (approx 0.8 mile south of I-85)
 - a. Currently in design and R/W acquisition
2. At North Norcross-Tucker Road (approx 0.5 mile north of I-85)
 - a. Currently in design and R/W acquisition

Railroads: N/A

Other coordination to date: 8 Policy Requirements for an Interchange Modification Report (IMR)

The FHWA Guidance on Interstate Access Requests document provides the requirements for the justification and documentation necessary to substantiate any proposed changes in access to the Interstate System. This policy also facilitates decision making regarding proposed changes in access to the Interstate System in a manner that considers and is consistent with the vision, goals and long-range transportation plans of a metropolitan area, region and State.

The FHWA's decision to approve a request is dependent on the proposal satisfying and documenting the following 8 requirements.

1. “The existing interchange and/or local roads and streets in the corridor can neither provide the necessary access nor be improved to satisfactorily accommodate the design-year traffic demands while at the same time providing the access intended by the proposal.” In other words, the need being addressed by the request cannot be adequately satisfied by existing interchanges to the Interstate, and/or local roads and streets in the corridor can neither provide the desired access, nor can they be reasonably improved (such as access control along surface streets, improving traffic control, modifying ramp terminals and intersections, adding turn bays or lengthening storage) to satisfactorily accommodate the design-year traffic demands.

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The initial VISSIM model analysis of the DDI at the proposed interchange has indicated that the average delay at the interchange is reduced both in the AM and PM through modifications that can be constructed on the surface street (Jimmy Carter Blvd/SR 140). These modifications, including improvements to the ramp terminal intersections, enhance the efficiency of the traffic operations on Jimmy Carter Blvd, which satisfies this requirement.

2. "All reasonable alternatives for design options, location, and transportation system management type improvements (such as ramp metering, mass transit, and HOV facilities) have been assessed and provided for if currently justified, or provisions are included for accommodating such facilities if a future need is identified."

The need being addressed by the request cannot be adequately satisfied by reasonable transportation system management (such as ramp metering, mass transit, and HOV facilities), geometric design, and alternative improvements to the Interstate without the proposed modifications.

The DDI is an alternative improvement on Jimmy Carter Blvd that will have minimal (if any) impacts to I-85. The DDI can be constructed requiring only minor modifications to the existing bridge (i.e. sidewalk and barrier reconstruction) without the need to replace or widen the structure. No change in access to the interstate facility is proposed.

Further, the DDI improvements do not compromise the operation of the existing ramp metering. As demonstrated in Tables 9 and 10, a series of traffic modeling analyses compare the operation of the existing ramp meters under AM and PM peak hour conditions. Note that the analysis considers the current algorithms, provided by GDOT, for the timing of the ramp meter signals. The processed volume is used as a calibration check to verify that the ramp meter is being subjected to similar peak hour traffic levels. As noted, the ramp meters are processing almost exactly the same peak hour volume. In the AM peak hour scenario, the Build condition (DDI) requires marginally fewer "flush cycles" than the No-Build condition. Essentially, this indicates that the ramp meters process a similar volume of traffic without having to release as many slugs onto I-85 to control ramp queueing. For the PM peak hour condition, the Build condition (DDI) requires marginally more "flush cycles" to process similar volumes and control ramp queueing characteristics.

Table 9				
AM Peak Hour Ramp Comparison				
I-85 Southbound On-Ramp				
Ramp Metrics	2010		2012	
	No-Build	Build	No-Build	Build
Processed Volume	1453	1459	1510	1510
Average Number of Ramp Flushes*	6.2	5.8	7.7	7.2
Average Queue*	514	617	485	614

Table 10				
PM Peak Hour Ramp Comparison				
I-85 Northbound On-Ramp				
Ramp Metrics	2010		2012	
	No-Build	Build	No-Build	Build
Processed Volume	1387	1396	1404	1403
Average Number of Ramp Flushes*	18.2	18.8	18.5	19.0
Average Queue*	174	191	163	197

* Note: Average values summarized based on six iterations of the model

3. “The proposed access point does not have a significant adverse impact on the safety and operation of the interstate facility based on an analysis of current and future traffic. The operational analysis for existing conditions shall, particularly in urbanized areas, include an analysis of sections of Interstate to and including at the first adjacent existing or proposed interchange on each side. Crossroads and other roads and streets shall be included in the analysis to the extent necessary to assure their ability to collect and distribute traffic to and from the interchange with the new or revised access points.”

An operational and safety analysis must have concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis shall, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in

access. The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, shall be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network.

Requests for a proposed change in access must include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network. Each request must also include a conceptual plan of the type and location of the signs proposed to support each design.

The DDI would have no impact to the safety of the I-85 corridor, as it will not change the operations of the existing ramps. The initial VISSIM model has indicated that the DDI would also have no impacts to the operations of the I-85 corridor, as the current operation of the ramp meters during peak hours are maintained in such a way that entering volumes do not exceed the current throughputs. The DDI improvements actually improve the exit-ramp operations at the intersection with Jimmy Carter Blvd as demonstrated by VISSIM modeling and level of service results. By converting the intersection signalization to two-phase operation with the DDI, more cycle time is afforded to the left-turns from the I-85 exit ramps. Furthermore, with the DDI configuration, potential queueing from the entrance ramps will not impact left-turn operations from the exit ramps as it does in the existing "diamond" configuration.

4. "The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" for special purpose access for transit vehicles, for HOV's, or into park and ride lots may be considered on a case-by-case basis. The proposed access will be designed to meet or exceed current standards for Federal-aid projects on the Interstate System."

The proposed DDI modifications do not change the access to any of the local streets or the I-85 corridor. The DDI will continue to provide for all traffic movements and full access to the interstate. The proposed access will be designed to meet or exceed current standards.

5. "The proposal considers and is consistent with local and regional land use and transportation plans. Prior to the final approval, all requests for new or revised access must be consistent with the metropolitan and or statewide transportation plan, as appropriate, the applicable provisions of 23 CFR part 450 and transportation conformity requirements of 40 CFR parts 51 and 93."

The proposal considers and is consistent with local and regional land use and transportation plans. Prior to receiving final approval, all requests for new or revised access must be included in an adopted Metropolitan Transportation Plan, in the adopted Statewide or Metropolitan Transportation Improvement Program (STIP or TIP), and the Congestion Management Process within transportation management areas, as appropriate, and the transportation conformity requirements.

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The existing interchange is planned for reconstruction to a tight urban diamond interchange, which is the preferred alternative of the IMR completed by Jacobs Engineering (approved 2009). The TIP number is GW-345A & 345B.

6. "In areas where the potential exists for future multiple interchange additions, all requests for new or revised access are supported by a comprehensive interstate network study with recommendations that address all proposed and desired access within the context of a long-term plan."

In corridors where the potential exists for future multiple interchange additions, a comprehensive corridor or network study must accompany all requests for new or revised access with recommendations that address all of the proposed and desired access changes within the context of a longer-range system or network plan.

The TIP does not indicate any new or planned interchanges on I-85 adjacent to Jimmy Carter Blvd in the future.

7. "The request for a new or revised access generated by new or expanded development demonstrates appropriate coordination between the development and related or otherwise required transportation system improvements."

When a new or revised access point is due to a new, expanded, or substantial change in current or planned future development or land use, requests must demonstrate appropriate coordination has occurred between the development and any proposed transportation system improvements. The request must describe the commitments agreed upon to assure adequate collection and dispersion of the traffic resulting from the development with the adjoining local street network and Interstate access point.

This is not a new access point, but a modification to an existing access point. The modification is not generated by new or expanded development.

8. "The request for new or revised access contains information relative to the planning requirements and the status of the environmental processing of the proposal."

The proposal can be expected to be included as an alternative in the required environmental evaluation, review and processing. The proposal should include supporting information and current status of the environmental processing.

It is anticipated the proposed DDI project will follow GDOT's Plan Development Process (PDP), including NEPA documentation taking place during the preliminary plans phase. For this type of project (i.e. bridge replacement/modification), the anticipated class of action is a categorical exclusion (CE); however, FHWA will make the final decision as to what class of action is appropriate after their review of the concept. Typical requirements for a CE include early coordination and notification for local, state, and federally interested agencies; survey, reporting, and agency review in accordance with Section 106 of the National Historic Preservation Act, the Clean Water Act, the Endangered Species Act, the Migratory Bird

Gwinnett County Project Number: F-0780-01

P.I. Number: N/A

TIP Project Number: GW-345A

County: Gwinnett

Treaty Act, the Farmland Protection Policy Act, and others; and the preparation of the appropriate NEPA document, which must be approved by GDOT and FHWA.

Scheduling – Responsible Parties’ Estimate

- Time to complete the environmental process: Begin: Sept 2010 End: July 2011
- Time to complete preliminary construction plans: Begin: Sept 2010 End: Mar 2011
- Time to complete right-of-way plans: Begin: Mar 2011 End: May 2011
- Time to complete the Section 404 Permit: Begin: N/A End: N/A
- Time to complete final construction plans: Begin: Mar 2011 End: Aug 2011
- Time to complete the purchase of right-of-way: Begin: July 2011 End: Dec 2011
- Other major items affecting project schedule:
 - Utility relocations: Begin: Aug 2011 End: Dec 2011

Project Concept Report Page 16
Gwinnett County Project Number: F-0780-01
P.I. Number: N/A
TIP Project Number: GW-345A
County: Gwinnett

Other alternates considered:

The No-Build alternate was considered as a comparison point to the proposed Build alternate. As demonstrated previously, the existing interchange configuration results in deficient LOS under current conditions. The existing interchange also exhibits accident rates that are more than three times the statewide average for similar facilities. Based on this data, it was concluded that a No-Build alternate could not satisfy the demonstrated needs.

Comments:

Design Vehicle: Jimmy Carter Boulevard (SR 140): WB-40

Lighting: Design will follow the guidance set forth in Chapter 14 of the GDOT Design Policy Manual. Placement of pedestrians into center walkway will likely require additional lighting.

Staging Concept:

Anticipated staging for the construction of the DDI will include the short-term closure of Jimmy Carter Blvd traffic over I-85. A conceptual staging narrative follows:

Stage 1: Install advance warning signs and note closure to pedestrians between the ramp intersections along Jimmy Carter Blvd. Install temporary markings and adjust existing signal heads to shift lanes north to set temporary traffic barrier along the south side of the Jimmy Carter Blvd bridge. Behind temporary barrier, remove existing sidewalk/barrier from the south side of the bridge and install new bridge traffic barrier. Construct widening (up to but not including surface course) areas outside of the bridge limits along the south side of Jimmy Carter Blvd.

Stage 2: Install temporary markings and adjust existing signal heads to shift lanes south adjacent to newly-installed bridge traffic barrier. Set temporary traffic barrier along north side of the Jimmy Carter Blvd bridge. Behind temporary barrier, remove existing sidewalk/barrier from the north side of the bridge and install new bridge traffic barrier. Construct widening (up to but not including surface course) areas outside of the bridge limits along the south side of Jimmy Carter Blvd. Install new/temporary signal poles and equipment outside of widening areas.

Stage 3: Obliterate existing medians and mill existing asphalt surface course under traffic. Install and bag temporary DDI signal head locations. Install and cover final roadside and overhead signing. Shut down Jimmy Carter Blvd between the I-85 ramps, allowing only right-turn movements from the I-85 exit ramps onto Jimmy Carter Blvd. With short-term closure of Jimmy Carter Blvd over I-85 traffic, complete the following activities:

1. Unbag and activate temporary DDI signal heads. Uncover previously-installed signing.

Gwinnett County Project Number: F-0780-01

P.I. Number: N/A

TIP Project Number: GW-345A

County: Gwinnett

2. Inlay new asphalt surface course.
3. Remove Stage 2 temporary striping from bridge deck. Install all final pavement markings to shift traffic to DDI cross-over operation.
4. Install proposed signal loops and tie to temporary signal system.
5. Install channelizing devices (barrels, barriers) to assist in maintaining traffic in DDI cross-over operation and to delineate pedestrian walkway and median construction to occur in Stage 4.

Stage 4: Re-open Jimmy Carter Blvd to vehicular traffic by shifting to proposed DDI configuration. Construct pedestrian walkway, barriers, and medians. Install remaining final signing locations and final proposed signal components. During off-peak hours, de-activate temporary signals and activate final signal equipment. Remove temporary signal components. Re-open Jimmy Carter Blvd to pedestrian traffic through use of final signal locations and completed pedestrian walkway.

Attachments:

1. Detailed Cost Estimates:
 - a. Construction including Engineering and Inspection.
 - b. Completed Fuel/Asphalt price adjustment form.
 - c. Right-of-Way
2. Bridge Inventory.
3. Concept Layout and Typical Sections.
4. Approved Need and Purpose Statement.
5. Capacity Analyses and Accident Summaries (included in Need and Purpose statement).
6. Approved Traffic Diagrams.
7. Minutes of Concept Meetings (7/26/2010).
8. TIP Project Sheet.
9. Benefit Cost Analysis.

Exempt projects

Concur:



Director of Engineering

Approve:



Chief Engineer

Date: 3/29/2011

ATTACHMENTS

Construction Cost Estimate - Concept Level

Jimmy Carter Boulevard/SR 140 @ I-85 DDI

PI No. 0010111

Prepared by Kimley-Horn and Associates, Inc. - May 26, 2010

ITEM #	ITEM DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	COST
ROADWAY ITEMS					
150-1000	TRAFFIC CONTROL - PROJECT -	LS	LUMP	300000.00	300000.00
210-0100	GRADING COMPLETE - PROJECT NO.	LS	LUMP	200000.00	200000.00
310-1101	GR AGGR BASE CRS, INCL MATL	TN	1750	14.96	26180.00
318-3000	AGGREGATE SURFACE COURSE	TN	500	17.12	8560.00
402-3103	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, TYPE II, GP 2 ONLY, INCL BITUM MATL & H LIME	TN	1250	60.31	75387.50
402-3121	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	TN	1000	53.81	53810.00
402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	TN	250	57.93	14482.50
413-1000	BITUM TACK COAT	GL	650	1.72	1118.00
441-0104	CONC SIDEWALK, 4 IN	SY	1450	23.65	34292.50
441-0106	CONC SIDEWALK, 6 IN	SY	300	23.06	6918.00
441-0740	CONCRETE MEDIAN, 4 IN	SY	3322	22.60	75077.20
441-6222	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	LF	2000	11.87	23740.00
500-2100	CONCRETE BARRIER	LF	275	75.00	20625.00
500-2101	CONCRETE BARRIER WITH GLARE SCREEN	LF	275	175.00	48125.00
500-9999	CLASS B CONC. BASE OR PVMT WIDENING	CY	105	163.31	17147.55
999-9999	CONCRETE RETAINING WALL, NW QUADRANT	LS	LUMP	75000.00	75000.00
				SECTION SUB TOTAL	\$960,463.25
BRIDGE ITEMS					
449-2000	SIDEWALK JOINT AND COVER PLATES	LF	176	200.00	35200.00
500-2100	CONCRETE BARRIER	LF	528	75.00	39600.00
500-2101	CONCRETE BARRIER WITH GLARE SCREEN	LF	176	175.00	30800.00
500-1006	SUPERSTR CONCRETE, CL A	CY	20	1200.00	24000.00
511-3000	SUPERSTR REINF STEEL	LB	3000	1.00	3000.00
540-1202	REMOVAL OF PARTS OF EXISTING BRIDGE	LS	1	85000.00	85000.00
				SECTION SUB TOTAL	\$217,600.00
PERMANENT EROSION CONTROL ITEMS					
603-2181	STN DUMPED RIP RAP, TP 3, 18 IN	SY	30	33.69	1010.70
603-7000	PLASTIC FILTER FABRIC	SY	30	3.32	99.60
700-6910	PERMANENT GRASSING	AC	1	669.77	669.77
700-7000	AGRICULTURAL LIME	TN	2	52.05	104.10
700-7010	LIQUID LIME	GL	2	16.03	32.06
700-8000	FERTILIZER MIXED GRADE	TN	1	400.18	400.18
700-8100	FERTILIZER NITROGEN CONTENT	LB	40	2.24	89.60
700-9300	SOD	SY	1300	2.76	3588.00
716-2000	EROSION CONTROL MATS, SLOPES	SY	2000	0.94	1880.00
				SECTION SUB TOTAL	\$7,874.01
TEMPORARY EROSION CONTROL ITEMS					
163-0232	TEMPORARY GRASSING	AC	1	296.36	296.36
163-0240	MULCH	TN	38	144.95	5508.10
163-0300	CONSTRUCTION EXIT	EA	4	922.26	3689.04
163-0550	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	EA	23	142.47	3276.81
165-0030	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	LF	4000	0.68	2720.00
165-0101	MAINTENANCE OF CONSTRUCTION EXIT	EA	4	441.53	1766.12
165-0105	MAINTENANCE OF INLET SEDIMENT TRAP	EA	23	53.08	1220.84
167-1000	WATER QUALITY MONITORING AND SAMPLING	EA	4	412.56	1650.24
167-1500	WATER QUALITY INSPECTIONS	MO	36	511.37	18409.32
171-0030	TEMPORARY SILT FENCE, TYPE C	LF	4000	2.84	11360.00
				SECTION SUB TOTAL	\$49,896.83
SIGNING/MARKING/SIGNAL ITEMS					
636-1033	HIGHWAY SIGNS, TP1 MATL, REFL SHEETING, TP 9	SF	750	20.00	15000.00
639-3003	STEEL STRAIN POLE, TP III	EA	8	6080.00	48640.00
639-3004	STEEL STRAIN POLE, TP IV	EA	8	8684.63	69477.04
647-1000	TRAFFIC SIGNAL INSTALLATION NO - PERMANENT	LS	2	100000.00	200000.00
647-1000	TRAFFIC SIGNAL INSTALLATION NO - TEMPORARY	LS	2	30000.00	60000.00
653-0110	THERMOPLASTIC PVMT MARKING, ARROW, TP 1	EA	13	71.14	924.82
653-0120	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	EA	2	68.30	136.60
653-0130	THERMOPLASTIC PVMT MARKING, ARROW, TP 3	EA	1	91.29	91.29
653-1501	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	LF	6530	0.31	2024.30
653-1502	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	LF	1610	0.32	515.20
653-1704	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	LF	168	3.62	608.16
653-1804	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	LF	1550	1.69	2619.50
653-3501	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	GLF	1135	0.22	249.70
653-4501	THERMOPLASTIC TRAF STRIPING, WHITE	SY	1050	2.54	2667.00
657-1054	PREFORMED PLASTIC SOLID PVMT MKG, 5 IN, WHITE, TP PB	LF	350	3.89	1361.50
657-3054	PREFORMED PLASTIC SKIP PVMT MKG, 5 IN, WHITE, TP PB	GLF	700	2.36	1652.00
657-6054	PREFORMED PLASTIC SOLID PVMT MKG, 5 IN, YELLOW, TP PB	LF	350	3.74	1309.00
				SECTION SUB TOTAL	\$407,276.11
DRAINAGE ITEMS					
550-1180	STORM DRAIN PIPE, 18 IN, H 1-10	LF	1360	29.26	39793.60
550-4218	FLARED END SECTION 18 IN, STORM DRAIN	EA	3	451.98	1355.94
611-3000	RECONSTR CATCH BASIN, GROUP 1	EA	6	1263.06	7578.36
611-3030	RECONSTR STORM SEW MANHOLE, TYPE 1	EA	2	1281.70	2563.40
668-1100	CATCH BASIN, GP 1	EA	15	2112.83	31692.45
				SECTION SUB TOTAL	\$82,983.75
LIGHTING ITEMS					
615-1200	DIRECTIONAL BORE - 4 IN	LF	330	8.51	2808.30
682-6120	CONDUIT, RIGID, 2 IN	LF	330	7.45	2458.50
682-6222	CONDUIT, NONMETL, TP 2, 2 IN	LF	3700	4.77	17649.00
999-0014	INSTALLATION OF FOUNDATIONS FOR STREET LIGHTS	EA	30	2000.00	60000.00
				SECTION SUB TOTAL	\$82,915.80
LANDSCAPING ITEMS					
009-3500	MISCELLANEOUS LANDSCAPE ITEMS	LS	LUMP	100000.00	100000.00
				SECTION SUB TOTAL	\$100,000.00

TOTAL \$1,929,009.75

SUBTOTAL CONSTRUCTION COST \$1,929,010

E&C RATE 10.0%

\$192,901

TOTAL CONSTRUCTION COST

\$2,121,911

P.I. Number 0010111

County Gwinnett

Project Number Gwinnett County #F-0780-01

Special Provision, Section 109-Measurement and Payment
FUEL PRICE ADJUSTMENT (*ENGLISH 125% MAX*)

ENTER FPL DIESEL	2.986
ENTER FPM DIESEL	6.719

ENTER FPL UNLEADED	2.672
ENTER FPM UNLEADED	6.012

<http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx>

INCREASE ADJUSTMENT
125.00%

INCREASE ADJUSTMENT
125.00%

ROADWAY ITEMS	QUANTITY	DIESEL FACTOR	GALLONS DIESEL	UNLEADED FACTOR	GALLONS UNLEADED	REMARKS
Excavations paid as specified by Sections 205 (CUBIC YARD)		0.29		0.15		
Excavations paid as specified by Sections 206 (CUBIC YARD)		0.29		0.15		
GAB paid as specified by the ton under Section 310 (TON)	1750.000	0.29	507.50	0.24	420.00	
Hot Mix Asphalt paid as specified by the ton under Sections 400 (TON)		2.90		0.71		
Hot Mix Asphalt paid as specified by the ton under Sections 402 (TON)	2500.000	2.90	7250.00	0.71	1775.00	
PCC Pavement paid as specified by the square yard under Section 430 (SY)		0.25		0.20		

BRIDGE ITEMS	Quantity	Unit Price	QF/1000	Diesel Factor	Gallons Diesel	Unleaded Factor	Gallons Unleaded	REMARKS
Bridge Excavation (CY) Section 211				8.00		1.50		
Class __Concrete (CY) Section 500				8.00		1.50		
Class __Concrete (CY) Section 500				8.00		1.50		
Class __Concrete (CY) Section 500				8.00		1.50		
Superstru Con Class__(CY) Section 500	20.00	1,200.00	24.0000	8.00	192.00	1.50	36.00	
Superstru Con Class__(CY) Section 500				8.00		1.50		
Superstru Con Class__(CY) Section 500				8.00		1.50		
Concrete Handrail (LF) Section 500				8.00		1.50		
Concrete Barrier (LF) Section 500	1254.00	100.00	125.4000	8.00	1003.20	1.50	188.10	

BRIDGE ITEMS	Quantity	Unit Price	QF/1000	Diesel Factor	Gallons Diesel	Unleaded Factor	Gallons Unleaded	REMARKS
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Stru Steel <u>Plan Quantity</u> (LB) Section 501				8.00		1.50	
Stru Steel <u>Plan Quantity</u> (LB) Section 501				8.00		1.50	
PSC Beams____ (LF) Section 507				8.00		1.50	
PSC Beams____ (LF) Section 507				8.00		1.50	
PSC Beams____ (LF) Section 507				8.00		1.50	
Stru Reinf <u>Plan Quantity</u> (LB) Section 511	3000.00	1.00	3.0000	8.00	24.00	1.50	4.50
Stru Reinf <u>Plan Quantity</u> (LB) Section 511				8.00		1.50	
Bar Reinf Steel (LB) Section 511				8.00		1.50	
Piling____inch (LF) Section 520				8.00		1.50	
Piling____inch (LF) Section 520				8.00		1.50	
Piling____inch (LF) Section 520				8.00		1.50	
Piling____inch (LF) Section 520				8.00		1.50	
Piling____inch (LF) Section 520				8.00		1.50	
Piling____inch (LF) Section 520				8.00		1.50	
Drilled Caisson,____ (LF) Section 524				8.00		1.50	
Drilled Caisson,____ (LF) Section 524				8.00		1.50	
Drilled Caisson,____ (LF) Section 524				8.00		1.50	
Pile Encasement,____(LF) Section 547				8.00		1.50	
Pile Encasement,____(LF) Section 547				8.00		1.50	

SUM QF DIESEL=	8976.70	SUM QF UNLEADED=	2423.60
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DIESEL PRICE ADJUSTMENT(\$)	\$30,825.09
UNLEADED PRICE ADJUSTMENT(\$)	\$7,447.24

ASPHALT CEMENT PRICE ADJUSTMENT FOR BITUMINOUS TACK COAT(Surface Treatment 125% MAX)

APPLICABLE TO CONTRACTS CONTAINING THE 413 SPEC. SECTION 413.5.01 ADJUSTMENTS ASPHALT PRICE ADJUSTMENT FOR BITUMINOUS TACK COAT

<http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx>

ENTER APL

ENTER APM

125.00%	INCREASE ADJUSTMENT
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Use this side for Asphalt Emulsion Only		
L.I.N.	TYPE	ASPHALT EMULSION (GALLONS)
TMT =		<input style="width: 100px;" type="text"/>
REMARKS:		

Use this side for Asphalt Cement Only		
L.I.N.	TYPE	TACK (GALLONS)
413-1000	PG 64-22*	650
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REMARKS:		

MONTHLY PRICE ADJUSTMENT(\$)	\$1,504.23
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ADJUSTMENT SUMMARY

FUEL PRICE ADJUSTMENT (*ENGLISH 125% MAX*)

DIESEL PRICE ADJUSTMENT(\$) \$30,825.09

UNLEADED PRICE ADJUSTMENT(\$) \$7,447.24

ASPHALT CEMENT PRICE ADJUSTMENT (*BITUMINOUS TACK COAT 125% MAX*) \$1,504.23

400 / 402 ASPHALT CEMENT PRICE ADJUSTMENT *125% MAX* \$67,350.00

ASPHALT CEMENT PRICE ADJUSTMENT FOR BITUMINOUS TACK COAT(*Surface Treatment 125% MAX*) \$1,504.23

REMARKS:

TOTAL ADJUSTMENTS	\$108,630.79
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RIGHT OF WAY COST ESTIMATE

September 15, 2010

F-0780-01

Jimmy Carter Blvd/SR140 @ I-85 DDI

Parcel #	Parcel Number	Current Ownership	Class Code	H&B	Land Value (p/ac)	Req. ROW (Acres)	Req. ROW (SF)	Actual Acquired ROW	Value of ROW	Perm Esmt (Acres)	Perm Esmt (SF)	Actual Acq. Perm Esmt	Value of Perm Esmt	Temp Esmt (Acres)	Temp Esmt (SF)	Actual Acq. Temp Esmt	Value of Temp Esmt	Displacements				Property & Displacement Costs
																		Improvement Costs	Relocation Cost	Type P/C/CTC	Other Damages	
1	6206 020	Zeshaan Enterprises Inc	C2	A	\$ 750,000.00	0.049	2154.00	2154.00	\$ 37,091.88	0.000	0.00	0.00	\$ -	0.067	2919.00	2919.00	\$ 15,091.23	\$ 7,500.00	\$ -	0	\$ -	\$ 69,683.11
2	6216 016	OFS Brighthouse Solutions Inc	M2	A	\$ 750,000.00	0.000	0.00	0.00	\$ -	0.000	0.00	0.00	\$ -	0.262	11426.00	11426.00	\$ 69,072.42	\$ -	\$ -	0	\$ -	\$ 69,072.42
3	6216 025	Gwinnett County	M1	A	\$ 750,000.00	0.000	0.00	0.00	\$ -	0.000	0.00	0.00	\$ -	0.000	0.00	0.00	\$ -	\$ -	\$ -	0	\$ -	\$ -
4	6216 054	Pappas Restaurant Inc	C2	A	\$ 750,000.00	0.000	0.00	0.00	\$ -	0.000	0.00	0.00	\$ -	0.020	861.00	861.00	\$ 4,451.37	\$ 5,000.00	\$ -	0	\$ -	\$ 9,451.37
5	6195 002	Preferred Real Estate Equities	C2	A	\$ 750,000.00	0.029	1274.00	1274.00	\$ 21,938.28	0.000	0.00	0.00	\$ -	0.053	2319.00	2319.00	\$ 11,980.23	\$ 15,000.00	\$ -	0	\$ -	\$ 48,927.51
6	6195 003	Gwinnett County	C1	A	\$ 750,000.00	0.000	0.00	0.00	\$ -	0.000	0.00	0.00	\$ -	0.000	0.00	0.00	\$ -	\$ -	\$ -	0	\$ -	\$ -
7	6195 097	Bradmit Properties Inc	C2	A	\$ 750,000.00	0.019	814.00	814.00	\$ 14,017.08	0.000	0.00	0.00	\$ -	0.013	552.00	552.00	\$ 2,853.84	\$ 2,500.00	\$ -	0	\$ -	\$ 19,370.92
8	Totals					0.10	4242.00	4242.00	73947.24	0.00	0.00	0.00	0.00	0.41	18077.00	18077.00	93458.09	30000.00	0.00	0	\$ 196,505.33	

SUMMARY

Type	Description	Land Value (p/ac)	and Value (p/SF)	Req. ROW (Acres)	Req. ROW (SF)	Actual Acquired ROW	Value of ROW	Perm Esmt (Acres)	Perm Esmt (SF)	Actual Acq. Perm Esmt	Value of Perm Esmt	Temp Esmt (Acres)	Temp Esmt (SF)	Actual Acq. Temp Esmt	Value of Temp Esmt	Improvement Costs	Relocation Cost	Type P/C/CTC	Other Damages	Property & Displacement Costs
A	Heavy Commercial	750,000.00	\$ 17.22	0.10	4242.00	4242.00	73047.24	0.00	0.00	0.00	0.00	0.41	18077.00	18077.00	93458.09	30000.00	0.00	4	0	196505.33

Standard GDOT Cost Estimate			
Net Cost of Right-of-Way and Easements		\$	196,505.33
Scheduling Contingency	55%	\$	108,077.93
Admin./Court Costs	60%	\$	182,749.96
Total Cost		\$	487,333.22

	Total Damages	Total Parcels
Proximity P	\$ -	0
Consequential C	\$ -	0
Cost to Cure CTC	\$ -	0
Project duration (years)	3.00	

Preliminary Right of Way Cost Estimate

Date: September 15, 2010
 Project: F-0780-01 P.I. Number N/A
 Existing/Required R/W: Varies / Varies No. Parcels 5
 Project Termini: Jimmy Carter Blvd @ Crescent Dr north of I-85 to Jimmy Carter Blvd @ Oakbrook
 Parkway to the south of I-85
 Project Description: Jimmy Carter Blvd/SR140 @ I-85 DDI

Transportation
 Received

SEP 24 2010

Fee Simple:
 Heavy Commercial
 4,242 sf @ \$ 17.22 /sf = \$ 73,047
 \$ 73,047
 By: RA Program Delivery

Permanent Construction Easement:
 Heavy Commercial
 0 sf @ \$ 8.61 /sf = \$ 0
 \$ 0
TOTAL \$ 0

Temporary Construction Easement: (10% of fee simple per year x 3 years)
 Heavy Commercial
 18,077 sf @ \$ 5.17 /sf = \$ 93,458
 \$ 93,458

Improvements:
 0 Residential = \$ 0
 4 Commercial = \$ 30,000
TOTAL \$ 30,000

Relocation:
 0 Residential = \$ 0
 0 Commercial = \$ 0
TOTAL \$ 0

Damages:
 Proximity - 0 Parcels \$ 0
 Consequential - 0 Parcels \$ 0
 Cost to Cure - 0 Parcels \$ 0
TOTAL \$ 0

SUB-TOTAL \$ 196,505

Net Cost \$ 196,505
 Scheduling Contingency 55% \$ 108,078
 Adm/Court Cost 60% \$ 182,750
 \$ 487,333

Total Cost

\$ 500,000

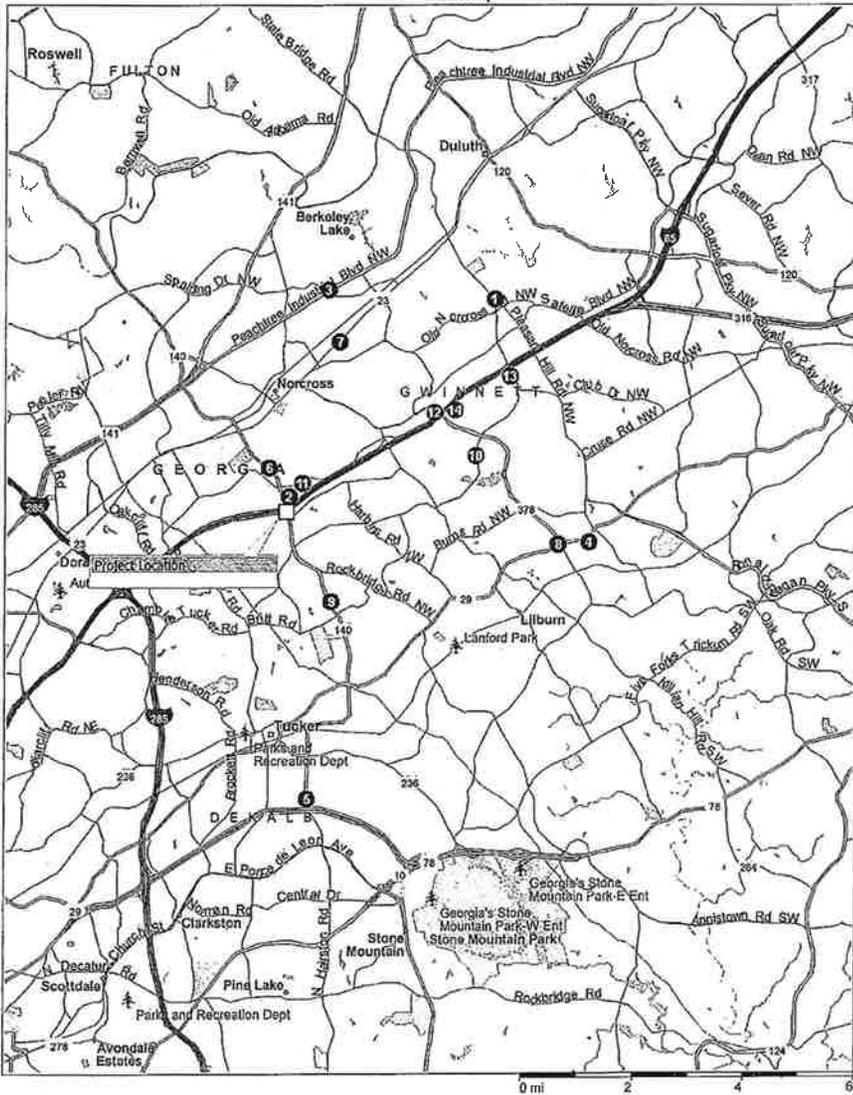
Prepared By: E. D. Dixon III
 Emory D. Dixon III, Cert. No. 2403
 Moreland Altobelli Associates, Inc.
 Reviewed / Approved: _____
 Howard P. Copeland
 R/W Administrator

Note: Accuracy of estimate is the sole responsibility of the Preparer.
 Note: The Market Appreciation (40%) is not included in this Preliminary Cost Estimate.

Remarks: Parcels 3 & 6 are both currently owned by Gwinnett County. The required right of way for these 2 parcels has not been included in this cost estimate under the assumption that the property will be donated by the county.

Remarks: Per plan notation, parking and site modifications, cross access adjustments, and RW acquisition for PINs 6216 027, 6216 035, and 6216 054 are to occur prior to project F-0780-01 construction and are not included in this estimate.

Location Map



RIGHT OF WAY COST ESTIMATE
 F-0780-01
 Jimmy Carter Blvd/SR140 @ I-85 DDI

Comparable Sale Analysis

The appraiser researched comparable land sales in the subject's marketing area.

The parcels affected by the project are primarily zoned for commercial use and are located near a heavy traffic interstate intersection. Included in the workfile is a representative sample of comparably zoned properties, similar to the subject parcels in terms of size, utility, and appeal.

COMMERCIAL LAND SALES						
	ADDRESS	DATE	SALES PRICE	ACREAGE	PRICE/AC	PRICE/SF
1	Pleasant Hill Rd @ Farlie Dr	Feb-07	\$650,000	0.648	\$1,003,086	\$23.03
2	6024 Goshen Springs Rd	Dec-08	\$550,000	0.670	\$820,896	\$18.85
3	4875 Peachtree Industrial Blvd	Jun-06	\$900,000	0.900	\$1,000,000	\$22.96
4	Lawrenceville Hwy	May-07	\$850,000	1.341	\$633,855	\$14.55
5	Mountain Industrial Blvd	Aug-06	\$550,000	1.370	\$401,460	\$9.22
6	Jimmy Carter Blvd	Dec-06	\$625,000	1.395	\$448,029	\$10.29
7	5046 Buford Hwy	Oct-08	\$1,000,000	1.980	\$510,204	\$11.71
8	L'ville Hwy @ Beaver Ruin Rd	Nov-06	\$2,732,000	2.105	\$1,297,862	\$29.79
9	Jimmy Carter Blvd	Feb-07	\$760,000	2.851	\$266,573	\$6.12
10	4305 Steve Reynolds Blvd	May-07	\$1,860,000	4.700	\$395,745	\$9.09
11	5900 Brook Hollow Pkwy	Dec-09	\$2,000,000	9.000	\$222,222	\$5.10
				MEAN	\$636,357	\$14.61
				MEDIAN	\$510,204	\$11.71
COMMERCIAL LAND LISTINGS						
	ADDRESS		LIST PRICE	ACREAGE	PRICE/AC	PRICE/SF
12	I-85 @ Beaver Ruin Rd		\$1,000,000	1.180	\$847,458	\$19.45
13	Shackleford Rd @ Steve Reynolds		\$5,000,000	5.000	\$1,000,000	\$22.96
14	I-85 @ Beaver Ruin Rd		\$3,750,000	10.000	\$375,000	\$8.61
				MEAN	\$740,819	\$17.01
				MEDIAN	\$847,458	\$19.45



CONCEPT-LEVEL UTILITY ESTIMATE

TIP #: ARC-GW345A

UTILITIES RECEIVED	PROVIDED COST
AGL	\$0
GA POWER TRANS	\$250,000

UTILITIES ESTIMATED	ESTIMATED COST
GA POWER DIST	\$50,000
GWINNETT DWR	\$100,000
AT&T	\$50,000
COMCAST	\$50,000
GRAND TOTAL	\$500,000

5 POLES AT \$10,000 PER POLE

Rushing, Mike

From: Jonathan Todd [jtodd@aglresources.com]
Sent: Monday, September 13, 2010 4:58 PM
To: Rushing, Mike
Subject: Jimmy Carter Blvd/SR140 @ I-85 DDI, Gwinnett #F-0780-01
Attachments: AGL-GAS_F-0780-01.dgn

Hi Mike,

I have attached a copy of our gas file with the existing facilities. We are approximately 50 feet off of the west side of the bridge buried under the interstate. I do not believe we will have any conflicts from the drawings that I have received. Please let me know if you have any questions or concerns.

Jonathan R. Todd

Design Engineer
Engineering Department

10 Peachtree Place, 11th floor
Atlanta, GA 30309

404-584-3186 office
404-694-1220 mobile
404-584-4187 fax
jtodd@aglresources.com



Rushing, Mike

Subject: FW: Secure FTP Site Created - Jimmy Carter Blvd/SR140 @ I-85 DDI, Gwinnett #F-0780-01
Attachments: UTLE from SUE 12-4-2009_GPCTAN01.pdf

From: Everitt, Dan E [mailto:DEEVERIT@southernco.com]
Sent: Monday, September 27, 2010 9:56 AM
To: Rushing, Mike
Cc: Via, Donna T.; St. Clair, Don; Wilder, Gena M.; Stice, Joshua Otho
Subject: FW: Secure FTP Site Created - Jimmy Carter Blvd/SR140 @ I-85 DDI, Gwinnett #F-0780-01

Mike,

We have several transmission poles that may need to be relocated on our NORCROSS - PONCE DE LEON 115 KV line. There are (2) structures that appear to be in the new sidewalk and will have to be relocated. The cost of the relocations is dependent on the need for additional right of way and any possible impacts to adjacent structures or other transmission facilities due to the relocation of these structures. At this time it is difficult to provide an accurate "ballpark estimate" without doing further engineering work. If we only have to relocate the (2) structures I would guess it would cost around \$250,000. This "ballpark" estimate does not include any cost for additional right of way or cost for any additional impacts to other facilities, both of which could be quite expensive.

Thanks ...

Dan Everitt

Georgia Power - Project Manager

Office (404) 506-2889

Cell (770) 533-3136

From: Mike.Rushing@kimley-horn.com [mailto:Mike.Rushing@kimley-horn.com]
Sent: Friday, September 17, 2010 2:19 PM
To: 'dw7820@att.com'; 'michael.mayes@level3.com'; 'rpatton@towercloud.com'; 'doug_abrams@cable.comcast.com'; 'X2STCLAI@southernco.com'; 'jdavis@southernco.com'
Cc: lewis.cooksey@gwinnettcountry.com; Kevin.Ergle@kimley-horn.com
Subject: RE: Secure FTP Site Created - Jimmy Carter Blvd/SR140 @ I-85 DDI, Gwinnett #F-0780-01

Utility representatives

You have been in receipt of this information for over a month and we have not received follow-up information from your company. We need responses for conceptual utility relocation estimates. The FTP has CADD files for your use, based on our most current design information. We can not submit a Concept Report for GDOT review without your assistance on utility relocation estimates.

Please respond with conceptual opinions on "no conflicts" or relocation costs, as appropriate.

Please contact me with any questions.

Thank you.

Mike Rushing, P.E. (GA/NC/SC/TX)

Bridge Inventory Data Listing



Parameters: Bridge Serial Num

Structure ID:135-0035-0

Gwinnett

SUFF. RATING: 50.28

Location & Geography

Structure ID: 135-0035-0
 200 Bdrge Information: 06
 *6A Feature Int: I-85
 *6B Critical Bridge: 0
 *7A Route No Carried: SR00140
 *7B Facility Carried: JIMMY CARTER BLVD
 9 Location: 2 MI S OF NORCROSS
 2 Dot District: 1
 207 Year Photo: 2010
 *91 Inspection Frequency: 24 Date: 03/19/2010
 92A Fract Crit Insp Freq: 0 Date: 02/01/1901
 92B Underwater Insp Freq: 0 Date: 02/01/1901
 92C Other Spc. Insp Freq: 0 Date: 02/01/1901
 * 4 Place Code: 00000
 *5 Inventory Route(O/U): 1
 Type: 3
 Designation: 1
 Number: 00140
 Direction: 0
 *16 Latitude: 33 54.7265 HMMS Prefix:SR
 *17 Longitude: 84 -12.467 HMMS Suffix:140 MP:5.63
 98 Border Bridge: 000%Shared:00
 99 ID Number: 0000000000000000
 *100 STRAHNET: 0
 12 Base Highway Network: 1
 13A LRS Inventory Route: 1351012400
 13B Sub Inventory Route: 0
 101 pallel Structure: N
 *102 Direction of Traffic: 2
 *264 Road Inventory Mile Post: 005.65
 *208 Inspection Area: 1 Initials: EFP
 Engineer's Initials: sgm
 * Location ID No: 135-00140D-005.63E

*104 Highway System: 0
 *26 Functional Classification: 14
 *204 Federal Route Type: F No: 01651
 105 Federal Lands Highway: 0
 *110 Truck Route: 0
 2006 School Bus Route: 1
 217 Benchmark Elevation: 0000.00
 218 Datum: 0
 *19 Bypass Length: 03
 *20 Toll: 3
 *21 Maintanance: 01
 *22 Owner: 01
 *31 Design Load: 5
 37 Historical Significance: 5
 205 Congressional District: 07
 27 Year Constructed: 1973
 106 Year Reconstructed: 1983
 33 Bridge Medium: 0
 34 Skew: 00
 35 Structure Flared: 0
 38 Navigation Control: N
 213 Special Steel Design: 0
 267 Type of Paint: 1
 *42 Type of Service On: 5
 Type of Service Under: 1
 214 Movable Bridge: 0
 203 Type Bridge: 0
 259 Pile Encasement 3
 *43 Structure Type Main: 4 02
 45 No.Spans Main: 002
 44 Structure Type Appr: 0 00
 46 No Spans Appr: 0000
 226 Bridge Curve Horz 0 Vert: 0
 111 pier Protection 0
 107 Deck Structure Type: 1
 108 Wearing Structure Type: 1
 Membrane Type: 0
 Deck Protection: 8

Signs & Attachments

225 Expansion Joint Type: 03
 242 Deck Drains: 0
 243 Parapet Location: 3
 Height: 2
 Width: 1
 238 Curb Height: 0
 Curb Material: 1
 239 Handrail 7 7
 *240 Medium Barrier Rail: 0
 241 Bridge Median Height: 0
 * Bridge Median Width: 0
 230 Guardrail Loc. Dir. Rear: 6
 Frwd: 6
 Oppo. Dir. Rear: 0
 Oppo. Frwd: 0
 244 Aproach Slab 3
 224 Retaining Wall: 1
 233Posted Speed Limit: 45
 236 Warning Sign: 0.00
 234 Delineator: 0.00
 235 Hazzard Boards: 0
 237 Utilities Gas: 00
 Water: 22
 Electric: 23
 Telephone: 23
 Sewer: 00
 247 Lighting Street: 0
 Navigation: 0
 Aerial: 0
 *248 County Continuity No.: 00

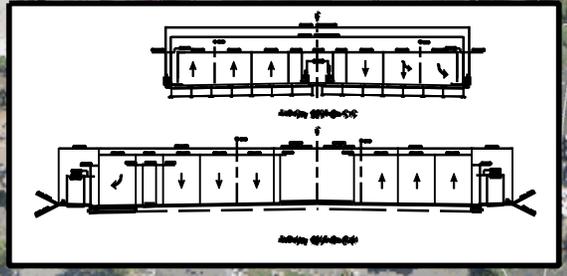
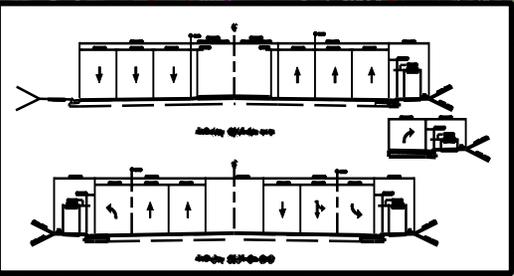
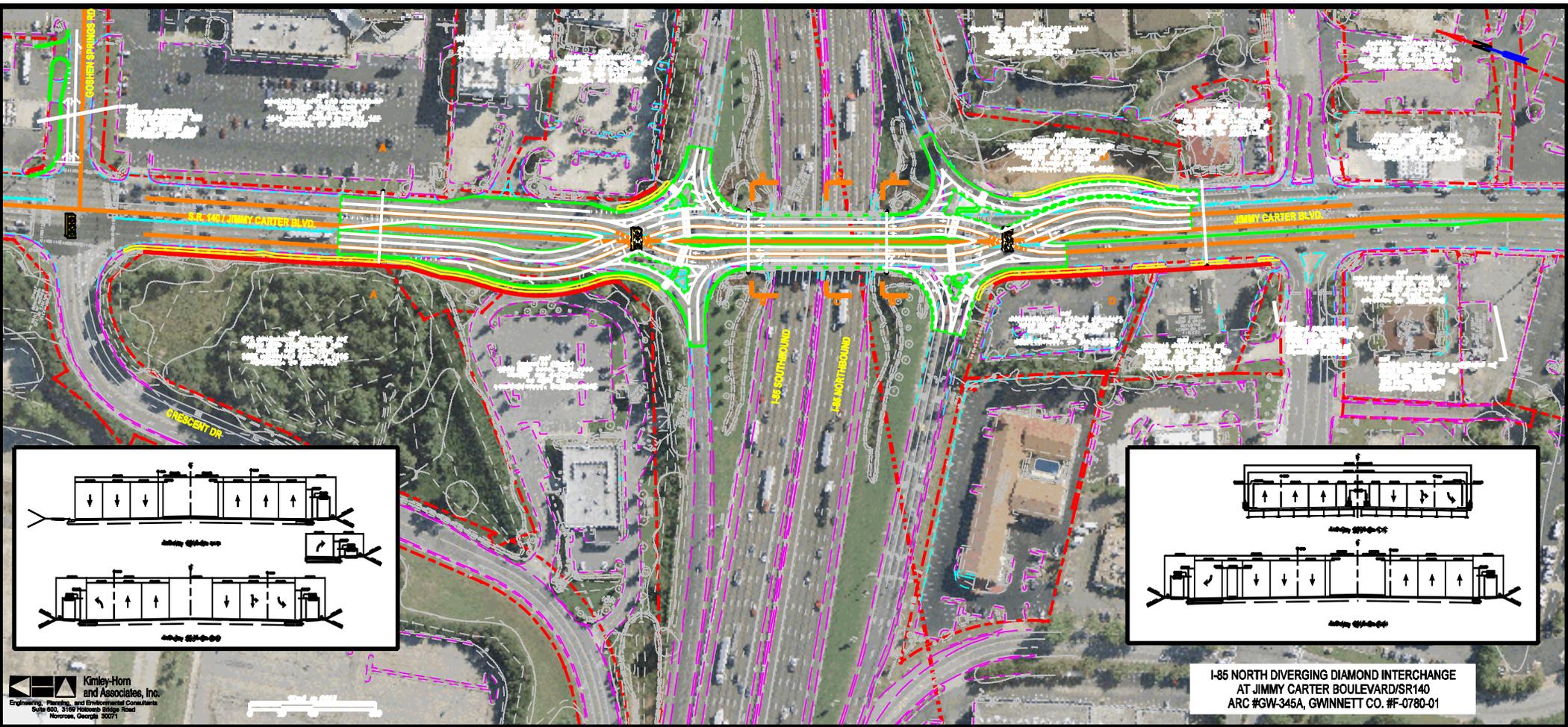
Bridge Inventory Data Listing



Parameters: Bridge Serial Num

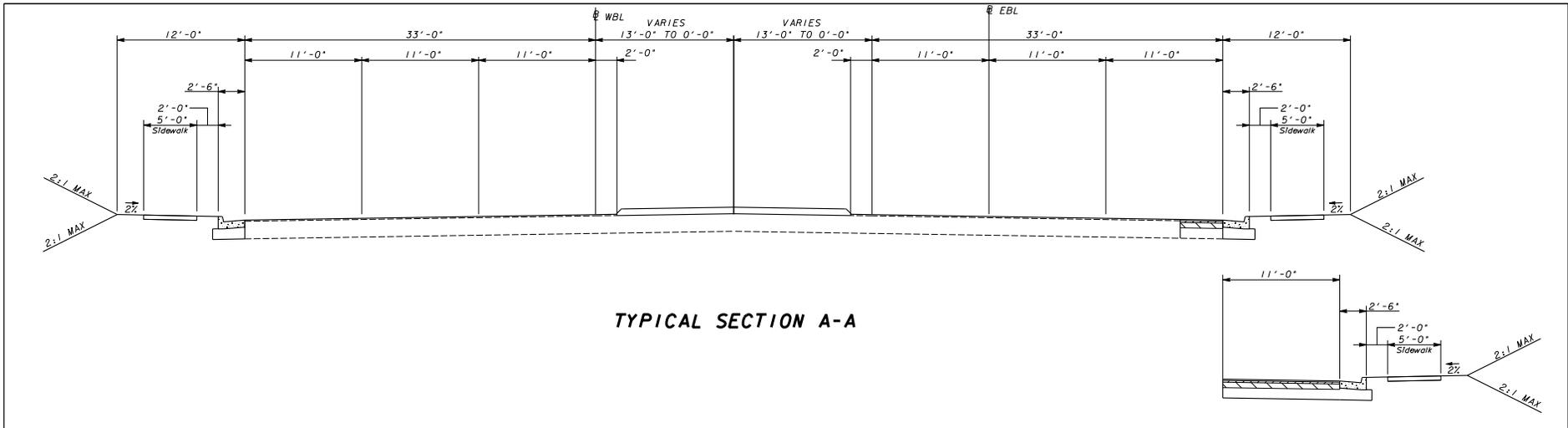
Structure ID:135-0035-0

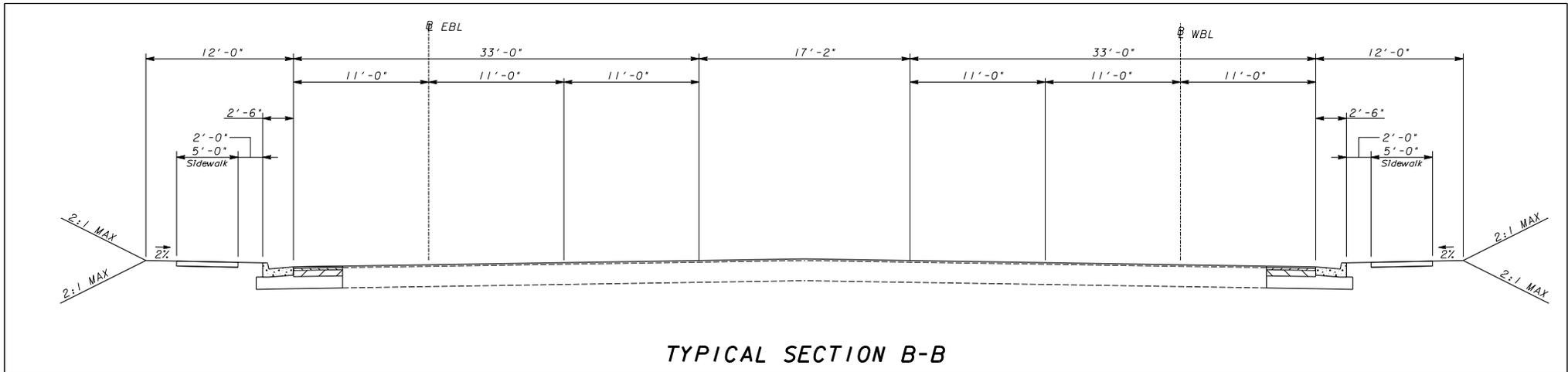
Programming Data		Measurements:				
201 Project No:	I-85-2 (46) 99 CT.1	*29ADT	026850	Year:2007	65 Inventory Rating Method:	1
202 Plans Available:	4	109%Trucks:	0		63 Operating Rating Method:	1
249 Prop Proj No:	00000000000000000000000000000000	* 28 Lanes On:	07	Under:12	66 Inventory Type:	2 Rating: 23
250 Approval Status:	0000	210 No. Tracks On:	00	Under:00	64 Operating Type:	2 Rating: 23
251 PI Number:	0000000	* 48 Max. Span Length	0090		231 Calculated Loads:	
252 Contract Date:	02/01/1901	* 49 Structure Length:	175		H-Modified:	21 0
260 Seismic No:	00000	51 Br. Rwdy. Width	80.00		HS-Modified:	30 0
75 Type Work:	00 0	52 Deck Width:	90.50		Type 3:	30 0
94 Bridge Imp. Cost:	\$0	* 47 Tot. Horiz. Cl:	80		Type 3s2:	33 0
95 Roadway Imp. Cost:	0	50 Curb / Sidewalk Width	4.00 / 4.00		Timber:	31 0
96 Total Imp Cost:	0	32 Approach Rdwy. Width	074		Piggyback:	34 0
76 Imp Length:	000000	*229 Shoulder Width:			261 H Inventory Rating:	29
97 Imp Year:	0000	Rear Lt:	0.00	Type:1 Rt:2.00	262 H Operating Rating	48
114 Future ADT:	040275 Year:2027	Fwd. Lt:	0.00	Type:1 Rt:2.00	67 Structural Evaluation:	5
Hydraulic Data		Permanent Width:			58 Deck Condition:	6
215 Waterway Data:		Rear:	75.50	Type:1	59 Superstructure Condition:	7
High Water Elev:	0000.0 Year:1900		71.70	Type:2	* 227 Collision Damage:	0
Flood Elev:	0000.0 Freq:00	Intersection Rear:	1	Fwd: 1	60A Substructure Condition:	7
Avg Streambed Elev:	0000.0	36 Safety Features Br. Rail:	1		60B Scour Condition:	N
Drainage Area:	00000	Transition:	2		60C Underwater Condition	N
Area of Opening:	000000	App. G. Rail:	2		71 Waterway Adequacy:	N
113 Scour Critical	N	App. Rail End:	2		61 Channel Protection Cond.:	N
216 Water Depth:	00.0 Br.Height:00.0	53 Minimum Cl. Over:	99' 99"		68 Deck Geometry:	2
222 Slope Protection:	4	Under:			69 UnderClr. Horz/Vert:	2
221 Slope Protection	0 Fwd:0	*228 Minimum Vertical Cl			72 Appr. Alignment:	8
219 Fender System	0	Act. Odm Dir.:	99' 99"		62 Culvert:	N
220 Dolphin:	0	Oppo. Dir:	99' 99"		Posting Data	
223 Current Cover:	000	Posted Odm. Dir:	00' 00"		70 Bridge Posting Required	5
Type:	0	Oppo. Dir:	00' 00"		41 Struct Open, Posted, CL:	A
No. Barrels:	0	55 Lateral Undercl. Rt:	H 4 4		* 103 Temporary Structure:	0
* Width:	0.00 Height:0.00	56 Lateral Undercl. Lt:	2.00		232 Posted Loads	
* Length:	0 Apron:0	*10 Max Min Vert Cl:	99' 99" Dir:0		H-Modified:	00
265 U/W Insp. Area	0 Diver:ZZZ	39 Nav Vert Cl:	000 Horiz:0000		HS-Modified:	00
Location ID No:	135-00140D-005.63E	116 Nav Vert Cl Closed:	000		Type 3:	00
		245 Deck Thickness Main Deck Thick Approach:	7.00		Type 3s2:	00
		246 Overlay Thickness:	0.00		Timber:	00
		212 Year Last Painted:	Sup:1983Sub:0000		Piggyback	00
					253 Notification Date:	02/01/1901
					258 Fed Notify Date:	2/1/1901 12:00:00AM



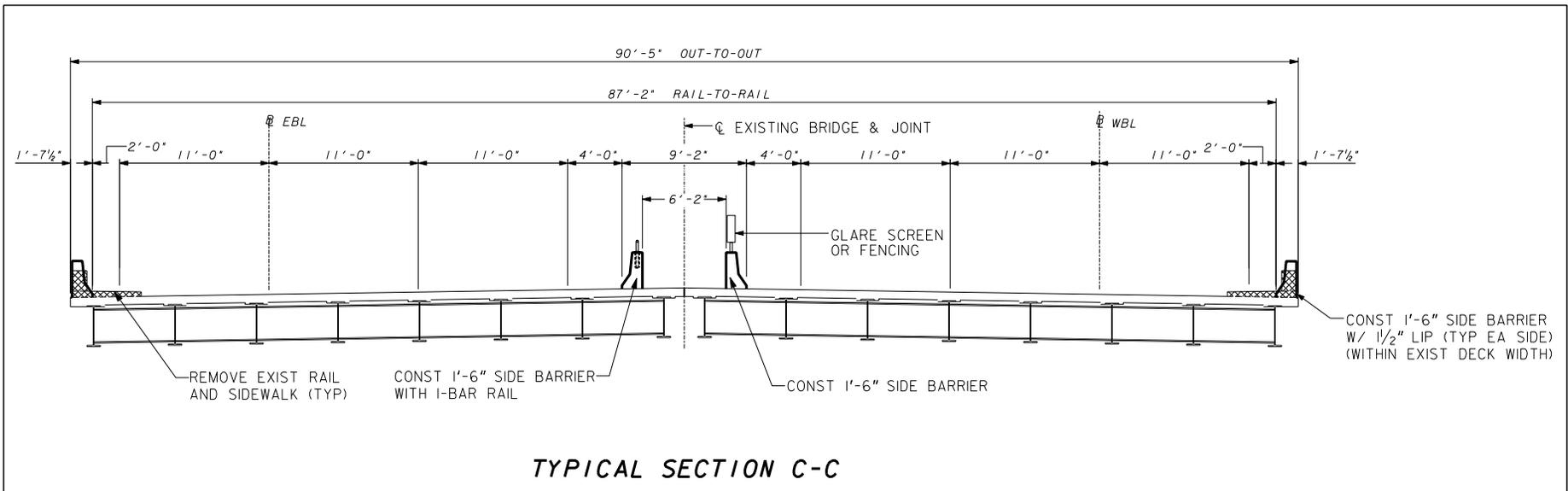
I-85 NORTH DIVERGING DIAMOND INTERCHANGE
 AT JIMMY CARTER BOULEVARD/SR140
 ARC #GW-345A, GWINNETT CO. #F-0780-01


**Kimley-Horn
 and Associates, Inc.**
 Engineering, Planning, and Environmental Consultants
 Suite 600, 3150 Holcomb Bridge Road
 Norcross, Georgia 30071

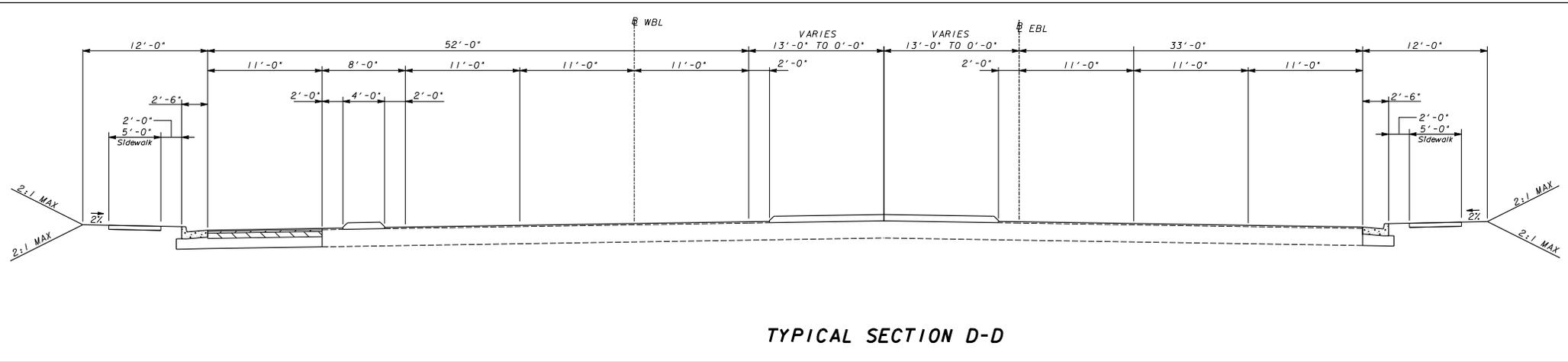




TYPICAL SECTION B-B



...\\CADD\concept\concept typs.dgn 1/24/2011 6:29:54 PM



TYPICAL SECTION D-D

Rushing, Mike

From: Lewis.Cooksey@gwinnettcountry.com
Sent: Thursday, November 04, 2010 8:04 AM
To: Rushing, Mike
Subject: FW: PI 0010111 - Gwinnett County - JCB at I-85 DDI Need/Purpose Statement
Attachments: need and purpose - PI 0010111 Gwinnett County - JCB at I85 DDI with comments.pdf

Lewis Cooksey, P.E.
Engineering Coordinator
Gwinnett County
Transportation
770-822-7428 (office)
770-815-8597 (cell)

From: Hasty, Charles A. (Chuck) [mailto:chasty@dot.ga.gov]
Sent: Thursday, November 04, 2010 7:14 AM
To: Cooksey, Lewis
Subject: FW: PI 0010111 - Gwinnett County - JCB at I-85 DDI Need/Purpose Statement

Don't remember if I sent this to you last week.

From: Heath, Andrew
Sent: Wednesday, October 27, 2010 4:41 PM
To: Hasty, Charles A. (Chuck)
Cc: McQueen, Thomas; Fowler, Matthew
Subject: RE: PI 0010111 - Gwinnett County - JCB at I-85 DDI Need/Purpose Statement

Chuck,
Looks good.

Our previous comments were appropriately addressed. I have just have a few extra very minor comments in the attached document (mostly wording) to be addressed but Planning does not need to conduct another review. Let me know if you have questions. Thanks!

Andrew Heath, E.I.T.
GDOT Office of Planning
600 W. Peachtree St. NW, 5th Floor
Atlanta, GA 30308
404-631-1750

From: Hasty, Charles A. (Chuck)
Sent: Wednesday, October 27, 2010 6:39 AM
To: Heath, Andrew
Cc: McQueen, Thomas; Fowler, Matthew
Subject: FW: PI 0010111 - Gwinnett County - JCB at I-85 DDI Need/Purpose Statement

Andrew:

The revised Statement of Project Purpose and Need is attached for your review/comment.

Need and Purpose Statement
Gwinnett County
I-85 North Diverging Diamond Interchange at Jimmy Carter Boulevard
P.I. No. 0010111

The purpose of the Diverging Diamond Interchange improvements at the I-85 interchange with SR 140/Jimmy Carter Blvd corridor is to:

1. Improve vehicular safety by reducing the number of conflict points at the signalized intersections of the I-85 ramp terminals and reducing the rate of occurrence and severity of vehicle crashes.
2. Reduce traffic congestion and accommodate the need for mobility, access, and goods movement on a critical facility.
3. Facilitate efficient operation of traffic entering and exiting I-85 by reducing the number of signal phases at each ramp terminal signal, resulting in an improvement in overall signal operation and efficiency.
4. Improve pedestrian safety by providing for a raised, channelized, and barrier-protected pedestrian walkway.

The need for the Diverging Diamond Interchange improvements at the I-85 interchange with SR 140/Jimmy Carter Blvd is based on:

1. Deficient levels-of-service (LOS) for vehicular traffic through the corridor.
2. Accident rates and injury rates that significantly exceed statewide averages for similar facilities.

Background

The proposed project is included in the currently-approved Envision6 Regional Transportation Plan, Volume II FY 2008-2013 Transportation Improvement Plan (TIP). The project is identified as GW-345A (I-85 North Diverging Diamond Interchange at Jimmy Carter Boulevard).

The proposed project is part of a partnership between the Gwinnett Village Community Improvement District (CID) and Gwinnett County to improve mobility within the CID service area. The CID's mission to improve quality of life and promote business development within the District is supported by the improvement of traffic operation and pedestrian safety at key locations within the village. This project is also a key element in Gwinnett County's transportation program - identified as a "critical link" in the County's 2030 Comprehensive Transportation Plan. This means its levels of congestion and delay exceed certain relative thresholds as compared to other facilities in the County. Furthermore, in a 2006 congestion report, the Atlanta Regional Commission ranked Jimmy Carter Boulevard/SR 140 as the 7th most heavily congested arterial roadway in the metro-Atlanta region. During the PM peak hour, the interchange operates at failing levels of service, causing more than 50 vehicle-hours of delay during each PM peak hour. The congestion currently lasts about 4 hours per day. Without improvements to the interchange, it is estimated to grow to more than 8 hours per day in 2030. As a result, the County has allocated funding to the improvement of this interchange through its SPLOST.

Traffic from Jimmy Carter Blvd entering I-85 is metered through an existing system of ramp meter signals. Based on data provided by GDOT, the ramp meters sense traffic volumes on I-85 and turn-on when volumes exceed certain thresholds. Generally, the southbound I-85 on-ramp is metered in the AM peaks and the northbound I-85 on-ramp is metered in the PM peaks. The operational characteristics of the ramp meters were obtained from GDOT, including existing timings, target output rates, and queue detection operations to "flush" the ramp. The target output rates of the meter timings were verified against the output rates of both existing and proposed models. In extreme queue conditions, the ramp meters use queue detection to turn off the ramp meters for a pre-set amount of time, in order to empty the queue. The project proposes no changes to existing ramp configurations and no changes to ramp meter signal equipment.

Early project coordination between the CID, Gwinnett County, and the Georgia Department of Transportation (GDOT) resulted in concurrence among the three parties that this project is intended to serve as a short-term operational improvement at the Jimmy Carter Boulevard/I-85 interchange area. As discussed in the below proposed project description, the project is proposed to tie-into the existing Jimmy Carter Boulevard bridge and leverage the remaining service life of the structure until the future bridge replacement project (GW-355, PI No. 0010111) is fully funded and developed for construction. Based on consideration of this, a 10-year design horizon was deemed more appropriate than the typical 20-year horizon.

Description of Proposed Project

The proposed design improvements for Jimmy Carter Boulevard include constructing a Diverging Diamond Interchange (DDI) improvement. The proposed improvements will “cross-over” the traffic directions in advance of the Jimmy Carter Blvd bridge to obtain free-flow operation for the heavy left-turn volumes accessing the I-85 entrance ramps. By providing free-flow left-turns, the need for storage lanes for left-turns (such as at conventional signals) is eliminated. Thus, the same amount of left-turn volume can be accommodated with fewer lanes along the corridor. The proposed improvements will maintain two through-lanes and one dedicated left-turn lane in each direction across the Jimmy Carter Blvd bridge. The improvements will also maintain one dedicated right-turn lane in advance of the I-85 ramp intersections in each direction to provide yield-controlled access to the I-85 entrance ramps.

All improvements will tie to the width of the existing Jimmy Carter Blvd bridge. While the existing bridge sufficiency rating is just under 50, the structural component ratings of the bridge are all 5 or above. Thus, the bridge rating is largely driven by functional deficiencies and still has significant structural service life. Constructing the proposed improvements will reduce crash frequency and improve efficiency while requiring minimal modification to the existing bridge. This is a cost-effective solution that maximizes the remaining service life of the bridge asset.

Existing Travel Conditions

The existing conditions at/between the ramp terminal intersections are as follows:

Jimmy Carter Boulevard (SR 140) – East of I-85 Interchange

Two (2) 11-foot through lanes (WB)
Three (3) 11-foot through lanes (EB)
Two (2) 11-foot left turn lanes (WB)
One (1) 4-foot center median w/2-foot raised conc island
One (1) 6-foot through lane/right-turn lane median w/2-foot raised conc island (WB)
One (1) 12-foot right turn lane (WB)
2'-6" curb and gutter
5'-0" sidewalk (WB side only)

Jimmy Carter Boulevard (SR 140) Bridge over I-85

One (1) 10-foot outside through lane (WB/EB)
One (1) 11-foot inside through lane (WB/EB)
Two (2) 11-foot left turn lanes (WB)
One (1) 11-foot left-turn lane (EB)
2'-0" gutter offset and 6" curb
4'-0" sidewalk

Jimmy Carter Boulevard (SR 140) – West of I-85 Interchange

Three (3) 11-foot through lanes (WB)
Three (3) 11-foot through lanes (EB)
One variable width raised center median
One (1) 11-foot right turn lane (EB)
2'-6" curb and gutter

The current posted speed limits along Jimmy Carter Boulevard are 45 miles per hour (MPH) west of the I-85 interchange and 40 MPH east of the interchange.

Logical Termini and Projected Traffic Conditions

Logical Termini are defined as rational endpoints for a transportation improvement and rational endpoints for a review of the environmental impacts. In order to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, the action evaluated shall:

- (1) connect logical termini and be of sufficient length to address environmental matters on a broad scope;
- (2) have independent utility or independent significance, i.e. be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and
- (3) not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

By improving SR 140/Jimmy Carter Blvd between Goshen Springs Road and Live Oak Parkway, this project encompasses a large enough portion of SR 140 to be able to address the environmental impacts in sufficient scope. This project addresses the section of SR 140 that has identified operational deficiencies and needs and is of sufficient length to improve operation of the signalized intersections, while also improving pedestrian mobility and safety at the intersections.

The project has independent utility because it would meet the defined need and purpose even if no additional transportation improvements were to be implemented within the area. The traffic analyses clearly define the operational needs of this corridor. Tables 1 and 2 demonstrate that the proposed action would meet those needs at the target locations and would preserve existing levels of operation at the extreme limits of the project.

Levels of Service (LOS)

A significant portion of the delay and operational deficiency is a result of heavy left-turn volumes and extended queues for movements turning onto and off of the I-85 ramps, the high number of signal phases required for the diamond interchange, and the close proximity of the two intersections. The existing LOS for the ramp terminal intersections and the reduction in delay resulting from construction of the DDI improvements are illustrated in Tables 1, 2, and 3.

Intersection	AM Peak Hour	PM Peak Hour
	No-Build	No-Build
Brook Hollow Pkwy	C (27.5)	E (57.9)
Crescent Dr/Goshen Springs Rd	B (16.8)	C (26.8)
I-85 SB Ramps	E (60.8)	D (36.3)
I-85 NB Ramps	C (34.0)	D (55.0)
Live Oak Pkwy	C (30.2)	D (42.8)

Table 2				
Base Year 2012				
Overall Intersection Delay (sec/veh)				
Intersection	AM Peak Hour		PM Peak Hour	
	No-Build	Build	No-Build	Build
Brook Hollow Pkwy	C (28.0)	C (25.8)	E (67.5)	E (54.3)
Crescent Dr/Goshen Springs Rd	C (23.8)	B (17.4)	C (33.1)	C (24.6)
I-85 SB Ramps	E (65.4)	C (27.4)	D (38.3)	C (23.7)
I-85 NB Ramps	D (37.2)	C (21.3)	E (61.4)	C (29.1)
Live Oak Pkwy	C (31.0)	C (32.4)	D (45.2)	D (39.6)

Table 3				
Design Year 2022				
Overall Intersection Delay (sec/veh)				
Intersection	AM Peak Hour		PM Peak Hour	
	No-Build	Build	No-Build	Build
Brook Hollow Pkwy	D (49.8)	C (31.3)	F (81.9)	E (74.1)
Crescent Dr/Goshen Springs Rd	D (50.0)	B (19.5)	D (53.2)	D (40.7)
I-85 SB Ramps	E (73.3)	C (30.1)	D (50.8)	D (44.8)
I-85 NB Ramps	E (68.5)	C (28.3)	E (79.4)	D (52.9)
Live Oak Pkwy	D (44.8)	D (39.0)	E (71.7)	E (67.6)

Note that significant operational improvements are recognized at the targeted ramp terminal intersection locations. LOS is improved from D and E levels in the 2012 No-Build scenario to C levels in the 2012 Build scenario during both peaks. The Build condition improves LOS from E levels to C levels in the AM peak. The Build condition improves LOS from D and E levels to D levels in the PM peak.

Table 4 provides a listing of projected traffic volumes on Jimmy Carter Boulevard for the existing, open-to-traffic, and design years. It should be noted that projected traffic volumes are anticipated to be identical between the build and no-build scenarios.

Table 4 Peak Hour and Average Daily Traffic (ADT) Volumes Jimmy Carter Boulevard			
Year	AM Peak	PM Peak	ADT
Existing 2010	3,675	3,900	59,800
Base 2012	3,775	4,000	61,500
Design 2022	4,425	4,650	70,600

Based on the 10-year design traffic period, a benefit/cost ratio of 6.5 is achieved through a reduction in travel times through the project limits. This calculation includes the impacts on commercial time savings based on 5% truck traffic.

The preferred alternative is a stand-alone project that ties into the existing capacity on SR 140/Jimmy Carter Blvd east of Goshen Springs Road and west of Live Oak Parkway. Tables 2 and 3 also demonstrate that by terminating the improvements at Goshen Springs Road and Live Oak Parkway, the proposed action does not require additional transportation improvements to be made to maintain traffic operations at “no-build” conditions.

These improvements would not restrict the implementation of the long range transportation plan for this region. The proposed project is considered a short-term improvement to provide operational benefits to the corridor until the future reconstruction of the SR 140/Jimmy Carter Blvd interchange is undertaken. As such, the project will be developed in a way that considers and accommodates the future project to the extent reasonable.

Projects in the Area

A Livable Centers Initiative (LCI) Study has been prepared for the area along Jimmy Carter Boulevard from Buford Highway to Singleton Road and resulted in a five-year transportation plan with specific needed projects. Two additional projects along the boulevard – safety improvements at North Norcross Tucker Road and pedestrian safety improvements at Singleton Road/South Norcross Tucker Road – are currently in project development.

As previously noted, a future project to re-construct the interchange at SR 140/Jimmy Carter Blvd and I-85 is programmed in the TIP (GW-355, PI No. 0010111).

Land Use

Because of the study area’s proximity to an urban interstate interchange, the land use in this project area is predominantly commercial/industrial and consists of retail and business office/distribution complexes. The land use adjacent to the proposed improvements includes a large retail and office complex in the northeast quadrant (Carter Oaks) and a large retail complex in the northwest quadrant (Global Mall). In addition to these larger complexes, there are a number of smaller retailers including Pappadeaux’s restaurant (northwest quadrant) and loan/title retailers (southeast quadrant). The study area also contains one governmental building for a Gwinnett County Precinct Station that is located in the southwest quadrant.

The southwest quadrant also contains a largely vacant major manufacturing and distribution facility (OFS) that has been identified as a major re-development opportunity. This area is identified as a Regional Mixed Use center in the Gwinnett County 2030 Unified Plan.

No residential or commercial relocations are anticipated to construct this proposed improvement.

Demographic Information

The proposed project is located in four census tracts (504.17, 504.19, 504.20 and 504.21) and one census block group (504.17-01, 504.19-01, 504.20-01 and 504.21-01) within each of these tracts. Table 5 (below) provides select demographic data for the census block groups as well as for the Census Tracts and Gwinnett County for the purposes of comparison.

<p align="center">Table 5 Project Area Demographic Data <i>2000 U.S. Census</i></p>								
	Total Population	% Minority	Median Household Income	1999 Family Income for Household (percent of total households)				
				\$0 to 25,000	\$25,000 to 50,000	\$50,000 to 75,000	\$75,000 to 100,000	\$100,000 or more
Gwinnett County	588,448	33%	\$60,537	9.5%	23.0%	25.4%	19.0%	23.1%
Tract 504.17	6,086	81%	\$40,889	19.1%	39.7%	23.8%	12.0%	5.4%
504.17-01	851	58%	\$45,096	12.8%	43.3%	31.1%	5.0%	7.8%
Tract 504.19	6,677	65%	\$48,333	15.0%	28.2%	27.2%	19.1%	10.5%
504.19-01	2,233	81%	\$39,201	27.9%	46.3%	6.6%	13.1%	6.1%
Tract 504.20	9,404	76%	\$44,338	15.3%	39.9%	26.6%	10.0%	8.2%
504.20-01	2,128	54%	\$49,179	4.3%	42.5%	26.6%	12.2%	14.4%
Tract 504.21	7,203	70%	\$44,588	23.1%	35.3%	26.2%	7.9%	7.5%
504.21-01	3,193	74%	\$41,195	26.5%	42.6%	23.5%	4.2%	3.2%

Bike and Pedestrian Facilities

No bike or pedestrian facilities are identified along the proposed corridor; however, the project would improve pedestrian traffic within the corridor through the enhanced efficiency of signal cycles at the proposed two-phase signals. Pedestrians will be accommodated across the Jimmy Carter Blvd bridge via barrier-separated walkway in the middle of the bridge structure. By routing pedestrians through the signal-controlled cross-over intersections onto a barrier-protected walkway down the middle of the existing bridge, the number of pedestrian conflicts with vehicular traffic are expected to be reduced as compared to the existing pedestrian routing. The barrier separation will eliminate vehicle-pedestrian conflicts along the linear length of the bridge.

Crash Data

Crash data for the SR 140/Jimmy Carter Boulevard corridor was obtained from the Georgia Department of Transportation accident records for the years 2006, 2007, and 2008.

Table 6 summarizes the number of accidents, injuries, and fatalities for approximate project limits along Jimmy Carter Boulevard. The rates determined for accidents, injuries, and fatalities were based on 100,000,000 vehicle miles traveled. This data was compared to the Statewide Average Rates provided by GDOT for an Urban Principal Arterial, which is the GDOT functional classification for SR 140/Jimmy Carter Boulevard in the vicinity of the I-85 interchange.

Table 6 GDOT Accident History SR 140/Jimmy Carter Blvd from Brook Hollow Parkway to Singleton Road									
Year	Study Corridor Quantity⁽³⁾			Study Corridor Rates⁽¹⁾			Georgia Statewide Average Rates⁽²⁾		
	Accidents	Injuries	Fatalities	Accidents	Injuries	Fatalities	Accidents	Injuries	Fatalities
2006	540	133	0	2547	627	0	787	291	2.05
2007	542	147	1	2394	649	4.42	649	227	1.53
2008	479	96	0	2205	442	0	612	213	1.33
Total	1561	376	1	-	-	-	-	-	-

- (1) Study Corridor Rates are presented as number of accidents per 100 million vehicle miles in order to compare with Statewide average rates.
- (2) Statewide average rates for similar facilities classified as principal arterial, non-freeway, non-NHS, urban systems.
- (3) Quantity includes accidents recorded on side-streets and ramps at intersections with SR 140/Jimmy Carter Blvd.

For accident rate calculations, daily traffic volumes were obtained from Georgia's State Traffic and Report Statistics (GDOT STARS). Daily traffic volumes along Jimmy Carter Boulevard were obtained between Brook Hollow Parkway and Live Oak Parkway, including both the SR 140 designation segment as well as the county segment.

Accident rates within the study corridor (Table 6) are more than three times the historical Statewide Average Rates. Injury rates within the project limits are roughly two times the historical Statewide Average Rates. The fatality rates within the study corridor are less than the historical Statewide Average Rates in 2006 and 2008. However, with one fatality in 2007, the study corridor rate exceeds the Statewide Average Rates for that year.

Table 7 summarizes the subtotal of the total accidents that occur at the I-85 ramp terminal intersections.

Table 7 GDOT Accident History Subtotal of Accidents at I-85 Ramp Terminal Intersections SR 140/Jimmy Carter Blvd from Brook Hollow Parkway to Singleton Road			
Year	Accidents	Injuries	Fatalities
2006	219	52	0
2007	221	49	0
2008	177	32	0
Total	617	133	0

The quantity of accidents in the vicinity of the I-85 ramp terminal intersections indicates that over a 1.10 mile length of segment recorded, nearly 40% of all accidents occurred within approximately a 0.2 mile segment centered at the I-85/SR 140 interchange. A similar percentage (35%) is noted for the quantity of injuries, as well.

It should be noted that it is difficult to determine precisely from accident summaries what crashes outside of the immediate ramp terminal area may also be attributable to congestion and traffic queues associated with the ramp intersections. However, it is expected that the percentages noted above are actually low since the sample area was taken in the immediate vicinity of the ramp terminals and would not account for accidents that occurred over 250' away from the intersections due to excessive queues.

Note that within the crash data provided between the years 2006 and 2008, three (3) instances of crashes involving pedestrians were recorded. There were three injuries and one fatality associated with these three crash occurrences.

Table 8 presents further analysis of the crash data to illustrate the type of collisions recorded in the project corridor.

Year	Rear End	Angle	Side-Swipe	Head-On	Non-Vehicular	Total
2006	274	132	114	7	13	540
2007	290	121	94	13	24	542
2008	249	99	106	7	18	479
Subtotal	813	352	314	27	55	1561
%	52%	23%	20%	2%	3%	100%

This table illustrates that rear-end collisions account for over 50% of the crash occurrences. This suggests that the majority of accidents are most likely due to heavy congestion in the corridor. Side-swipe crashes represent another 20% of the crash total. Side-swipes are often associated with vehicles making lane-change maneuvers in congested traffic. The project reduces these crash frequencies by proposing DDI improvements to create “cross-over” intersections to more efficiently accommodate heavy left-turn volumes accessing the I-85 entrance ramps. Since congestion and delay are reduced by these improvements as previously noted, it is anticipated that a reduction in rear-end and side-swipe crash occurrences would follow.

By using the cross-over intersection, the signal phasing can be simplified to operate in a two-phase manner. This operation allows the left-turn movements from the I-85 off-ramps onto Jimmy Carter Blvd to “overlap” with the through-traffic cross-over movement. This reduction in the number of signal phases is anticipated to reduce the number of rear-end collisions.

Additional crash-reduction benefits are recognized since this intersection type reduces the number of vehicular conflict points at the intersections from 30 at a conventional signalized diamond interchange to 18 at the DDI interchange. This includes removing 8 “crossing” conflicts. Crossing conflicts tend to result in a high rate of angle crashes, which are also among the most severe. Removal of crossing conflicts is anticipated to result in not only a significant reduction in the number of angle crashes but also a reduction in the potential for severe injuries.

The proposed geometry of the DDI, including the incorporation of reverse curves on approach to the cross-over intersection, is expected to provide a traffic-calming effect, reducing the average speed of travel, and in turn reducing the potential severity of accidents that might occur.

Pedestrian safety characteristics are expected to be enhanced through improved signal operation. Because of the cross-over intersections, the signals at each ramp terminal intersection will now operate in a simple two-phase operation. This allocates more green time to each vehicular phase and, subsequently, allows for more pedestrian cycle time to overlap with the corresponding vehicular phase. The result will be greater opportunity and efficiency for pedestrian crossings through the terminal intersections. By routing pedestrians into a barrier-protected walkway down the middle of the existing bridge, the number of pedestrian conflicts with vehicular traffic are expected to be reduced as compared to the existing pedestrian routing.

Summary

The need for the Diverging Diamond Interchange improvements at the I-85 interchange with SR 140/Jimmy Carter Blvd is documented through the previous sections. The documented needs are briefly summarized below:

1. Deficient existing levels-of-service (LOS) for vehicular traffic through the corridor.
2. Accident rates and injury rates that significantly exceed statewide averages for similar facilities.

The proposed improvements address the needs by:

1. Improving vehicular safety:
 - a. Reducing the number of conflict points at the signalized intersections of the I-85 ramp terminals.
 - b. Removing crossing traffic movements to reduce the rate of occurrence and severity of vehicle crashes.
 - c. Providing roadway alignment geometry that calms traffic and reduces overall average travel speeds through the interchange area.
2. Reducing traffic congestion:
 - a. Improving the level of service (LOS) of the target intersections.
3. Facilitating efficient operation of traffic entering and exiting I-85:
 - a. Reducing the number of signal phases at each ramp terminal signal, resulting in an improvement in overall signal operation and efficiency.
4. Improving pedestrian operation:
 - a. Providing a raised, channelized, and barrier-protected pedestrian walkway across the existing bridge.
 - b. Providing a signal-controlled pedestrian route through the cross-over intersections to access the barrier-protected walkway.

Department of Transportation State of Georgia

INTERDEPARTMENT CORRESPONDENCE

FILE Gwinnett County **OFFICE** Planning
P.I. # 0010111 **DATE** September 27, 2010

FROM Angela T. Alexander, State Transportation Planning Administrator

TO Russell R. McMurry, P.E., State Roadway Design Engineer
Attention: Chuck Hasty, P.E.

SUBJECT **Reviewed** Design Traffic for I-85 at S.R. 140 – PE Only.

Reviewed Design Traffic for the above project is approved based on information furnished.

If you have any questions concerning this information please contact Abby Ebodaghe at (404) 631-1923.

ATA/AFE

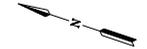
PROJECT: PI No. 0010111 / TIP No. GW-345A
Gwinnett County Project No: F-0780-01

SUBJECT: Traffic Assignments for SR 140 (Jimmy Carter Boulevard) between Brook
Hollow Parkway and Live Oak Parkway in Gwinnett County, Georgia.

We are furnishing estimated Traffic Assignments for the above project as shown
below:

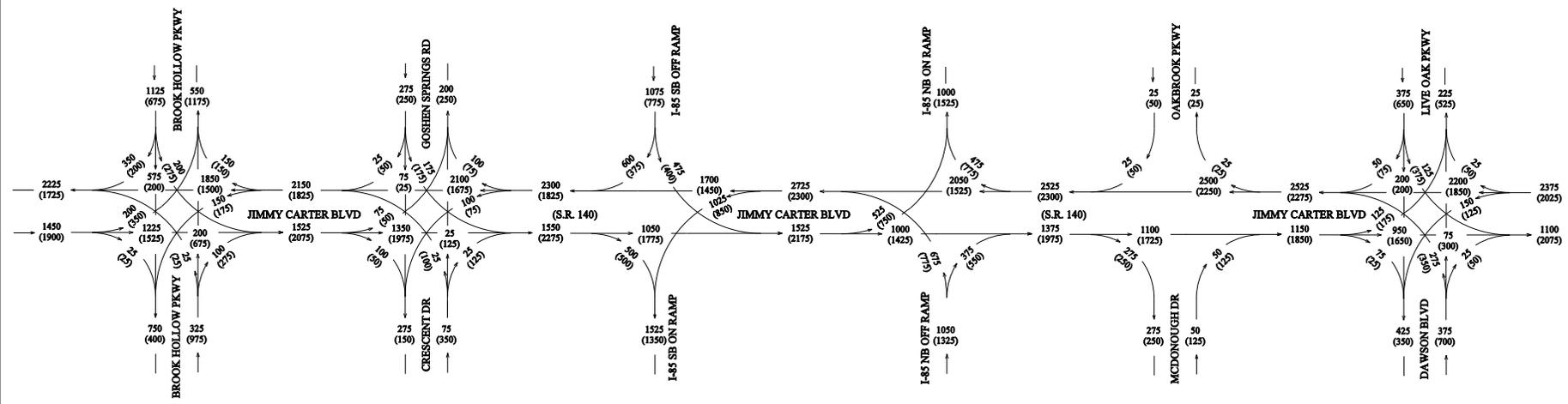
2010 ADT =	59,800
2012 ADT =	61,500
2022 ADT =	70,600
K =	6.5%
D =	52%
T =	2.5%
24 HR. T. =	5%
S.U. =	3%
COMB. =	2%

If you have any questions concerning this information please contact Mike
Rushing at (678) 533-3925.



DHV TRAFFIC VOLUMES
EXISTING YEAR 2010
AM PEAK HOUR = XXX
PM PEAK HOUR = (XXX)

PEAK HOUR
TRUCKS = 2.5%



GWINNETT COUNTY
I-85 AT JIMMY CARTER BLVD
PROJECT NO: TBD
PI: TBD
08/10

Kimley-Horn and Associates, Inc.
Engineering, Planning, and Environmental Consultants
Suite 600, 3166 Holcomb Bridge Road
Norcross, Georgia 30071

REVISION DATES

GWINNETT COUNTY
DEPARTMENT OF TRANSPORTATION
TRAFFIC DIAGRAM

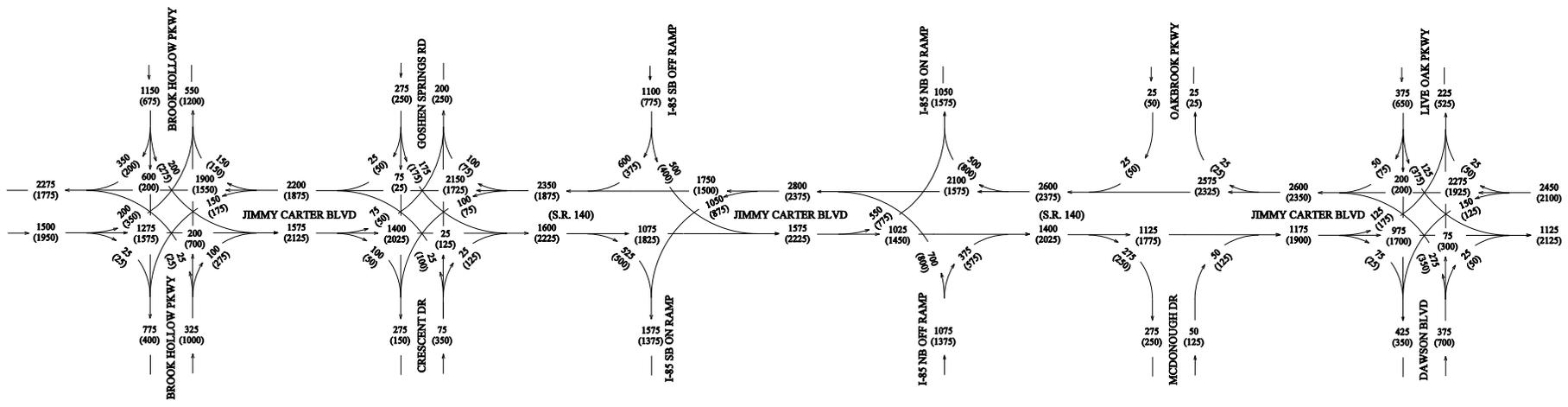
DIVERGING DIAMOND INTERCHANGE
AT JIMMY CARTER BLVD

DRAWING NO:
10-01



DHV TRAFFIC VOLUMES
 BASE YEAR 2012
 AM PEAK HOUR = XXXX
 PM PEAK HOUR = (XXXX)

PEAK HOUR
 TRUCKS = 2.5%



GWINNETT COUNTY
 I-85 AT JIMMY CARTER BLVD
 PROJECT NO: TBD
 PI: TBD
 08/10

Kimley-Horn and Associates, Inc.
 Engineering, Planning, and Environmental Consultants
 Suite 600, 3160 Holcomb Bridge Road
 Norcross, Georgia 30071

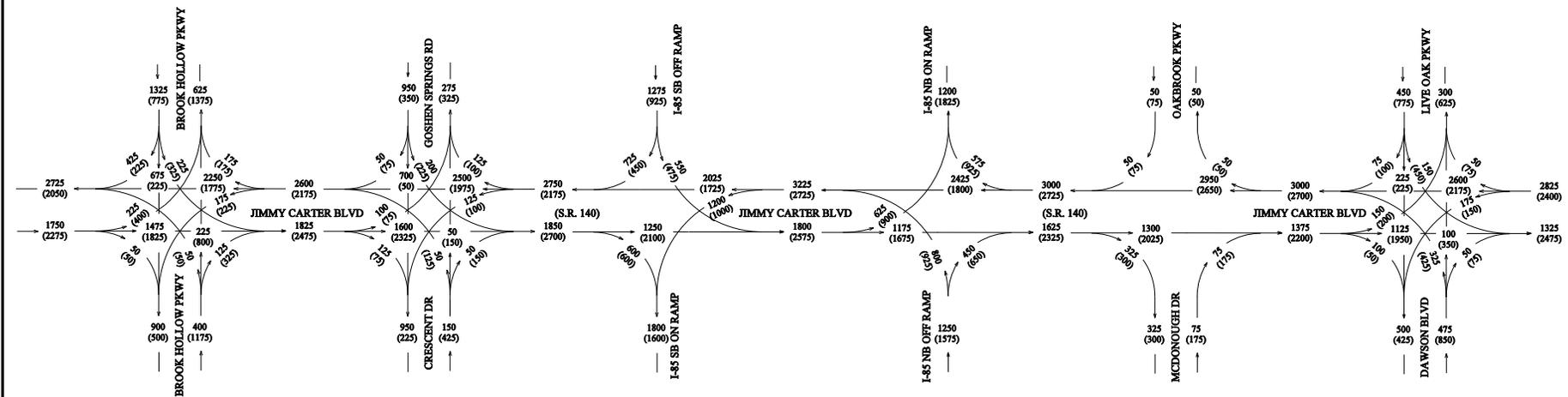
REVISION DATES

GWINNETT COUNTY
 DEPARTMENT OF TRANSPORTATION
TRAFFIC DIAGRAM
 DIVERGING DIAMOND INTERCHANGE
 AT JIMMY CARTER BLVD

DRAWING NO.
10-02

DHV TRAFFIC VOLUMES
 DESIGN YEAR 2022
 AM PEAK HOUR = XXXX
 PM PEAK HOUR = XXXX

PEAK HOUR
 TRUCKS = 2.5%



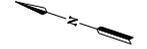
GWINNETT COUNTY
 I-85 AT JIMMY CARTER BLVD
 PROJECT NO: TBD
 PI: TBD
 08/10

Kimley-Horn and Associates, Inc.
 Engineering, Planning, and Environmental Consultants
 Suite 600, 3160 Holcomb Bridge Road
 Norcross, Georgia 30071

REVISION DATES

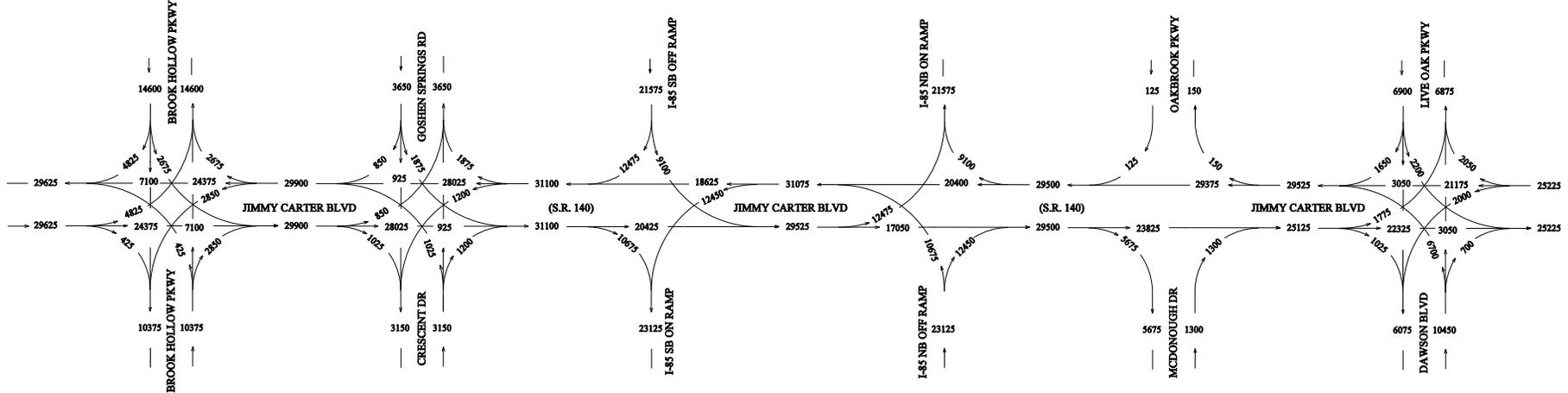
GWINNETT COUNTY
 DEPARTMENT OF TRANSPORTATION
TRAFFIC DIAGRAM
 DIVERGING DIAMOND INTERCHANGE
 AT JIMMY CARTER BLVD

DRAWING NO.
10-03



ADT TRAFFIC VOLUMES
 EXISTING YEAR 2010

24-HOUR
 TRUCKS = 5%
 S.U. = 3%
 COMB = 2%



GWINNETT COUNTY
 I-85 AT JIMMY CARTER BLVD
 PROJECT NO: TBD
 PI: TBD
 08/10

Kimley-Horn and Associates, Inc.
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 Norcross, Georgia 30071

REVISION DATES

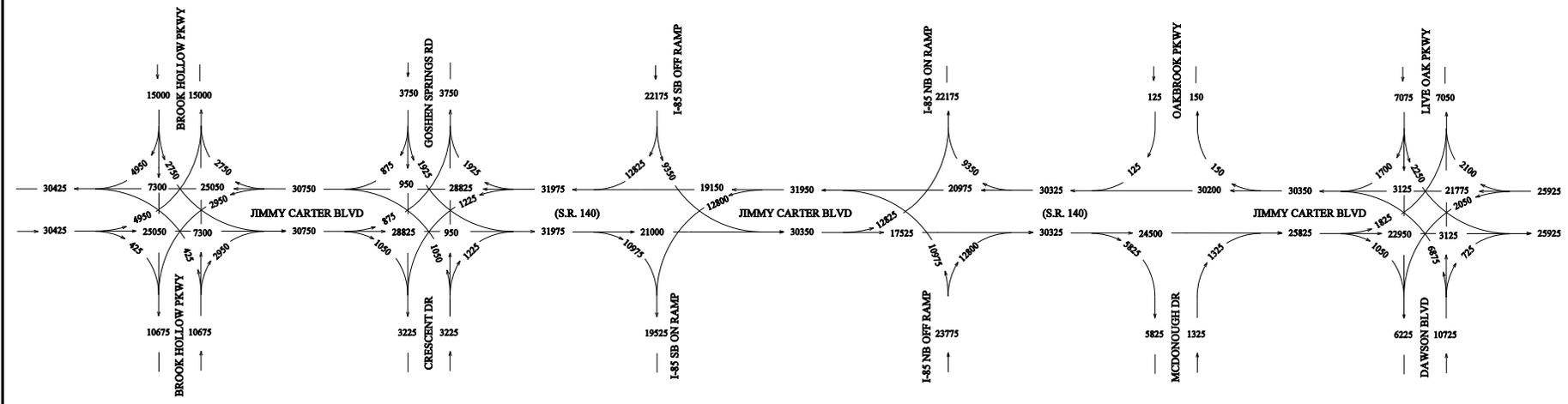
GWINNETT COUNTY
 DEPARTMENT OF TRANSPORTATION
TRAFFIC DIAGRAM
 DIVERGING DIAMOND INTERCHANGE
 AT JIMMY CARTER BLVD

DRAWING NO.
10-04



ADT TRAFFIC VOLUMES
 BASE YEAR 2012

24-HOUR
 TRUCKS = 5%
 S.U. = 3%
 COMB = 2%



GWINNETT COUNTY
 I-85 AT JIMMY CARTER BLVD
 PROJECT NO: TBD
 PI: TBD
 08/10

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 Norcross, Georgia 30071

REVISION DATES

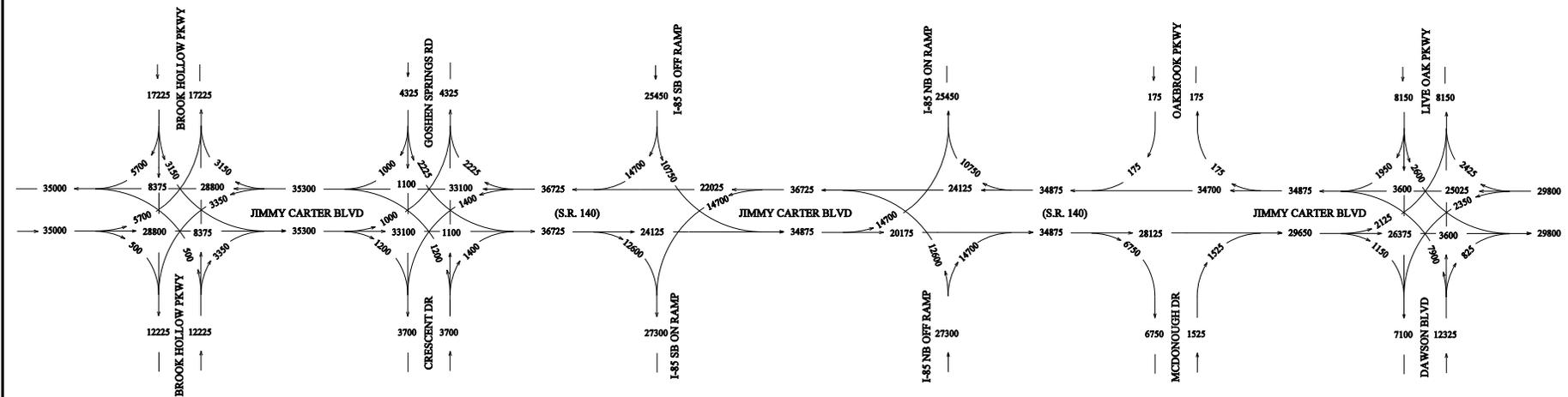
GWINNETT COUNTY
 DEPARTMENT OF TRANSPORTATION
TRAFFIC DIAGRAM
 DIVERGING DIAMOND INTERCHANGE
 AT JIMMY CARTER BLVD

DRAWING NO.
10-05



ADT TRAFFIC VOLUMES
 DESIGN YEAR 2022

24-HOUR
 TRUCKS = 5%
 S.U. = 3%
 COMB = 2%



GWINNETT COUNTY
 I-85 AT JIMMY CARTER BLVD
 PROJECT NO: TBD
 PI: TBD
 08/10

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REVISION DATES

GWINNETT COUNTY
 DEPARTMENT OF TRANSPORTATION

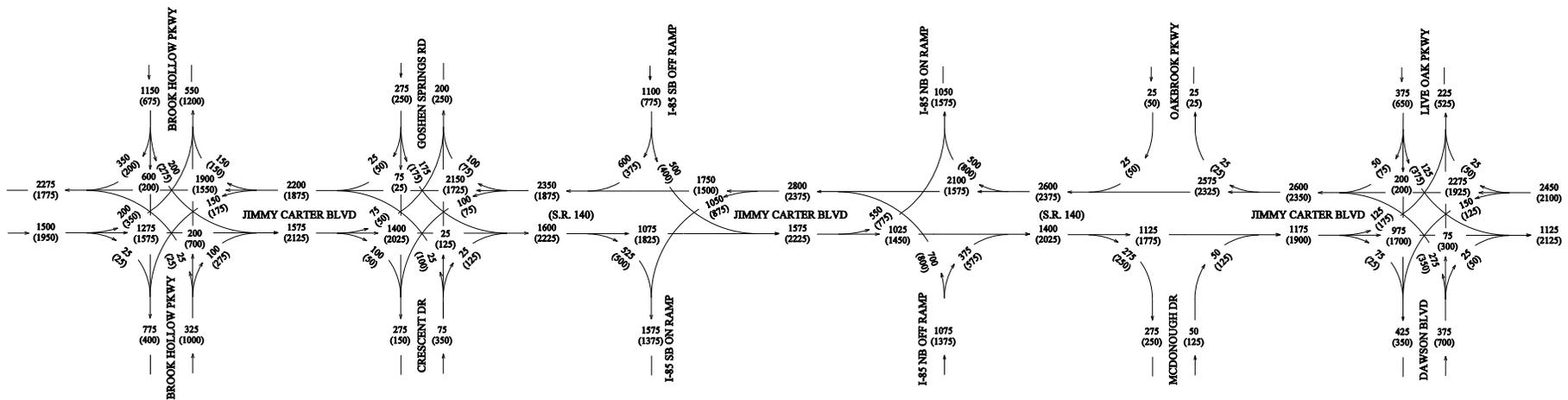
TRAFFIC DIAGRAM

DIVERGING DIAMOND INTERCHANGE
 AT JIMMY CARTER BLVD

DRAWING NO.
10-06

NO-BUILD DIVV TRAFFIC VOLUMES
 BASE YEAR 2012
 AM PEAK HOUR = XXXX
 PM PEAK HOUR = (XXX)

PEAK HOUR
 TRUCKS = 2.5%



GWINNETT COUNTY
I-85 AT JIMMY CARTER BLVD
 PROJECT NO: TBD
 PI: TBD
 08/10

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REVISION DATES

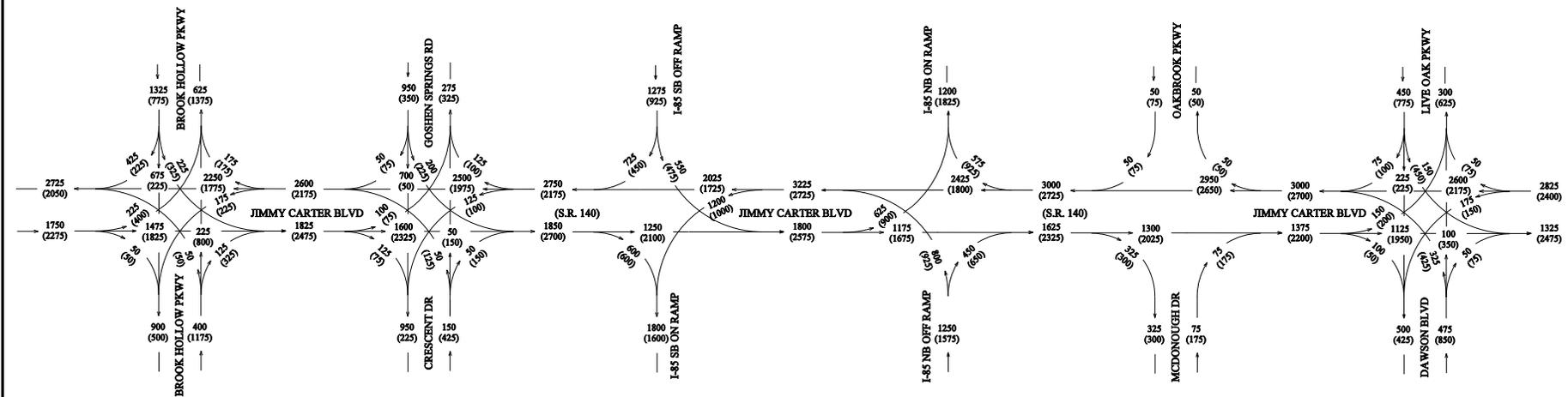
GWINNETT COUNTY
DEPARTMENT OF TRANSPORTATION
TRAFFIC DIAGRAM

DIVERGING DIAMOND INTERCHANGE
AT JIMMY CARTER BLVD

DRAWING NO.
10-07

NO-BUILD DHV TRAFFIC VOLUMES
 DESIGN YEAR 2022
 AM PEAK HOUR = XXXX
 PM PEAK HOUR = XXXX

PEAK HOUR
 TRUCKS = 2.5%



GWINNETT COUNTY
I-85 AT JIMMY CARTER BLVD
 PROJECT NO: TBD
 PI: TBD
08/10

**Kimley-Horn
and Associates, Inc.**
 Engineering, Planning, and Environmental Consultants
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 Norcross, Georgia 30071

REVISION DATES

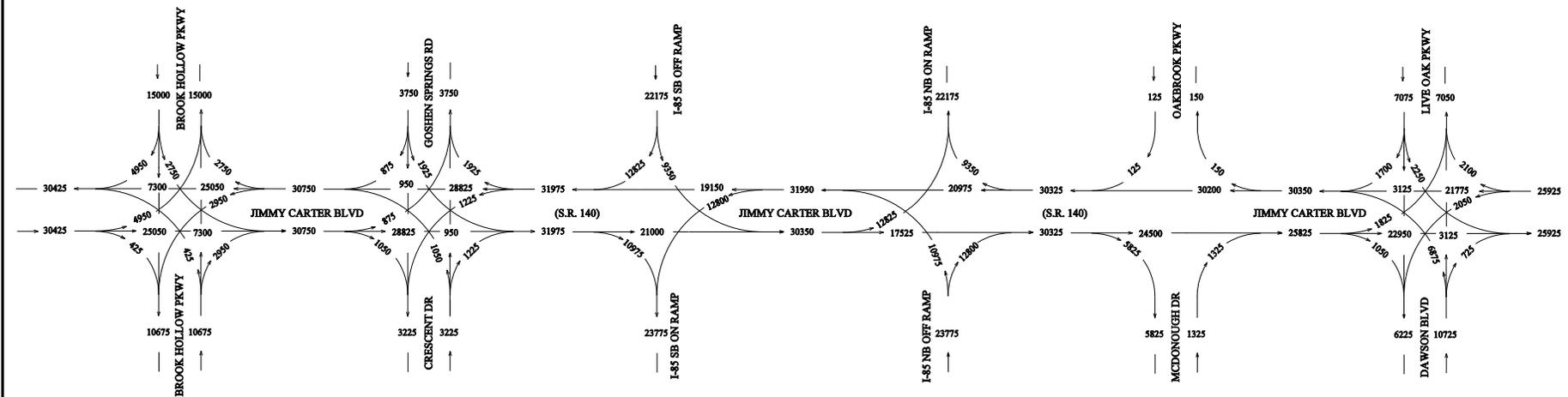
GWINNETT COUNTY
DEPARTMENT OF TRANSPORTATION
TRAFFIC DIAGRAM
DIVERGING DIAMOND INTERCHANGE
AT JIMMY CARTER BLVD

DRAWING NO.
10-08



NO-BUILD ADT TRAFFIC VOLUMES
BASE YEAR 2012

24-HOUR
TRUCKS = 5%
S.U. = 3%
COMB = 2%



GWINNETT COUNTY
I-85 AT JIMMY CARTER BLVD
PROJECT NO: TBD
PI: TBD
08/10

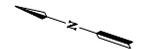
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Norcross, Georgia 30071

REVISION DATES

GWINNETT COUNTY
DEPARTMENT OF TRANSPORTATION
TRAFFIC DIAGRAM
DIVERGING DIAMOND INTERCHANGE
AT JIMMY CARTER BLVD

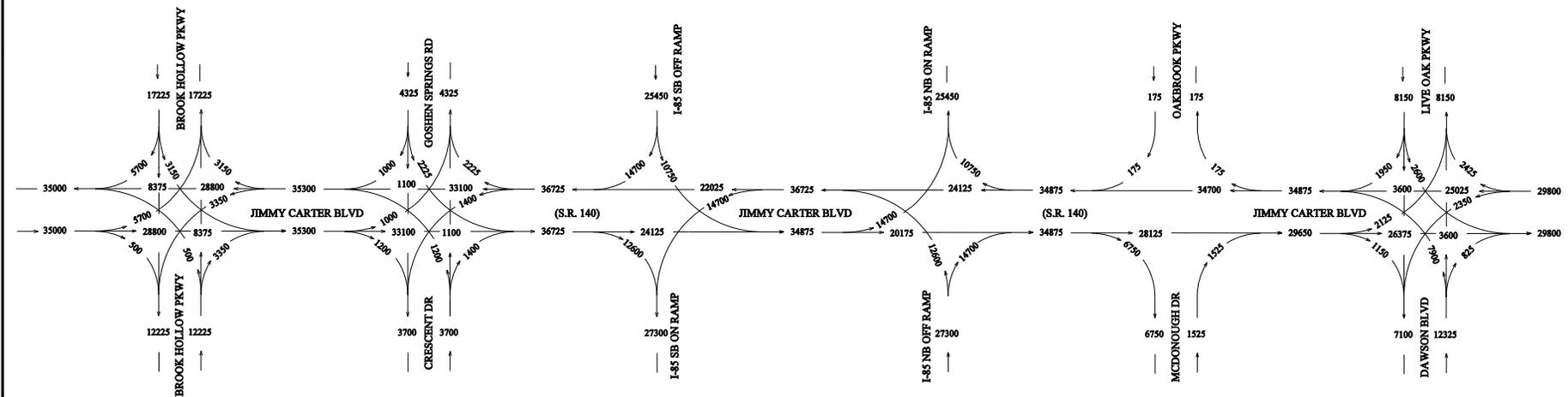
DRAWING NO.
10-09

11/1/2007
CPA
11/1/2007
CPA
11/1/2007
CPA



NO-BUILD ADT TRAFFIC VOLUMES
DESIGN YEAR 2022

24-HOUR
TRUCKS = 5%
S.U. = 3%
COMB = 2%



GWINNETT COUNTY
I-85 AT JIMMY CARTER BLVD
PROJECT NO: TBD
PI: TBD
08/10

**Kimley-Horn
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Norcross, Georgia 30071

REVISION DATES

GWINNETT COUNTY
DEPARTMENT OF TRANSPORTATION
TRAFFIC DIAGRAM

DIVERGING DIAMOND INTERCHANGE
AT JIMMY CARTER BLVD

DRAWING NO.
10-10



To: Attendees

From: Kevin Ergle, P.E.
Kimley-Horn and Associates, Inc.

Subject: Jimmy Carter Boulevard/SR140 @ I-85 Diverging Diamond Interchange
Gwinnett #F-0780-01, Gwinnett County
Concept Team Meeting

Date: July 27, 2010; *Revised July 30, 2010*

A meeting was held on July 26, 2010 at 8:30 AM in the Gwinnett County Justice and Administration Center. The following is a list of attendees (see attachment for e-mail addresses & phone numbers):

Lewis Cooksey (Moderator)	Gwinnett County DOT
Russell Royal	Gwinnett County DOT
John Ray	Gwinnett County DOT
Chuck Hasty	GDOT
John McHenry	Gwinnett Village CID
Alyssa Sinclair	Gwinnett Village CID
Chuck Warbington	Gwinnett Village CID
Kendra Bunker	FHWA
Tony Harris	Gwinnett County DWR
Jesse Vance	Gwinnett County DWR
Kevin Conaway	Gwinnett County DWR
Steven McMurray	BNS (engineer for Comcast)
Erick Fry	URS
Hank Collins	Moreland-Altobelli
Bill Ruhsam, Jr.	Moreland-Altobelli
Mike Rushing	Kimley-Horn (KHA)
Kevin Ergle	Kimley-Horn (KHA)

The meeting was held as the official Concept Team Meeting (CTM) for the Jimmy Carter Boulevard/SR140 @ I-85 Diverging Diamond Interchange (DDI) project. Kimley-Horn and Associates (KHA) is the design consultant for the Gwinnett Village Community Improvement District (GVCID).

The following items were discussed:

- Lewis Cooksey welcomed the attendants and asked Mike Rushing to give a brief presentation on the project, including operations of the diverging diamond.
- Mike Rushing gave an overview of the project using two aerial layouts, one showing the existing aerial and another showing the proposed DDI linework over the aerial. Mike made discussed the following:
 - The biggest differences in traffic movements are the free-flow lefts from JCB to I-85N and from JCB to I-85S, the prohibiting of the through movements from exit ramps to entrance ramps, and the general laneage shifts.

- Pedestrians will be moved to the median area and be provided barrier separation from traffic. This is done to minimize movement across free-flow areas and to help with pedestrian visibility of approaching traffic.
 - The fact that funding is currently available for the DDI as opposed to having to fund an entire interchange reconstruction. Thus, the DDI can be constructed in a more immediate time-frame than the conventional interchange reconstruction, meaning the Jimmy Carter corridor can get traffic relief sooner.
 - The proposed change of access along JCB at the Drury Inn/Pappadeaux restaurant driveway, in order to create inter-parcel access and move the Pappadeaux/Drury Inn driveway further away from the interchange ramp.
 - A right-turn lane is proposed to be added to Goshen Springs Road SB at the Jimmy Carter intersection, in accordance with recommendations from a County study on the corridor.
 - The fact that the JCB corridor is currently running under a timed signal operation. The proposed improvements would behave similar to a split-phased interchange and have to be meshed-into the timed corridor.
 - The site visit to the Springfield, Missouri DDI (Kansas Expressway/SR13 @ I-44) and how the project acted as a traffic calming measure. Both Mike and Lewis Cooksey felt that the pedestrian walkway along the median provided good protection from the adjacent traffic.
- Kevin Conaway asked if minimal excavation could be expected. Mike responded that there would be some excavation due to minor widening in areas, but that there would not be wholesale reconstruction of pavement unless the pavement evaluation requires it. Generally it is anticipated that the project will be a “mill and inlay” on the existing pavement with minor widening, maintaining the entire project at existing grade.
 - Chuck Warbington asked that schedule be discussed from a standpoint of when would construction of the project (time of day, time of year, etc.) make the most sense. Chuck W. stated that this timeframe should be determined and then have the design schedule backed into this date.
 - Jesse Vance asked if multiple project numbers would be used for this project. Russell Royal stated that one project number would be used. (Lewis Cooksey subsequently provided County project number “F-0780-01”)
 - Mike stated that GDOT’s role would be to help facilitate the concept development and approval and the environmental document review and approval, including coordination with FHWA.
 - Chuck Hasty stated that a project number had been assigned, but that it would need to go through ARC. (Chuck Hasty subsequently followed-up that the project is in the TIP with an ARC project number of “GW-345A”)

- Chuck W. stated that a distinction needs to be made between the DDI project and the bridge replacement; that they will not have the same project number. (Chuck Hasty subsequently followed-up that the project number in the TIP is specific to the DDI)
- Bill Ruhsam, Jr. asked if the DDI would be on the September TIP schedule. He stated that if not, it may not get into the TIP until January 2011. (This appears to be resolved based on the information provided by Chuck Hasty that the project is already programmed in the TIP *under the ARC Project Number GW-345A – see attachment*). *Because the DDI is not a capacity increasing project, the project will be exempt from the ARC's Air Quality Analysis (40 CFR 93). Once a PI number is assigned to the DDI, that change can be processed as an Administrative Modification to the ARC's TIP.*
 - *In order to get a PI Number assigned to this project, GDOT has requested that cost estimates for PE, ROW, UTIL, and CST be completed.*
- Lewis stated that Gwinnett County has funding in place for the DDI project and *partial funding in place* for the bridge replacement project.
- Mike stated that he envisions needing a Categorical Exclusion due to the need for construction within federal right-of-way/access. He noted that data collection for the environmental document had begun, but would eventually reach a standstill until PI number was assigned and Need/Purpose statement was approved.
- Bill asked if traffic was going to be updated.
 - Mike stated that the IMR/technical memo developed by Jacobs Engineering gave traffic volume projections for 2015 (anticipated base year for the full interchange reconstruction) and 2035 (anticipated design year). He then stated that he believed the projected traffic for the DDI should show the design year as matching what the TIP shows as the build year for the bridge reconstruction.
 - Mike also stated that because the IMR's 2008 traffic counts were higher than traffic counts taken recently, that the 2008 volumes should be shown as 2010 and grown from there. Documentation on this will be provided.
 - Chuck H. stated that his GDOT office would likely review the traffic volumes and methodology.
 - Bill stated that the Office of Planning should be made aware of how the traffic was developed in order to head off comments on Purpose/Need statement and subsequent environmental documents.
- Mike stated that he anticipated a normal GDOT approval for the Need and Purposed Statement would be required.
- Chuck H. agreed and indicated that we could provide draft N&P statement to him for his forwarding to the Office of Planning. It was decided that best approach would be to provide (1) separate traffic tech memo to document the traffic projects and (2) separate N&P statement for review and approval. This would separate these two components from the concept report and the

concept report should attach written concurrence on these two components as part of the final draft submitted for approval.

- The draft project concept report was discussed. The following comments were made regarding the project concept and the project concept report:
 - A comment was made to verify that the signature blocks matched the current PDP guidance. A line for a FHWA signature will be needed if the project has full oversight.
 - Bill asked KHA to verify the Brook Hollow NB LOS in Table 3.
 - Bill asked KHA to verify the “Total” amounts shown in Table 7.
 - Chuck H. asked KHA to verify that the information shown in the Concept Report’s Need and Purpose section matches what is shown in the Need and Purpose statement.
 - Mike noted that a benefit/cost ratio will be added to the report.
 - Chuck H. asked that KHA attempt to “target” the crashes as to location. Specifically, attempting to identify the crashes that occurred at the ramp termini and to show where the 2007 fatality occurred.
 - Chuck H. said that the crash rate for this project is approximately four times the state average for a similar project.
 - Chuck H. asked that the federal oversight level be verified. This project will constitute a federal action, but may not be full oversight.
 - Kendra Bunker will check with her partners to help determine the federal oversight level.
 - Mike stated that additional discussion on base/design year traffic would be added to the Traffic section on page 11.
 - Regarding the bridge sufficiency rating on page 12, Mike clarified that reason the score was below 50, which triggers eligibility for federal funding, was not because of structural problems, but was primarily due to low functionality scores related to the number of lanes present on the bridge and sub-standard features such as sidewalk widths and railings.
 - Mike discussed the proposed 20 mph speed reduction to 25 mph. A 25 mph design speed would allow the existing/concept geometry to work without the need to add superelevation. It is anticipated that the proposed design speed will require a design exception.
 - Chuck H. asked that the mitigation strategies for the speed reduction be included in the Concept Report and that a normal MUTCD speed reduction signage pattern should be used during the design phase.
 - Chuck H. asked Lewis to forward him information on the Springfield, MO DDI site visit so that he can forward to FHWA staff.

- Chuck H. asked that a smaller design vehicle be used instead of the currently shown WB-50.
 - Mike stated that the percent trucks is approximately 5%.
 - John McHenry stated that a separate study of the area performed by Street Smarts confirms this low truck percentage.
 - It was noted that for a design vehicle WB-40 or SU truck is probably more appropriate based on the low volumes and truck types.
- Mike stated that KHA would need help pulling together the utility cost estimates.
 - Chuck H. stated that a placeholder for utility relocation costs is needed on page 15.
 - Chuck H. also stated that the utility relocation cost estimate needs to be within 20% of the actual amount or else an additional amendment would be required.
 - Chuck H. likened this scenario to an emergency bridge replacement, in terms of schedule for getting this estimate from the utility owners and that because this is a state route, it could be coordinated through the district office.
- Mike stated that he believed it was possible to acquire right-of-way from impacted property owners without having an approved environmental document since no federal funding was involved.
 - Chuck H. stated that he believed advanced work could be performed, but that because the project is on a state route and the right-of-way would be transferred back to the state after Gwinnett County acquires, that negotiations could not occur with the environmental document was approved.
- Chuck H. asked that the ramp meters be accounted for.
 - Mike stated that the current traffic model does account for the ramp meters. Discussion can be added to the Concept Report to clarify this.
- Chuck H. stated that he would push for a quick review out of his office and that KHA should try to get written concurrence for both the traffic and the Need and Purpose Statement.
 - Mike stated that he would pull together a technical memo to discuss the proposed traffic volume generation methodology.

This document represents Kimley-Horn's interpretation of the meeting. Please contact Kevin Ergle at kevin.ergle@kimley-horn.com or at 678-533-3930 if you have any questions, comments or concerns.

Sign-In Sheet

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FY 2008-2013 Transportation Improvement Program - Sorted by ARC Project Number

GW-343	I-985 PARK AND RIDE LOT EXPANSION	Jurisdiction	Gwinnett County	Existing	Planned	Length (mi.)	Network Year
0008712	AT SR 20 IN GWINNETT COUNTY	Sponsor	GRTA	N/A	N/A	N/A	2020
Programmed		Service Type	Transit Facilities	Analysis	Exempt from Air Quality Analysis (40 CFR 93)		Open Year 2011

Status	Year	Fund Type	Federal	State	Local	Bonds	Total
ROW AUTH	2009	Bus - New (80/20)	\$0,000	\$0,000	\$0,000	\$0,000	\$0,000
CST	2010	Transit Urbanized Area Formula Program	\$3,941,000	\$0,000	\$0,000	\$985,250	\$4,926,250
			\$3,941,000	\$0,000	\$0,000	\$985,250	\$4,926,250

GW-344	I-85 ATMS	Jurisdiction	Gwinnett County	Existing	Planned	Length (mi.)	Network Year
110720	FROM PLEASANT HILL ROAD TO OLD PEACHTREE ROAD	Sponsor	GDOT	N/A	N/A	4.9	2020
Programmed		Service Type	ITS-Smart Corridor	Analysis	Exempt from Air Quality Analysis (40 CFR 93)		Open Year 2011

Status	Year	Fund Type	Federal	State	Local	Bonds	Total
CST AUTH	2010	ARRA - Statewide Flexible (GDOT)	\$0,000	\$0,000	\$0,000	\$0,000	\$0,000
			\$0,000	\$0,000	\$0,000	\$0,000	\$0,000

GW-345A	I-85 NORTH DIVERGING DIAMOND INTERCHANGE	Jurisdiction	Gwinnett County	Existing	Planned	Length (mi.)	Network Year
TBD	AT JIMMY CARTER BOULEVARD	Sponsor	Gwinnett County	N/A	N/A	N/A	2020
Programmed		Service Type	Roadway Operational Upgrades	Analysis	Exempt from Air Quality Analysis (40 CFR 93)		Open Year 2012

Status	Year	Fund Type	Federal	State	Local	Bonds	Total
PE AUTH	2010	Local Jurisdiction/Municipality Funds	\$0,000	\$0,000	\$0,000	\$0,000	\$0,000
ROW	2011	Local Jurisdiction/Municipality Funds	\$0,000	\$0,000	\$1,000,000	\$0,000	\$1,000,000
CST	2012	Local Jurisdiction/Municipality Funds	\$0,000	\$0,000	\$3,000,000	\$0,000	\$3,000,000
			\$0,000	\$0,000	\$4,000,000	\$0,000	\$4,000,000

**Benefit Cost Analysis Work Sheet
CONGESTION Projects**

PI NUMBER 0010111

Gwinnett County

Jimmy Carter Boulevard at I-85 Interchange: Diverging Diamond Interchange

Congestion Benefit = Tb + CMb + Fb

Person Time Savings Benefit (Tb)

*Db (hrs)	0.0035
ADT	70,600.00
Tb (\$s)	\$8,494,062.50

Commercial or Truck Time Savings Benefit (CMb)

Db (hrs)	0.0035
% Truck Traffic	0.05
ADT	70,600.00
CMb	\$2,243,976.88

Fuel Savings Benefit (Fb)

ADT	70,600.00
Fb (\$s)	\$2,960,052.08

Total Congestion Benefit	\$13,698,091.46
Total Project Cost	\$2,120,000.00
B/C Ratio	6.46

*Reduction in delay or **Delay Benefit (D_b)** can be defined as the difference between the peak hour travel time through the corridor without the proposed improvement and the peak hour travel time through the corridor with the proposed improvement.