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BACKGROUND

2008 JJ&G/Georgia Department of Transportation (GDOT) Interstate System Study

In September 2008, at the request of the Chatham Urban Transportation Study Metropolitan Planning Organization (CUTS MPO, now Coastal Region MPO), and under contract to GDOT, JJ&G conducted an initial analysis of the potential traffic impact of the removal of the I-16 eastbound overpass at Martin Luther King, Jr. Boulevard, and the reconfiguring of the I-16 westbound on-ramp from downtown Savannah, in conjunction with an ongoing GDOT Interstate Study. Three conceptual alternatives were developed which removed the elevated Interstate and terminated the mainline at the same grade west of Martin Luther King, Jr. Blvd. East of Martin Luther King, Jr. Blvd., these alternatives allowed for the reestablishment of city blocks and associated redevelopment. However, urban redevelopment would remain hindered west of Martin Luther King, Jr. Blvd. since access control was maintained on the interstate west of Martin Luther King Jr., Blvd.

Figure 1- 2008 Alternative 3 JJ&G study



The results of the 2008 study indicate that Alternative Three would allow for the removal of the I-16 flyover without a significantly detrimental effect on the function of I-16 or the adjacent roadway network. Traffic patterns remain essentially unchanged as the interstate’s access control is maintained west of Martin Luther King Jr. Blvd.

Alternative 3, the highest performing alternative of the JJ&G/GDOT study calls for I-16 ramps with a 55 mph design speed immediately west of Martin Luther King, Jr. Blvd. East of Martin Luther King, Jr. Blvd, Montgomery St. would continue to function as a one-way street with one-way traffic operation extended further south to Gaston St.

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BACKGROUND SUMMARY

2011 MPC/CORE MPO Study

While the 2008 study was initiated at the request of the CORE MPO, the alternatives analyzed were developed and provided to the MPO as a finished product. As a result, the alternatives explored in 2008 do not fully address the local desire for downtown expansion and urban redevelopment west of Martin Luther King, Jr. Blvd., or the restoration of Montgomery Street to two-way traffic. The new street network proposed by the current study, therefore, places a greater emphasis on access to adjacent land uses west of Martin Luther King, Jr. Blvd.

Having received confirmation that the Martin Luther King, Jr. Blvd flyover removal is viable within the context of the 2008 GDOT study, in 2009, the CORE MPO undertook the current planning study to take a more detailed look at alternatives. The preferred concept, Concept Three, differs from the alternatives studied by JJ&G in that I-16, as a limited access facility, would be terminated at Gwinnett Street. Additionally, traffic characteristics for the preferred concept differ from the prior study in that traffic accessing or leaving the interstate must do so at Gwinnett Street or one of the other partial interchanges in the area such as Oglethorpe Avenue or Louisville Road. This configuration creates considerably more redevelopment potential, and traffic bound to and from the interstate navigates surface streets and at grade intersections north and east of Gwinnett Street.

The current traffic analysis follows as closely as possible the 2008 JJ&G methodology, using the same base year counts and growth assumptions. Additional traffic counts were collected at I-16 / Gwinnett St. ramps since this area was not part of the 2008 analysis. The planning horizon year was extended from 2030, as presented in the 2008 study, to 2035 for consistency with current MPO plans and traffic forecasting tools.

As part of the current study, current conditions were analyzed, a System Level Analysis was conducted, and a Synchro Analysis was completed.

CURRENT CONDITIONS

Under current (2007 base year) conditions, the key intersections in the study area operate at acceptable levels of service as shown in Table One.

Table One: Existing Intersection Levels of Service

Key Intersections	2007			
	a.m. peak		p.m. peak	
	Delay (sec)	LOS	Delay (sec)	LOS
MLK Jr Blvd @ I-16 Off-Ramp W Gaston St	19.6	B	8.6	A
MLK Jr Blvd @ I-16 On-Ramp W Alice St (Taylor)	4.9	A	10.5	B
MLK Jr Blvd @ W Liberty St	20.4	C	35.7	D
MLK Jr Blvd at Gwinnett St	6.9	A	9.7	A
Montgomery St at Liberty St	9.6	A	21	C
Gwinnett St at W Boundary St/I-16 SB On-Ramp	13.9	B	15.8	B
Gwinnett St at W Boundary St/I-16 NB Off-Ramp	11.8	B	15.7	B

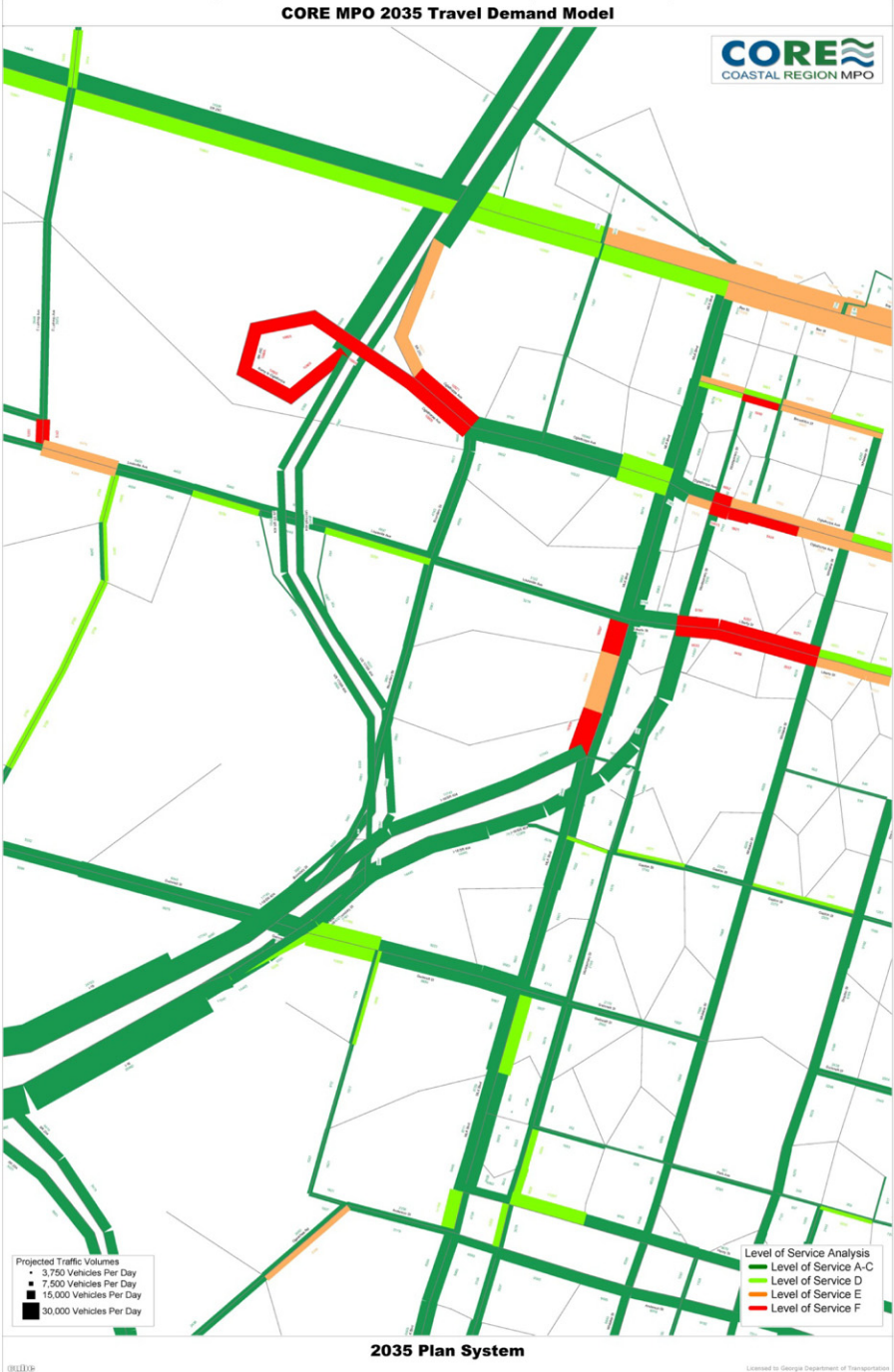
LOS A-D are generally considered acceptable levels of service for existing/established urban networks. LOS E is often considered acceptable in downtowns.

SYSTEMS LEVEL ANALYSIS

A systems level analysis was conducted using the 2035 GDOT/CORE MPO travel demand model to forecast daily traffic volumes and to estimate hypothetical daily level of service conditions in 2035, the horizon plan year.

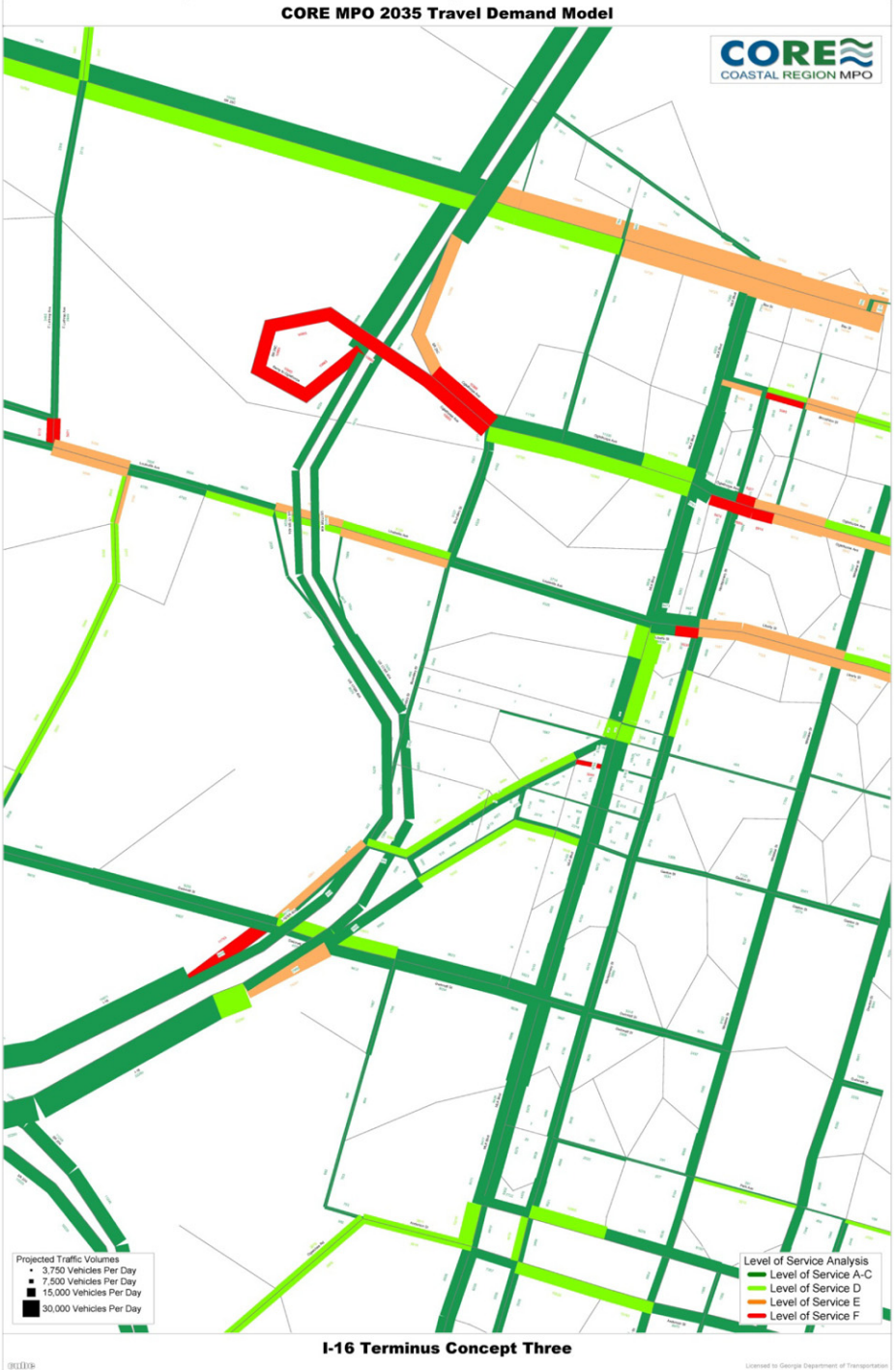
Under a no build scenario, all street segments in the detailed planning area are expected to function at a desirable level of service (LOS A-D), with the exception of MLK southbound between Liberty St. and I-16 on-ramp (LOS F) as shown in Figure Two.

Figure Two- 2035 No Build Systems Analysis



If Concept Three is constructed, the travel demand model suggests that most street segments in the study area will continue to function at an estimated LOS D or better. Potential capacity issues are projected in the vicinity of the I-16 Gwinnett St. interchange for links providing ingress and egress including Boundary St. (LOS E) and the northbound off-ramp and southbound on-ramps of I-16 (LOS E and F respectively). Traffic shifts under this scenario increase northbound traffic on MLK North of Jones St. and Eastbound traffic on Liberty St. between MLK and Montgomery St. resulting in LOS F for these segments as shown in Figure Three.

Figure Three- 2035 Concept Three Systems Analysis



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SYSTEMS LEVEL ANALYSIS

SYNCHRO ANALYSIS

Synchro is a macroscopic signal analysis and optimization software application. It is one of the leading traffic analysis applications in use today.

A Synchro analysis was conducted in order to better understand the impacts of potential traffic shifts on key intersections in the study area. For the sake of this analysis, it was assumed that signal timing and configurations can be adjusted as needed, and that travel lanes can be reconfigured within the existing curb lines. Synchro optimizations were used for all LOS and delay calculations. In addition to these assumptions, it was necessary to assume several improvements to the initial Concept Three proposal in order to achieve satisfactory traffic operations. These include:

- Additional through and right turn lanes on the northbound off-ramp of I-16 at Gwinnett Street
- Additional left and right turn lanes on West Huntingdon Street at West Boundary Street
- Additional southbound turn lanes on Boundary Street at Gwinnett Street.

The Synchro model was developed using base year turning movement counts. Existing data sources were examined to determine appropriate and reasonable growth rates to be applied in the Synchro model.

First, a cordon analysis was conducted with the GDOT/CORE MPO travel demand model. A cutline was drawn around the west and south sides of downtown Savannah just east of MLK Blvd. and just north of Henry Street from Bay Street to Abercorn Street. The results of this analysis are shown in Table Two.

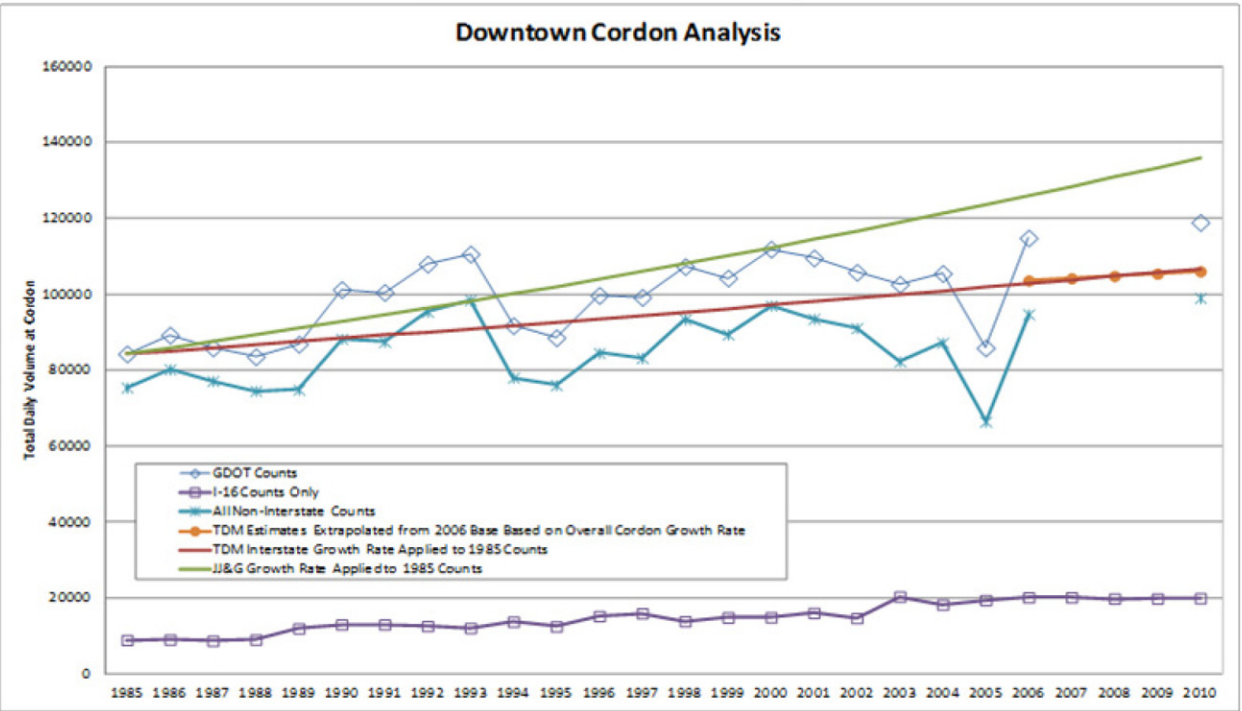
Table Two- Cutline Analysis

GDOT/CORE MPO Travel Demand Model Downtown Savannah Cutline Analysis				
Street	2006 Volume	2035 Volume	Absolute Growth	Annual Growth Rate
Bay	25,100	30,434	21.25%	
Broughton	7,169	8,186	14.19%	
Oglethorpe	13,562	17,407	28.35%	
Liberty	11,906	13,056	9.66%	
Taylor	450	1,874	316.44%	
I-16 EB	9,568	12,246	27.99%	
Gordon'	2,194	2,538	15.68%	
Gwinnett	6,389	7,531	17.87%	
Park	34	20	-41.18%	
Montgomery	8,712	9,282	6.54%	
Whitaker	5,863	6,507	10.98%	
Drayton	6,813	7,640	12.14%	
Abercorn	5,810	5,921	1.91%	
Overall Cut Line	103,570	122,642	18.41%	0.5850%
I-16 Only	19,955	26,202	31.31%	0.9440%
JJ&G Study				1.9300%

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The results of the cordon analysis were compared to historical traffic counts and the 2008 JJ&G forecast in Figure 4.

Figure 4- Downtown Cordon Analysis



The JJ&G growth rates used in the 2008 study, depicted by a green line, appear to be considerably higher than historical traffic growth rates (blue line), or travel demand model estimates (orange line). The apparent long term growth trend corresponds most closely with the rate of growth estimated for I-16 in the travel demand model. For this reason, and since no regionally significant committed developments are known to exist in the immediate study area, a growth rate of 0.95% per year was applied to base year turning movement counts to simulate 2035 conditions in the Synchro model.

Future Conditions

Under the No Build scenario, intersection congestion can be expected to worsen gradually over time, as illustrated in Table Three.

Table Three- 2035 No Build Level of Service

Key Intersections	2035 No Build			
	a.m. peak		p.m. peak	
	Delay (sec)	LOS	Delay (sec)	LOS
MLK Jr Blvd @ I-16 Off-Ramp W Gaston St	17.4	B	11	B
MLK Jr Blvd @ I-16 On-Ramp Taylor St	6.1	A	20.6	C
MLK Jr Blvd @ W Liberty St	22.1	C	70.4	E
MLK Jr Blvd at Gwinnett St	9.3	A	19.8	B
Montgomery St at Liberty St	15	B	24.9	C
Gwinnett St at W Boundary St/I-16 SB On-Ramp	16	B	19.8	B
Gwinnett St at W Boundary St/I-16 NB Off-Ramp	13.5	B	10	A

SYNCHRO ANALYSIS

I-16 EXIT RAMP REMOVAL PROJECT

SAVANNAH GEORGIA

City of Savannah

Chatham County

Metropolitan Planning Commission

CORE Metropolitan Planning Organization

Savannah Development & Renewal Authority

If the Preferred Concept is implemented, traffic patterns will shift as motorists seek the most efficient paths to their destinations. Overall, 35 to 52 percent of traffic currently traveling I-16 east of Gwinnett Street can be expected to divert to Gwinnett Street depending upon the direction and time of day based on analysis of forecasted traffic and available capacity. It is assumed that these diverted trips will use MLK, Jr. Blvd. and Montgomery Street in equal proportions, and that Montgomery Street will be restored to two-way traffic.

Table Four- 2035 Preferred Concept Level of Service

Key Intersections	2035 Concept 3			
	a.m. peak		p.m. peak	
	Delay (sec)	LOS	Delay (sec)	LOS
MLK Jr Blvd @ I-16 Off-Ramp W Gaston St	26.4	C	29.7	C
MLK Jr Blvd @ I-16 On-Ramp Taylor St	5.2	A	6.4	A
MLK Jr Blvd @ W Jones St	2.9	A	6.3	A
MLK Jr Blvd @ W Liberty St	23.8	C	43.1	D
MLK Jr Blvd at Gwinnett St	32.3	C	64.2	E
Montgomery St at Liberty St	69.2	E	38.1	D
Montgomery St at W Gaston St	15.1	B	23.9	C
Montgomery St at Gwinnett St	11.2	B	16	B
Gwinnett St at W Boundary St/I-16 SB On-Ramp	14.8	B	17.5	B
Gwinnett St at W Boundary St/I-16 NB Off-Ramp	50.7	D	12	B

PARKING

New on-street parallel parking is proposed on at least one or both sides of all new streets resulting in approximately 370 new parking spaces. Additionally, approximately 45 new parking spaces will be created on MLK, Jr. Blvd.

Studies have shown that on-street parallel parking spaces have a considerably higher turnover than off-street surface and parking lots. On-street parking is also a traffic calming measure and often results in lower vehicle speeds making a safer environment for all users.

BICYCLE AMENITIES

The Preferred Concept is designed to create local, low speed streets in which both bicyclists and automobiles can safely share. There may be opportunities to create dedicated bicycle lanes on more densely traveled streets.

PEDESTRIAN AMENITIES

The Preferred Concept is designed to maximize pedestrian amenities by providing sidewalks on all new streets, restoring sidewalks on existing streets, requiring buildings to be built at the zero lot line, and provisions for tree lawns and landscaped medians. Approximately 22,000 linear feet of new sidewalks will be created through the Preferred Concept.

TRANSIT

Opportunities for transit will be provided on all new streets. In addition to extending CAT bus service into the area, the opportunity for a rapid bus system to other parts of the County, such as the airport, may be considered. Additionally the opportunity for restoration of the streetcar line on MLK, Jr. Blvd. will be incorporated into the proposed design.

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A photograph of West Broad Street (now MLK, Jr. Blvd.) at Gwinnett Street in 1944, shows shared use by pedestrians, automobiles, bicycles, transit, and on-street parking.

TRANSPORTATION RECOMMENDATIONS

The results of this initial analysis suggest that it would be potentially feasible from a traffic operations perspective to replace the current terminus of I-16 with Concept 3, and return Montgomery Street to two-way operation. Based on these findings, it is recommended that the project be carried forward into the next phase, which will include a full interchange modification report (IMR). During the IMR, a detailed project level traffic analysis will be required to meet state and federal requirements. At that time, options will be explored to determine what practical improvements can be made to alleviate potential congestion.

It is further recommended that opportunities for transit expansion be explored in more detail in conjunction with the next phase of the study.

AMENITIES & RECOMMENDATIONS