I. Introduction

Ghyabi & Associates (G&A) was retained to monitor the current traffic and air quality conditions in Downtown Jacksonville. Such monitoring is required under the development orders that established the three Developments of Regional Impact (DRIs) for Downtown Jacksonville. The purpose of the DRIs was to facilitate flexibility of development within the DRI boundaries. When the DRIs were approved in the early 1980s, Downtown Jacksonville was poised for considerable redevelopment. In addition, the City of Jacksonville, the Jacksonville Transportation Authority and the Florida Department of Transportation were planning major roadway improvements that would serve the Downtown area.

Downtown Jacksonville is bisected by the St. Johns River, with most of the land area on the north side of the river. On both sides of the river, the land uses are principally office, with insurance and banking being the major business activities. On the south side of the river, Baptist Medical Center, one of four major medical facilities in the City, has continued to grow and prosper. Previously vacant properties have been developed or have developments in the approval phases. In addition to offices, hotels and restaurants have been built.

On the north side of the river, two separate DRIs were approved. These were known as the North-Side East and the North-Side West. The development in both these areas has principally been commercial offices, but large public facilities are also represented. In recent years, there has been a resurgence of housing, both as apartments and condominiums. A number of interesting conversions of older buildings has taken place, the largest of which is The Carlington with 100 units. This was formerly the Roosevelt Hotel and was previously used for a period as a retirement home. It has stood vacant for number of years. Similarly, the building now known as 11 East, sits on the corner of Main and Forsyth streets. For a number of years this building was home to the American Heritage Life Insurance Company. Similarly, this building has been vacant for many years before being converted to apartments.

Since the DRIs were approved, major transportation improvements include the following:

- Fuller Warren Bridge replacement. The previous four-lane bascule bridge has been replaced by an eight-lane fixed facility.

- The Acosta Bridge, formerly a three-lane lift bridge was replaced with a six-lane fixed bridge.

- The Skyway has been completed, providing 2 ½ miles of automated guideway transit and associated off-street parking. As part of the Skyway development, the JTA built a new intermodal station just to the south of the Florida Community College at Jacksonville providing convenient connections between the bus and skyway systems.

- I-95, south of the Fuller Warren Bridge to the County Line has been widened to six lanes.

- I-10 between I-95 and I-295 has been widened to six lanes

- The JTA also operates the Downtown Trolley system. This provides bus transport, in vehicles that resemble electric streetcars, between parking lots and the center of Downtown and also circulation in the Downtown area with connections to the Skyway.

Other major roadway improvements are currently being planned or designed. These include:

- Widening of I-95 north of the Fuller Warren Bridge, including the construction of collector-distributor roads

- Replacement of the Mathews Bridge.

The principal tasks in this monitoring report include the evaluation of traffic movements at various critical locations and the calculation of the amount of development that has occurred since the last monitoring report and the amount of new construction that can be approved under the terms of the DRI.

Traffic counts were undertaken at six-critical locations and tube counters were placed at six other locations to determine the actual traffic using the major Downtown roadways. Air quality analyses are based on the intersection delays. Carbon monoxide is the principal local pollutant resulting from traffic delays that cause vehicles to idle for long periods.

In determining the total development that has occurred since the last report, use was made of two sources of data. Both data sets are kept by the Department of Planning and Development. The first source is the record of developments kept by the Concurrency Management System. These records show development that will require review of civil engineering drawings. The other source of data is the Geographical Information Systems group that keeps information on building permits. These two sources of data were compared to ensure completeness of the analysis. The data are to be found in Appendix 6.

II. Traffic Counts

After consultation with the Downtown Development Authority (DDA), Florida Department of Transportation (FDOT) and the City of Jacksonville Air Quality Branch (AQB), G&A undertook traffic counts for two hours in the morning peak and two in the afternoon peak on November 20, 2003 at the following locations (see figure 1):

- Bay Street/Broad Street
- Bay Street/Main Street
- Bay Street/Jefferson Street
- Forsyth Street/Jefferson Street
- Adams Street/Main Street
- Riverside Avenue/Rosselle Street

AM Peak Turning Movements are shown in figure 2; PM Peak Turning Movements are shown in figure 3. In addition, 24-hour tube counts were undertaken on November 20, 2003 at:

- Broad Street, north of Bay Street
- Jefferson Street, north of Bay Street
- Main Street, north of Bay Street
- Ocean Street, north of Bay Street
- Bay Street, east of Broad Street
- Forsyth Street, east of Broad Street

The results of these counts are shown in appendices 1 and 2 and summarized below:

Table 1— G&A Counts

Location	2003 Counts
Broad Street	11,806
Jefferson Street	7,721
Main Street	16,880
Ocean Street	11,131
Bay Street	15,169
Forsyth Street	12,915

Figure 1: Traffic Counts Location Map

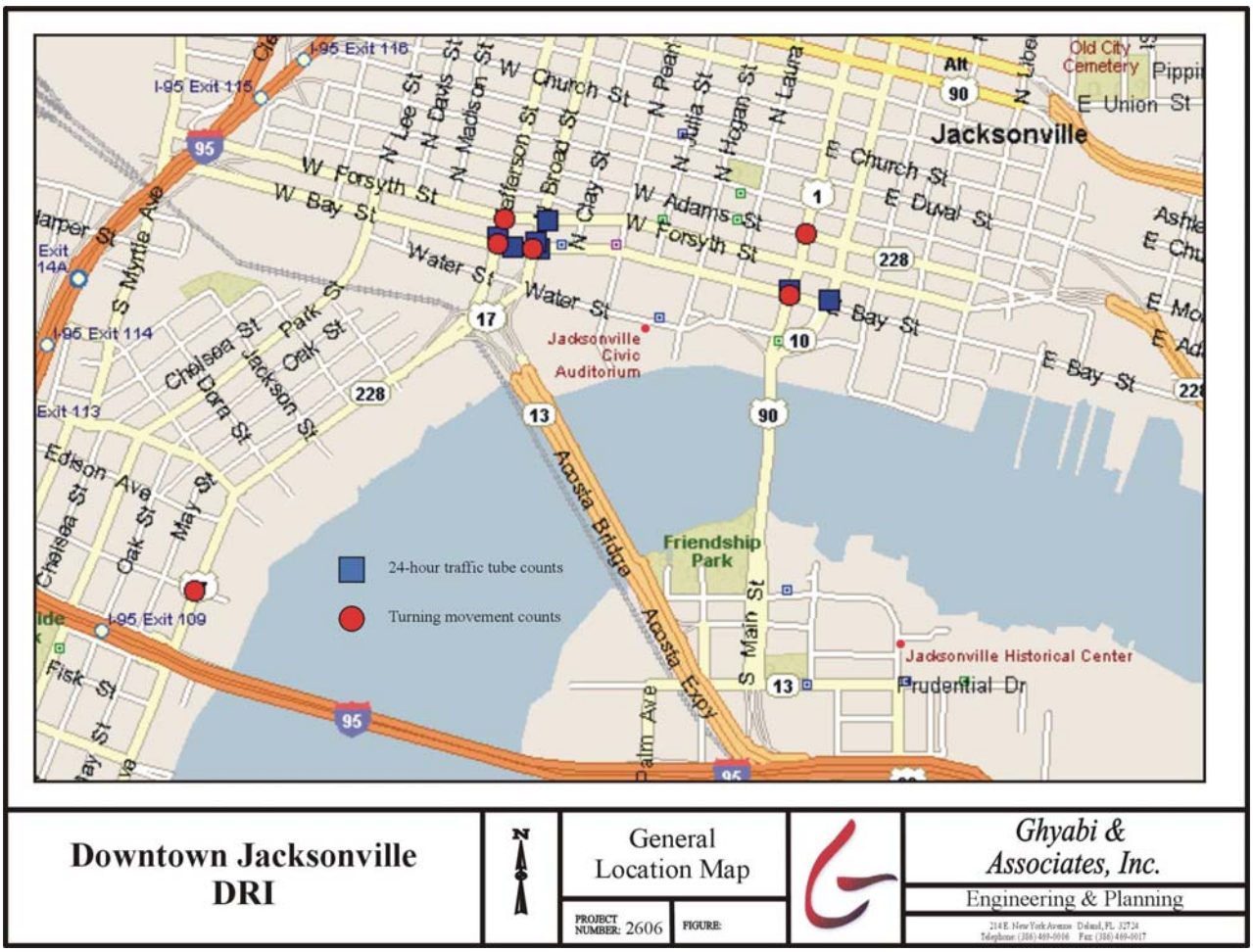


Figure 2: Existing AM Peak Turning Movements

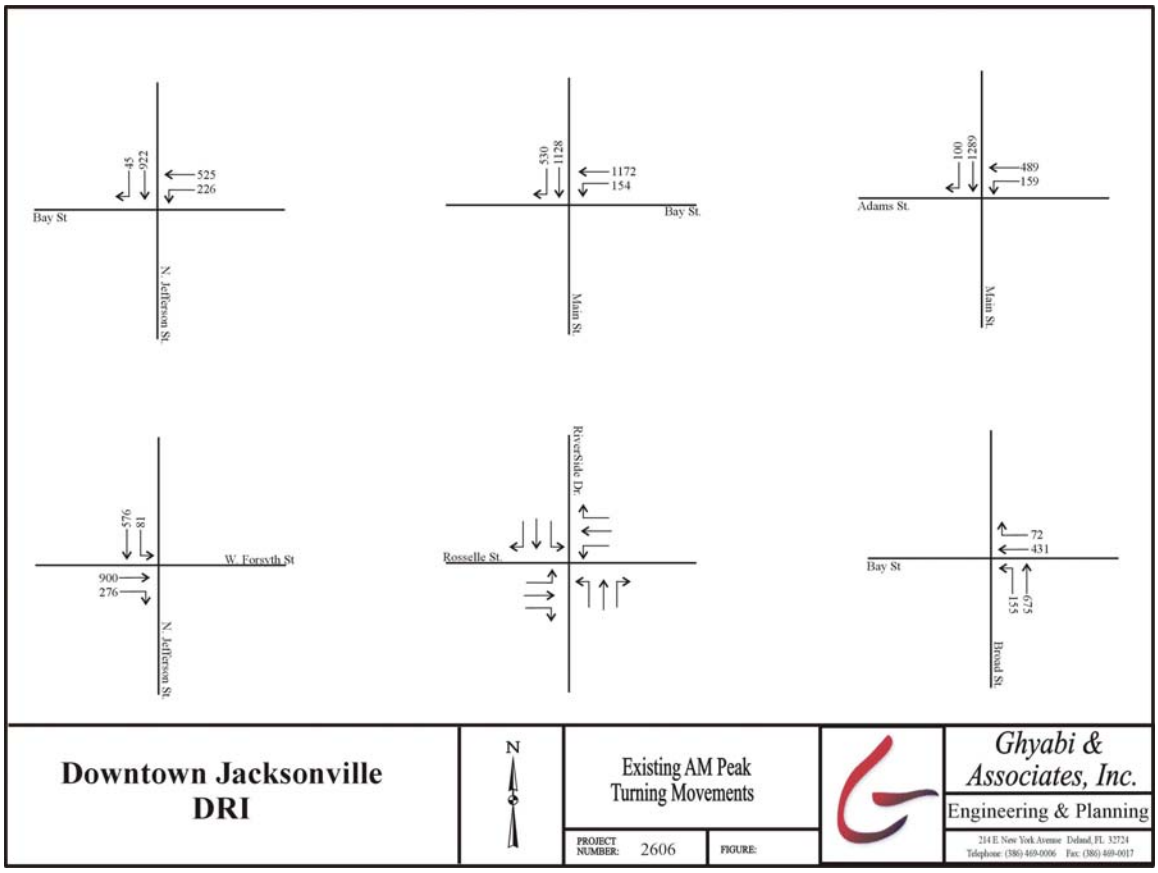
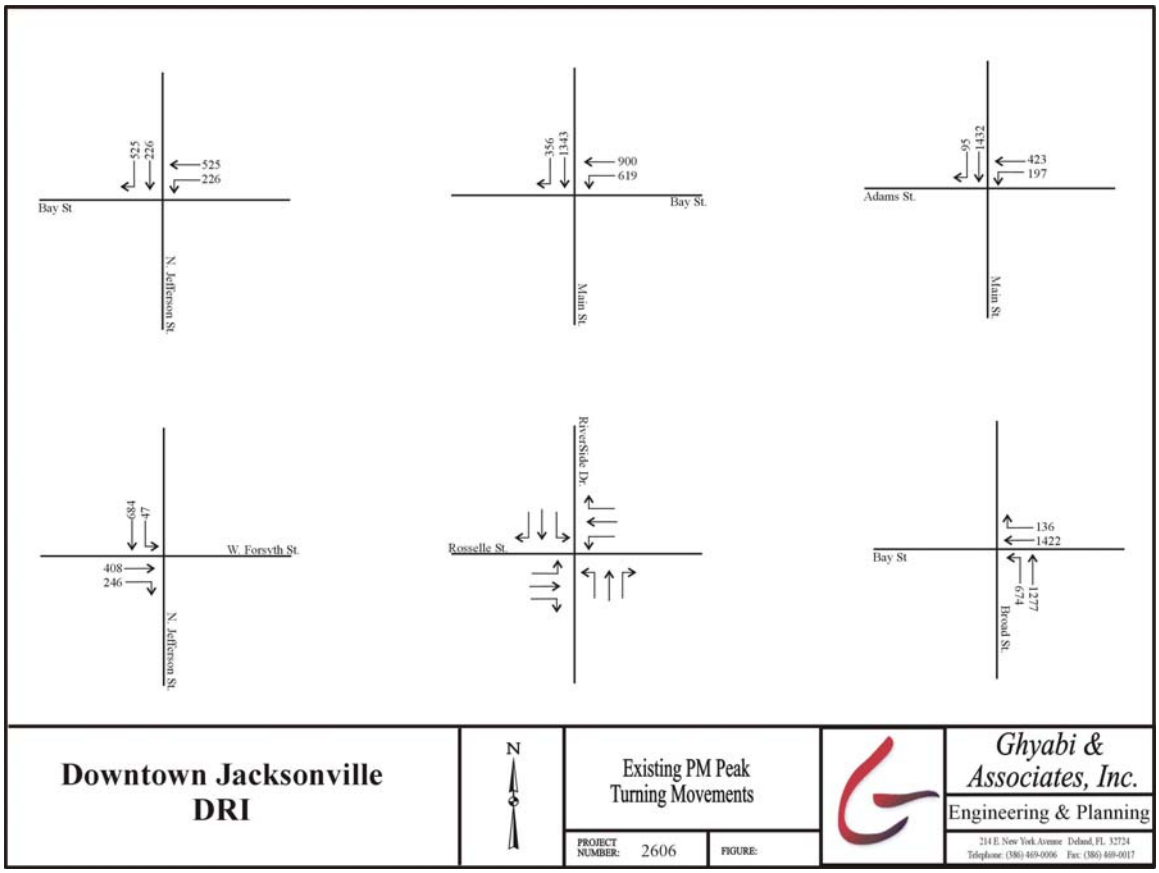


Figure 3: Existing PM Peak Turning Movements



III. Traffic Projections

Traffic projections for various locations in the Downtown area were prepared using historical traffic counts obtained from the First Coast MPO. The First Coast MPO was able to supply traffic counts from as far back as 1990 for most locations. For counts undertaken by the City of Jacksonville, data for 2003 are available. On State roads, where the counts are undertaken by the Florida Department of Transportation, the latest available counts are 2002.

In each case, projections through 2004 were calculated using simple linear regression, based on the historical counts. A straight-line projection was used to forecast the 2004 traffic. In a number of cases, the trend line is showing a reduction in traffic. Since the Downtown area is fairly stable, a downward trend in some locations is to be expected. In cases where data points are missing, the regression analysis encompasses only such points as are available.

Appendix 3 shows the historical data, the projections for one or two years as appropriate and the growth rate for one year, 2003 through 2004. Projected values are shown in italics. The growth rates are also shown graphically in Figure 4. In Figure 4, negative growth rates are shown in red. The growth rates reflect the shifting traffic patterns resulting from construction activities. For example, traffic on the Acosta Bridge is showing a growth of 5.3%, while the Fuller Warren is growing by 1%. This is offset by a reduction on the Main Street Bridge of 2.8%. Bay and Forsyth streets are both showing an increase in traffic, while Adams Street is showing a reduction. Where motorists have a choice of using different parallel streets to complete a journey, some significant variations from year to year are not unexpected.

Table 3 shows that the total traffic crossing the Downtown bridges rose from 309,900 in 2002 to 331,298 in 2003, an overall growth rate of 6.9%. The projected traffic in 2004 is 335,774, a further increase of 1.4%.

Table 3—Downtown Bridge Crossings

	AADT		
	2002	**2003**	**2004**
Acosta Bridge	48,500	55,751	58,694
Main Street Bridge	21,900	31,549	30,654
Mathews Bridge	66,500	76,536	77,258
Fuller Warren Bridge	124,000	115,468	116,602
Hart Bridge	49,000	51,994	52,566
Total	309,900	331,298	335,774

Insert Figure 4: Projected Growth Rates

11 X 17

IV. Projection of Traffic Using JUATS Model

In addition to forecasting traffic for the short term using regression analyses as discussed in Section III above, G&A used the Jacksonville Urbanized Area Transportation Study (JUATS) model to forecast the future traffic flows on the major streets in Downtown Jacksonville. The JUATS model has a base year of 1998. That is to say that the model was based on socio-economic and traffic data that were current in 1998 when the model was calibrated and validated. The model is used to forecast traffic for the year 2025.

On September 5, 2000, residents across Jacksonville turned out at the polls to approve The Better Jacksonville Plan as a blueprint for Jacksonville's future. The Better Jacksonville Plan is a $2.25 billion comprehensive growth management strategy that provides road and infrastructure improvements, environmental preservation and targeted economic development, and new and improved public facilities. The Plan is funded through a half-penny sales tax and by leveraging existing revenue sources.[1]

While the Better Jacksonville Plan provides funding for many transportation improvements, it also has allowed the development of major public facilities in the Downtown area. The most significant change to Downtown traffic is the development of the Courthouse site. This has resulted in the following changes that were in place when the traffic counts for this project were undertaken.

Table 4-- Duval County Courthouse Associated Traffic Circulation Changes[2]

1.	Monroe Street—Close from Broad Street to Julia Street
2.	Clay and Pearl Street—Close from Adams Street to Duval Street
3.	Julia Street—Reverse 1-way direction from Northbound to Southbound from State Street to Bay Street.
4.	Adams Street—Add 1 lane (for total of 3 through lanes) from Broad Street to Pearl Street by using the parking lane during peak hours
5.	Forsyth Street—Add 1 lane (for total of 3 through lanes) from I-95 to Pearl St. by using the parking lane during peak hours
6.	Pearl Street—Change from 1-way Southbound to 2-way from Forsyth St. to Adams St. and Duval St. to Ashley St.

G&A made the changes to the JUATS model shown in Table 4 before running it for 2005. In addition G&A, under contract to the Florida Department of Transportation, studied the area of the Convention Center that is to be developed as the Jacksonville Terminal Center. G&A made some minor changes to the model in this area to reflect the proposed changes.

The JUATS model output for 1998 was checked against the traffic counts recorded in that year and the results are shown in Table 5.

[1] http://www.betterjax.com/

[2] Duval County Courthouse Traffic Impact Study, King & Robinson, May 2003, Table 3

Table 5—JUATS Model Projections and Counts

	1998		2025
Street	**Counts**	**Model**	**Model**
Broad	7,419	23,652	21,475
Jefferson	5,042	19,874	15,949
Main	17,500	17,241	14,410
Ocean	14,500	14,143	17,175
Bay	8,600	14,706	19,932
Forsyth	13,252	12,937	15,368

Table 5 shows that in this part of Downtown Jacksonville, the model generally gives traffic flows that are in excess of the counts in 1998. In the case of Broad and Jefferson streets, the difference is so great that the JUATS model values cannot be used with confidence. It in generally understood, that where there are a number of parallel routes, the model may not give reliable readings. It should be noted that in 2005, the model projections are less than those for 1998. On Main Street, the 2025 forecast traffic is less than the 1998 observed traffic. While the model can give an overall picture of the magnitude of traffic growth over a period, it is not reliable for forecasting the flows on parallel Downtown streets. The output from the model for 1998 and 2025 is shown in Appendix 4.

V. Identification of New Land Uses and Development Opportunities

Jacksonville Downtown projects completed and pending are illustrated in Figure 5 (see Appendix 5 for a listing of projects). Trip generation rates for selected development opportunities are as follows:

	Parcel No.	ITE Code	Land Use	Rates		Units	Size	Total Trips
				Daily	PM Peak			
Dialysis Clinic	105	630	Clinic	31.45	5.18	SF	18,000	566
	Total						*18,000*	*566*

Figure 5: Jacksonville Downtown Projects

VI. Annual DRI Report 2000 - 2002

Building permit data for the three Developments of Regional Impact areas in Planning District 1, for the years 2000 – 2002, was compiled and summarized from the respective City of Jacksonville Building Permit Reports. All relevant figures were evaluated and the aggregate data is presented in the Annual DRI Report.

TAZ	Recreational	Religious	Institutional	Industrial	Office	Other	Garage	Educational	Retail/Svc	Utilities	None
2000											
1			625		2,400						
2					100						
3					26,100						
4					25,660				200		
5					2,200						
6					120						
66					7,534		169,238				371,620
70					288	1,700					
94						5,600					
96					575						
103					4,025						
104	4,080										
2001											
1			21,830	6,000	7,747					210	
2					607,704						
3					138,308						
4	1,700				8,969				200		
5				27,944	43,800				13,400		
8									1,500		
9					32,207						
11					22,662						
13					56,059						
19					25,500						
20					11,612						
30					5,000						
31					12,660						
32					33,283						
35					200						
36					11,800						
37					46,055				4,934		
38					2,200						
39					11,200				1,550		
48								95,768			
58										15,000	

TAZ	Recreational	Religious	Institutional	Industrial	Office	Other	Garage	Educational	Retail/Svc	Utilities	None
64					12,000						
66				200	22,600						
67				99,000							
68									5,000		
70				500	16,000	1,440					
82		120,000									
84			5,834								
95					57,000						
96					1,000					262,000	
97					135,903						
98				22,620							
104	7,561										
105				2,300	60,000						
2002											
11										10,000	
13						51,000					
14									7,200		
20						60,000		60,000			
24									9,520		
25					7,000				2,916		
26	15,000										
27					2,075						
31					4,752						
35					1,170						
37					32,364						
44					41,597						
45					2,000						
46					12,400						
51					26,254						
52					3,000						
53					600				4,250		
58					129,428						
59					38,490						
60					1,450						898
61	20,100										
63					34,112	21,645					
64											1,530
66			5,479								9,100
67								220		2,415	
81					180	2,200					
84		14,000									
86		2,128									
92		10,000									
93		4,074									

TAZ	Recreational	Religious	Institutional	Industrial	Office	Other	Garage	Educational	Retail/Svc	Utilities	None
100			1,080								
133				250	7,700						
134					483,162						
135					6,685						
378					2,100					26,733	
379					28,144				2,642		28,000
380					9,400						
382					900						
383			8,253		1,200						
TOTAL	48,441	150,202	43,101	158,814	2,326,634	143,585	169,238	155,988	53,312	316,358	411,148
Demolition 00	(4,080)				(32,900)				(4,500)		
Demolition 01	(13,300)		(5,500)	(20,000)	(12,000)				(10,500)		
Demolition 02				(12,700)	(117,740)	(46,824)	(9,100)	(60,000)	(7,000)		
NET TOTAL	31,061	150,202	37,601	126,114	2,163,994	96,761	160,138	95,988	31,312	316,358	411,148