

APPENDIX 7:

TRAFFIC ANALYSIS FOR THE APPROVED COMMERCIAL DEVELOPMENT ALTERNATIVE

The process that was utilized to model the transportation system for the Bradfordville Study Area consisted of three steps:

1. Evaluating the Wallace, Roberts, and Todd scenario regarding office, commercial, and residential uses and converting these to population, dwelling units, and employment;
2. The population, dwelling units, and employment numbers were then input into the Adopted Year 2020 Long Range Transportation Plan and the model was "run"; and
3. The output from the transportation model was then evaluated to determine the impacts that the development of the Bradfordville Study Area has on the transportation system compared to the base year network.

The first step in this process was developed as a coordinated effort between the Research Section of the Planning Department and the Consultants, and will not be discussed here. However, the second and third steps will be discussed in detail below.

Adopted Year 2020 Long Range Transportation Plan

This model has been is use by the Planning Department since its adoption in October of 1995. Contained within this model are 68 projects (*Attachment 1*) ranging from roadway widenings to intersection realignments that are assumed to be in place by the year 2020. Several of these projects are completed or under construction (*Attachment 2*). There are two important issues to keep in mind as this scenario is presented:

1. The 68 projects are "built" into the model. Without these projects the impacts from any development would have a larger impact to the transportation system;
2. The use of this transportation model reflects long range impacts. There was no Staging Plan adopted as part of the Year 2020 Long Range Transportation Plan, and therefore, no interim year analysis was completed for this evaluation.

Evaluation Methods

Level-of-Service

Each segment of the roadway system in the Bradfordville Study Area was analyzed based upon its volume to produce a level-of-service. The transportation plan uses a twenty-four (24) hour level-of-service standard for evaluating roads, as opposed to the peak-hour model used by Growth Management. This is done for several reasons. First, roadway concurrency is based on a three-year committed project window, and the twenty-year horizon that is used by the Bradfordville Study Area is not conducive for this type of analysis. Second, the concurrency

model uses intersection timings as a way of determining level-of-service, and the long range transportation model does not. Lastly, the long range model is for planning purposes only.

The level-of-service that was used for this evaluation is contained in the Level-of-Service Manual produced by the Florida Department of Transportation. Contained in this manual are several tables that are used for evaluating the roadway level-of-service. For the purposes of this project the "Generalized" (Urbanized Areas) table was used to evaluate the roads. The "Generalized" table has level-of-service standards for evaluating state and local roads. Thomasville Road is the only State of Florida road that was evaluated as part of this project, and therefore uses **Table 1** to determine level-of-service. Bannerman Road, Bradfordville Road, Kinhega Drive, and all connector roads contained with the analysis area use **Table 2** to determine level-of-service.

According to the Tallahassee-Leon County Comprehensive Plan, each roadway segment has a minimum level-of-service standard. Bannerman Road, Bradfordville Road, Kinhega Drive, and all connector roads have to be maintained at the minimum level-of-service "D". Thomasville Road is designated as a component of the Florida Intrastate Highway System (FIHS) and therefore carries a level-of-service "C" designation.

Table 1
Class I (0 to 1.99 signals per mile)

Lanes	Level-of-Service				
	A*	B	C	D**	E**
2 Undivided	N/A	10,800	15,600	16,600	16,600
4 Divided	N/A	23,500	33,200	35,000	35,000
6 Divided	N/A	35,800	49,900	52,500	52,500
8 Divided	N/A	45,300	61,400	64,400	64,400

* - Volume cannot be achieved.

** - Volumes are comparable since intersection capacities have been reached.

Table 2
Non-State Roadways (Major City/County Roadways)

Lanes	Level-of-Service				
	A*	B*	C	D	E
2 Undivided	N/A	N/A	8,600	14,600	16,000
4 Divided	N/A	N/A	19,800	31,700	33,900
6 Divided	N/A	N/A	30,800	47,800	51,000

* - Volume cannot be achieved.

There are six level-of-service designations (A-F) that are utilized for capacity analysis, with level-of-service "A" representing the best operating conditions, and level-of-service "F" representing the worst. Generally, level-of-service "A" is free-flow operations, and level-of-service "F" is complete operational breakdown. Levels B, C, D, and E represent intermediate conditions.

Speed

In addition to providing level-of-service information the "Generalized" table provides information relating to the speeds associated with each level of service. The speeds that are associated with each level-of-service increment are listed on **Table 3**.

Table 3
Level-of-Service Vs. Speed Relationship

Level-of-Service	Speeds
A	Greater than 42 MPH
B	34 MPH - 41 MPH
C	27 MPH - 33 MPH
D	21 MPH - 26 MPH
E	16 MPH - 20 MPH
F	Less than 16 MPH

Screenlines

In order to assist in determining the impact that each scenario has on the transportation system, four screenlines (**Table 4**) were established (North, South East, and West). A screenline is an imaginary line within the model that counts the number of trips that cross a particular point.

Table 4
Screenline Volumes

Screenline	Segment	Base	Approved
West	Ox Bottom Road	1,201	1,239
	Bannerman Road	2,118	2,779
	Total	3,319	4,018
South	Centerville Road	10,535	11,100
	Meridian Road	12,255	12,247
	Thomasville Road	57,574	66,133
	Velda Dairy Road	1,024	2,668
		81,388	92,148
East	Bradfordville Road	2,250	3,028
	Piscah Church Road	322	389
		2,572	3,417
North	Bull Headly	2,139	1,986
	Thomasville Road	13,751	15,885
	Kinhega Drive	7,830	7,947
	Centerville Road	1,940	1,880
	Grenville Road	167	255
		25,827	27,953

Scenario Evaluation

The evaluation of the transportation system included the Bull Run development to produce a clearer representation of what could occur to the transportation system.

Base Network (Attachment 3) - In order to determine the impacts from the Bradfordville Study Area development, a base network was developed to reflect the current development. This was accomplished by using the adopted long range transportation plan, and assumed that no other development occurred in the Bradfordville Study Area for the next twenty years.

Scenario level-of-service failures: Thomasville Road South of Kerry Forest Parkway (D); and Thomasville Road South of Ox Bottom Road (E).

Approved Scenario (Attachment 4) - The highest impact from this scenario is reflected in the northern and southern screenlines, and most notably the increase in traffic on Thomasville Road and Velda Dairy Road. However, a noteworthy change is that the traffic on Meridian Road, Centerville Road (North), and Bull Headly decreased.

Scenario level-of-service failures: Thomasville Road South of Kerry Forest Parkway (E); and Thomasville Road South of Ox Bottom Road (E).

For comparison purposes, the base year and approved scenario volumes and level-of-service conditions can be found on **Table 5**.

Table 5
Transportation Network Level-of-Service Comparison

Road	Segment	Existing Traffic	Adopted LOS	Operating Level-of-Service			
				Base	LOS	Approved	LOS
Thomasville Road	North of Kinhega Drive	9,704	C	15,680	B	21,996	B
	South of New Connector Road		C			21,745	B
	North of Remaining Bradfordville Road		C			28,846	B
	North of Bradfordville Road	9,704	C	23,217	B	28,614	B
	South of Bradfordville Road	22,461	C	35,467	C	42,450	C
	North of Kerry Forest Parkway	22,461	C	39,256	C	50,140	C
	South of Kerry Forest Parkway	23,214	C	53,487	D*	62,510	E*
	South of Ox Bottom	30,586	C	57,574	E*	66,133	E*
Bradfordville Road	West of Piscataway Church	5,621	D	675	C	1,168	C
	West of Velda Dairy Road	4,095	D	4,075	C	3,323	C
Kinhega Drive	West of Thomasville Road	7,428	D	7,872	C	7,947	C
	South of Deerlake	7,428	D	7,830	C	9,366	D
Bannerman Road	West of Thomasville Road	9,171	D	10,842	D	11,347	D
	South of Summit Ridge	9,171	D	10,938	D	11,741	D
Existing Bradfordville Road			D			975	C
Relocated Bradfordville Road			D			4,720	C
West Connector Road			D			225	C
East Connector Road			D			1,400	C

*- Does not meet level-of-service standard.