TAB 8

SUPPORTING APPENDICES

Mosaic®

TRANSPORTATION ANALYSIS

DESOTO MINE

Prepared For

MOSAIC FERTILIZER, LLC

Prepared By

LINCKS & ASSOCIATES, INC.
Engineers - Planners
Tampa, Florida

TRANSPORATION ANALYSIS

DESOTO MINE

Prepared For

MOSAIC FERTILIZER, LLC

Prepared By

LINCKS & ASSOCIATES, INC.
5023 West Laurel Street
Tampa, Florida 33607
813-289-0039
State of Florida Authorization No. EB0004638

Revised January, 2020
Revised July, 2016
February, 2013

Project No. 11131

Steven J. Henry, P.E.
P.E. No. 51555

Date

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INTRODUCTION

The purpose of this report is to provide the Transportation Analysis for the proposed mine to be located within western Desoto County along SR 70, as shown in Figure 1. This analysis was conducted in accordance with the criteria outlined in Florida Statute 380.06(24)(t), Florida Administrative Code 9J-2.045 and is consistent with the following Desoto County regulations:

- Desoto County Comprehensive Plan Traffic Circulation Element
- Desoto County Comprehensive Plan Capital Improvement Element
- Desoto County Land Development Regulation Article 5 – Concurrency Determination
- Desoto County Phosphate Mining Ordinance (Ord. #2012-06) Section 2 – Phosphate Mining Master Plan and Section 3 – Operating Permit

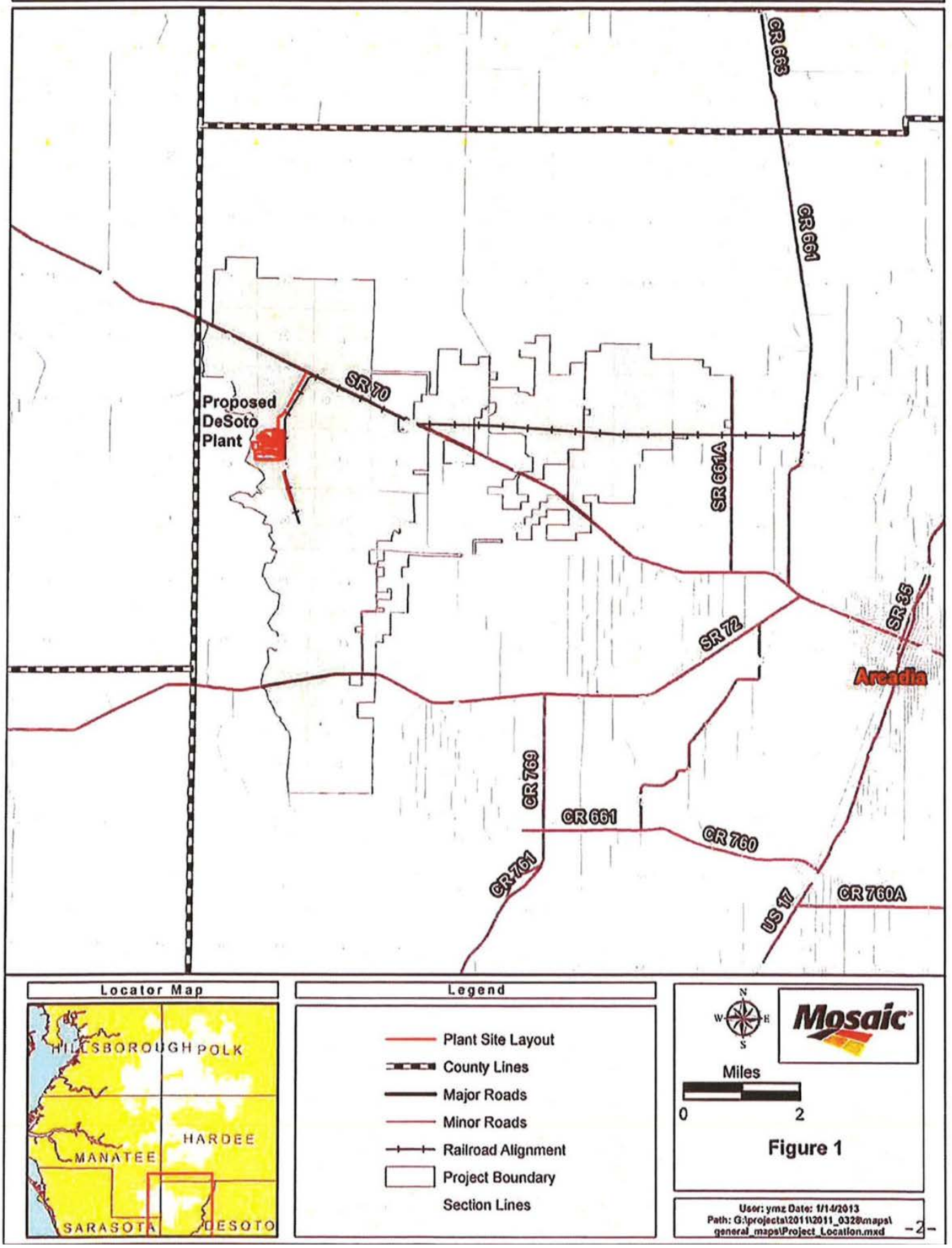
This report was conducted in accordance with the methodology outlined in the letter to Bartley Arrington, dated February 5, 2013 and the comments provided by Wade Trim, dated April 16, 2013. Both of these documents are included in the appendix of this report.

PROJECT DESCRIPTION

Mosaic Fertilizer, LLC proposes to develop the mine along SR 70 within Desoto County. The mine is to consist of the following:

- At full capacity the mine is estimated to have approximately 300 employees.
- The product from the mine is to be shipped via rail.
- The access to the main plant area is to be via SR 70.

DeSoto Mine Plant Site General Location Map



ESTIMATED PROJECT TRAFFIC

The Institute of Transportation Engineers' (ITE) Trip Generation Manual, 10th Edition, 2017, does not contain trip generation data for a mine. Therefore, the trip generation utilized in this analysis was estimated based on data from the Four Corners Mine. The Desoto Mine is proposed to operate similar to the Four Corners Mine except the product from the Desoto Mine is to be shipped via rail, whereas the product is shipped via truck from the Four Corners Mine. Therefore, the following methodology was utilized to estimate the traffic associated with the Desoto Mine:

1) AM and PM peak hour counts were conducted at the Four Corners Mine entrance road to the plant.

2) During the counts in # 1, above, the number of product trucks was documented.

3) As of the date of the counts, there were 567 employees at the Four Corners Mine of which approximately 300 employees report to work at the Four Corners plant.

4) These trip rates were applied to the projected mine employees to estimate the traffic associated with the proposed Desoto Mine.

Table 1 summarizes the peak hour trip generation for the existing Four Corners Mine.

As shown in Table 2, the Desoto Mine is estimated to attract approximately 36 trip ends during the AM street peak hour and 55 trip ends during the PM street peak hour.

PROJECT TRIP DISTRIBUTION

The following distribution of project traffic was estimated based on development in the vicinity of the mine:

TABLE 1

FOUR CORNERS MINE TRIP GENERATION
(MINE ENTRANCE ROAD TO FOUR CORNERS PLANT)

Time Period	Employees	Total (1)			Project Trucks (1)			Employee/Delivery		
		In	Out	Total	In	Out	Total	In	Out	Total
AM Street Peak Hour (8:00 AM to 9:00 AM)	300	41	40	81	22	23	45	19	17	36
PM Street Peak Hour (4:00 PM to 5:00 PM)	300	23	46	69	6	8	14	17	38	55

(1) Source: Video and machine count conducted by Lincks & Associates, Inc. on April 11, 2012, at the Four Corners Mine.

TABLE 2

DESOTO MINE TRIP GENERATION
(MINE ENTRANCE ROAD TO FOUR CORNERS PLANT)

Time Period	Employees	Employee/Delivery Trip Ends		
		In	Out	Total
AM Street Peak Hour (8:00 AM to 9:00 AM)	300	19	17	36
PM Street Peak Hour (4:00 PM to 5:00 PM)	300	17	38	55

(1) Based on estimated trip generation at the Four Corners Mine.

- 50% to and from the east (via SR 70)
- 50% to and from the west (via SR 70)

ADJACENT TRANSPORTATION FACILITIES

As shown in Figure 1, the site is located south of SR 70 and east of the Manatee/Desoto County line. SR 70 is currently a two lane, undivided facility in the vicinity of the project with a posted speed limit of 60 MPH.

According to the Desoto County and FDOT five-year work programs, there are no capacity adding improvements budgeted in the vicinity of the project.

MINE LIFE

It is anticipated mining activities will start by 2025. The mine is projected to have a 15 year life.

PERCENT LEVEL OF SERVICE DETERMINATION

Table 3 provides the determination of the percentage of the adopted level of service capacity consumed by the project traffic. As shown in Table 3, the project traffic would consume less than 5% of the adopted level of service of SR 70 in the vicinity of the project.

CONCURRENCY DETERMINATION

A concurrency evaluation was conducted for SR 70 within the vicinity of the project based on the following formula:

CLOS-ED = Surplus / Capacity

CLOS = Total Capacity at adopted level of service

ED = Existing Demand

TABLE 3

PERCENT LEVEL OF SERVICE CONSUMED

Roadway	From	To	Number of Lanes	Adopted LOS	Adopted LOS Capacity (1)	Project Traffic	Percent Consumed
SR 70	Desoto County Line	Project	2	C	790	28	3.5%
	Project	NE Pine Level Street	2	C	790	27	3.4%
	NE Pine Level Street	CR 661	2	C	1,550	27	1.7%

(1) Source: 2012 FDOT Quality/Level of Service Handbook.

Table 4 provides the concurrency analysis for the project. As shown, there is a surplus capacity within the vicinity of the project.

TABLE 4

CONCURRENCY ANALYSIS

Roadway	FDOT Count Station	From	To	Existing Traffic (1)			Capacity			Surplus/Capacity		
				EB	WB	Total	EB	WB	Total	EB	WB	Total
SR 70	0068	County Line Road	NE Pine Level Street	257	196	453	430	360	790	173	164	337
	0002	NE Pine Level Street	CR 72	389	343	732	850	700	1,550	461	357	818
	0022	CR 72	US 17	622	708	1,330	700	850	1,550	78	142	220

(1) FDOT counts - See Appendix.

APPENDIX

METHODOLOGY

Engineers
Planners

LINCKS & ASSOCIATES, INC.

February 5, 2013

Mr. Bartley E. Arrington, PE
Manager, Mine Permitting
The Mosaic Company
FishHawk Headquarters
13830 Circa Crossing Drive
Lithia, FL 33547

Re: DeSoto Mine
Lincks Project No. 11131

Dear Mr. Arrington,

The purpose of this letter is to establish the methodology to be utilized in the Transportation Analysis for the proposed mine to be located along SR 70 in Desoto County, as shown in Figure 1. In the preparation of the methodology, we have reviewed the following documents regarding any criteria that may be required to evaluate the project from a transportation standpoint.

- Desoto County Comprehensive Plan
  Traffic Circulation Element

- Desoto County Comprehensive Plan
  Conceptual Improvement Element

- Desoto County Land Development Regulations
  Article 5 – Concurrency Determination

- Desoto County Phosphate Mine Ordinance
  Section 3 – Operating Permit, Subset D – Standard for Operating Permit Issues

- Florida Statute 380.06
  Developments of Regional Impact, (24) Statute of Exemptions

- Florida Administrative Code 9J-2.045
  Transportation Uniform Standard Rule

Based on the above, we propose the following methodology to evaluate the Traffic Impacts of the project:

5023 West Laurel Street
Tampa, Florida 33607
813 289 0039 Telephone
813 287 0674 Telefax
www.lincks.com Website

Trip Generation

The Institute of Transportation Engineers' (ITE) Trip Generation, 9th Edition, 2012, does not contain trip generation data for mines. Therefore, we propose to utilize the trip generation data from the existing Four Corners Mine to establish the traffic associated with the Desoto Mine. The product from the Four Corners Mine is shipped via truck whereas the product from the Desoto Mine will be shipped via rail. Therefore, the trip generation for the Four Corners Mine will document the product traffic versus employee/deliveries. The independent variable to establish the trip generation will be employees.

Table 1 summarizes the trip generation for the Four Corners Mine and Table 2 summarizes the trip generation for the Desoto Mine.

Distribution

The distribution of the project traffic will be estimated based on residential and employment centers within the vicinity of the project.

Study Network

The study network includes the regional roadways in which the peak hour project traffic consumes 5% or more of the adopted level of service of the roadway.

Background Traffic

The following methodology will be utilized to determine the background traffic to be utilized in the analysis.

1) Lincks & Associates, Inc. will obtain/conduct PM peak hour counts along the roadways within the study network.

2) The counts will be adjusted to peak season based on the FDOT Seasonal Adjustment Factors for Desoto County.

3) The peak season peak hour traffic will be factored to the buildout year of the mine based on historical growth rates in the vicinity of the project.

Link Analysis

Link analysis will be conducted for those roadways in which the project traffic consumes 5% or more of the adopted level of service.

Intersection Analysis

Intersection capacity analysis will be conducted for the intersections along the roadways in which the project traffic consumes 5% or more of the adopted level of service of the roadways.

Improvements/Mitigation

If any improvements are required to allow the roadway(s)/intersection(s) to operate at an acceptable level of service, those improvements will be identified in the analysis.

If you have any further questions regarding this matter, please do not hesitate to contact me.

Sincerely,

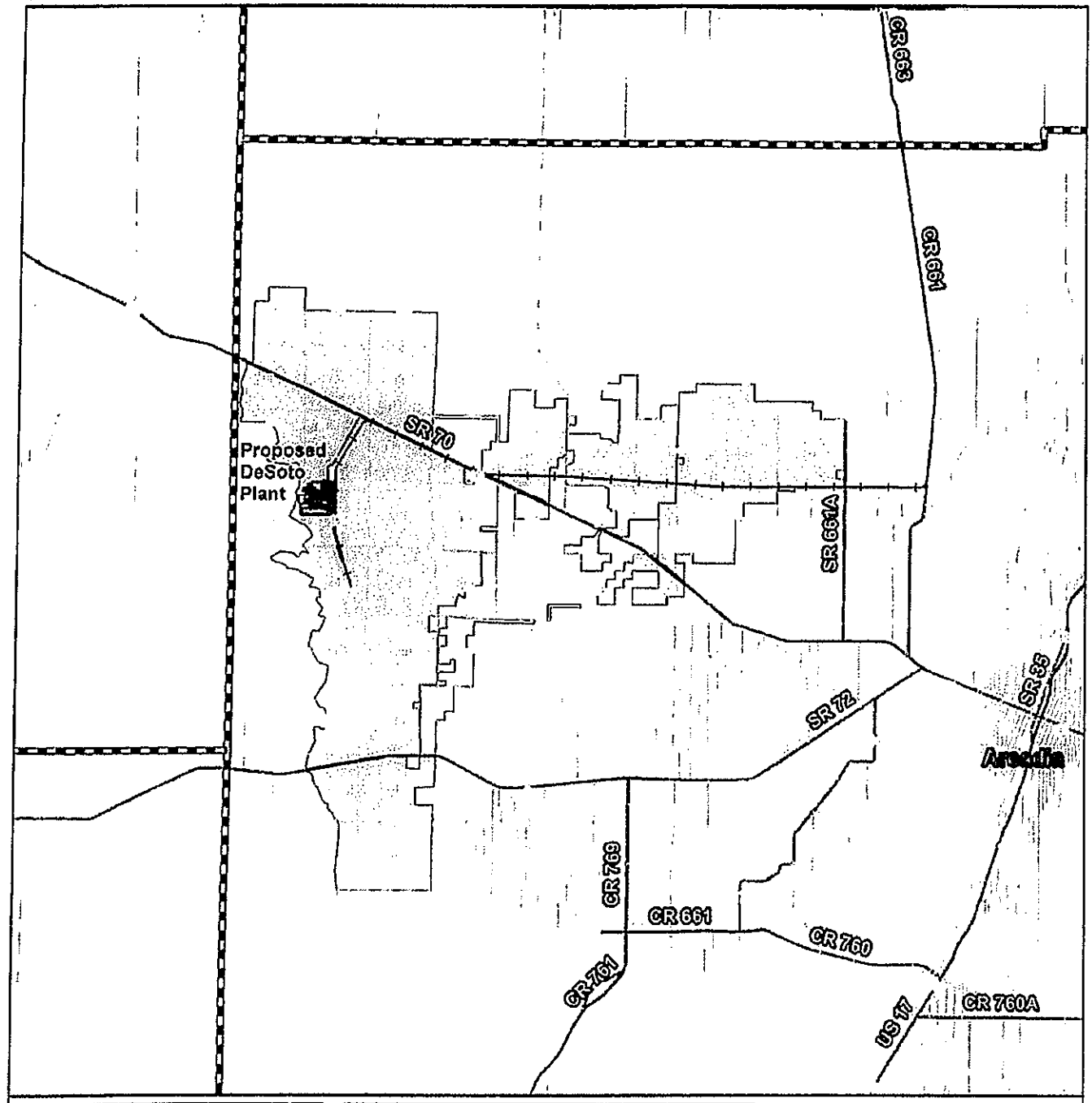
LINCKS & ASSOCIATES, INC.

Michael Martin for

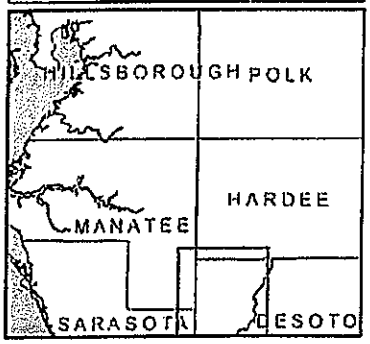
Steven J. Henry, P.E.
President

SJH/cvc

DeSoto Mine Plant Site General Location Map



Locator Map



Legend

- Plant Site Layout
- County Lines
- Major Roads
- Minor Roads
- Railroad Alignment
- Project Boundary
- Section Lines

N W E S

Mosaic

Miles

0 2

Figure 1

User: ymz Date: 1/14/2013
Path: G:\projects\2011\2011_032\mapsl general_maps\Project_Location.mxd

TABLE 1

FOUR CORNERS MINE TRIP GENERATION
[Mine Entrance Road to Four Corners Plant]

		Total (1)			Product Trucks (1)			Employee/Delivery		
Peak Hour	Employees	In	Out	Total	In	Out	Total	In	Out	Total
Generator (6-7 AM)	300	141	41	182	22	19	41	119	22	141
Street (8-9 AM)	300	41	40	81	22	23	45	19	17	36
Generator (3-4 PM)	300	45	115	160	10	15	25	35	100	135
Street (4-5 PM)	300	23	46	69	6	8	14	17	38	55

(1) Source: Video and machine count conducted by Lincks & Associates, Inc. on April 11, 2012 at the Four Corners Mine.

TABLE 2

DESOTO MINE TRIP GENERATION
[Mine Entrance Road to DeSoto Plant]

Peak Hour	Employees	Employee/Delivery Trip Ends (1)		
		In	Out	Total
Generator (6-7 AM)	300	119	22	141
Street (8-9 AM)	300	19	17	36
Generator (3-4 PM)	300	35	100	135
Street (4-5 PM)	300	17	38	55

(1) Based on estimated trip generation at the Four Corners Mine.

WADE TRIM COMMENTS

Review of DeSoto Mine
Pre-Application Document
Transportation Methodology & Analysis

Prepared by:
Wade Trim, Inc.
8745 Henderson Road, Suite 220
Tampa, FL 33634
April 16, 2013

Introduction

The Mosaic Company is proposing a new phosphate mine in western DeSoto County along SR 70. Lincks & Associates, Inc., on behalf of The Mosaic Company, prepared a pre-application transportation analysis of the proposed phosphate mine ("DeSoto Mine Pre-Application Document Transportation Methodology & Analysis" dated March 2013). Wade Trim, Inc. was tasked by DeSoto County to review the pre-application transportation analysis to assure compliance with the County's Phosphate Mining Ordinance (Ordinance 2012-06), Comprehensive Plan, and Land Development Regulations, and to assure the use of professional acceptable analysis.

The following provides comments and recommendations on the submitted pre-application transportation analysis.

Comments/Recommendations

The comments and recommendations are assembled in sequence with the information provided within the pre-application transportation analysis. Please note that the transportation analysis is comprised of a methodology letter from Steven J. Henry, P.E., Lincks & Associates, Inc. to Bartley Arrington, P.E., The Mosaic Company, dated March 5, 2013, and the actual transportation analysis. Because the methodology is also contained within the actual transportation analysis, the comments and recommendations reference back to the actual transportation analysis. These comments and recommendations may also necessitate revision to the methodology letter. As applicable, references to the appropriate County code provision or other regulatory or professionally accepted practice will be noted as part of the comment or recommendation.

Introduction – page 1

Comment: The introduction references the development of the transportation analysis consistent with the provisions of Florida Statute 380.06(24)(t) and Florida Administrative Code 9J-2.045. These references are appropriate given SR 70 is under the Florida Department of Transportation's (FDOT) jurisdiction and impacts to SR 70 from the proposed phosphate mine must be reviewed and approved by FDOT. However, the review of the transportation analysis must also be consistent with the regulations of DeSoto County.

Recommendation: Revise the introduction to also reflect consistency with the following DeSoto County regulations:

- DeSoto County Comprehensive Plan Traffic Circulation Element;
- DeSoto County Comprehensive Plan Capital Improvement Element;

- DeSoto County Land Development Regulations Article 5 – Concurrency Determination; and
- DeSoto County Phosphate Mining Ordinance (Ord. #2012-06) Section 2 – Phosphate Mining Master Plan and Section 3 – Operating Permit.

Project Description – page 1

Comment: The project description states the proposed mine will have a maximum of 300 employees at full capacity. It is important that this level of 300 employees is maintained consistently throughout the entire application process (not only within the transportation analysis) to maintain consistency in the overall analysis of the potential impacts of the proposed mine.

The project description states that the product will be shipped via rail. The submitted transportation analysis has no information regarding this proposed rail service and its impact on the county's transportation system. Section 2.B.19, DeSoto County Phosphate Mining Ordinance (Ord. # 2012-06), which identifies the analysis required for the review and approval of the Phosphate Mining Master Plan, states (***emphasis added***):

> *"A transportation analysis, to include estimates of vehicular and **rail traffic** and any other mode of transportation of materials and products leaving the applicant's property, and of raw materials entering the applicant's property, with emphasis given to any disruption of normal traffic movements caused by, and **any increase in rail movements**, vehicular traffic and **road deterioration** resulting from, the proposed phosphate mining activities."*

The submitted transportation analysis only addresses the potential impact of vehicular traffic. It is silent to the impact of rail activity and potential road deterioration. Consequently, the submitted transportation analysis is not consistent with the requirements of the DeSoto County Phosphate Mining Ordinance.

Recommendation:

- Maintain consistency of 300 employees throughout the application.
- Revise transportation analysis to address the impact of rail on the county's transportation network. It is understood that the applicant will be pursuing the permitting of new rail crossings with FDOT and the County. It is acceptable to utilize the analysis prepared for the permitting of the new rail crossings to meet this requirement.

- Revise the transportation analysis to address existing road conditions (physical) and potential impact of project traffic to the road conditions.

Estimated Project Traffic – pages 1-5

Comment: The use of trip generation data from the existing Four Corners Mine to estimate trip generation from the proposed DeSoto Mine and the results of Table 1 and Table 2 are acceptable professional practices given the absence of trip generation data from the Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition, 2012. However, as stated above, there is no information provided regarding the amount of anticipated rail traffic.

Recommendation: Provide information regarding the anticipated amount of rail traffic for analysis as stated above.

Project Trip Distribution – page 6

Comment: The methodology to distribute traffic based on the location of residential and employment centers in relation to the project site is an acceptable professional practice. However, there is no analysis showing how the 50%/50% split was calculated.

Recommendation: Provide analysis showing how the 50%/50% split was determined.

Adjacent Transportation Facilities – page 6

Comment: No comments. Acceptable as written.

Recommendation: No recommendations.

Mine Life – page 6

Comment: Acceptable as written.

Recommendation: No recommendations.

Percent Level of Service Determination – pages 6-8

Comment: The analysis includes a calculation of the proportion of the capacity of SR 70, based on the adopted level of service (LOS) from the County's Comprehensive Plan, that is consumed by the additional proposed mine trips. The methodology utilized relies on the Development of Regional Impact (DRI) Transportation Rule (F.A.C. 9J-2.045) that states if a proposed project consumes less than 5% of the

level of service capacity of a road, then no analysis is required. Although phosphate mines are no longer considered DRIs [F.S. 380.06(24)(t)], the fact that the proposed mine is located on SR 70, which is under the jurisdiction of FDOT and is part of the State's Strategic Intermodal System (SIS) as an "Emerging SIS Facility", FDOT is required to assess the impact of the proposed mine on SR 70 based on the DRI Transportation Rule. However, the County still retains the right to implement its own local regulations. The County's procedure for determining concurrency is within the County Land Development Regulations (Article 5 – Section 5101). The County's procedure is a simple calculation of:

(CLOS + AC) – (ED + OAD) = Surplus/Deficit
CLOS = Total Capacity at Adopted Level of Service
AC = Additional Capacity from Committed Improvements
ED = Existing Demand
OAD = Other Approved Demand Unbuilt Developments

Given the current conditions in the County, the equation for this analysis can be simplified to:

CLOS-ED = Surplus/Capacity
CLOS = Total Capacity at Adopted Level of Service
ED = Existing Demand

If the results of this equation confirm there is surplus capacity, then it is fully confirmed no additional analysis is required. If a deficit is determined, then discussions should occur between the County and the applicant regarding appropriate mitigation that may be needed.

In review of Table 3 – Percent Level of Service Consumed, the following items should be further explained, revised or corrected:

> The limits of the transportation analysis are from the DeSoto County line east to CR 661. Please provide explanation as to the termination of the analysis at CR 661 and not extending to US 17.
>
> The Adopted LOS Capacity within Table 3 (1,550) is based on the FDOT's Peak Hour Two-Way Direction Generalized Table. However, Objective 1.1 and its policies of the Traffic Circulation Element of the County's Comprehensive Plan, which adopts the LOS for roads, are based on Peak Hour Peak Direction LOS standards. Also, the area type assumed for the LOS capacity within Table 3 is based on the "Developed Area less than 5,000" classification with FDOT's Generalized Table. However, the County's Traffic Circulation Element of the Comprehensive Plan, in Table II-2 of the Data and Analysis, states the current classification of SR 70 from the County line to CR 661 as "Rural Undeveloped". Table II-3 of the

Data Analysis, which reflects anticipated future 2030 conditions, does upgrade the classification for this segment of SR 70 to "Rural Developed" (similar to the FDOT "Developed Area less than 5,000"). Based on a review of the existing development pattern along this corridor, it is more appropriate to analyze the segment of SR 70 from the County line east to NW Pine Level Street as "Rural Undeveloped" and maintain the "Developed Area Less than 5,000" classification on the segment from NW Pine Level Street to the eastern terminus of the analysis.

Recommendation: The following items should be further explained, revised or corrected:

- Provide calculation consistent with County Land Development Regulations (Article 5 – Section 5101): CLOS-ED = Surplus/Capacity.

- Explain justification of terminating the analysis at CR 661 and not extending to US 17.

- Revise the Adopted LOS Capacity within Table 3 to reflect capacity based on the FDOT 2012 Quality/Level of Service Handbook Peak Hour Directional Generalized Table with the classification from the County line to NE Pine Level Street as "Rural Undeveloped" (430 vehicles) and the remainder of the analysis segment as "Developed" (850 vehicles).

General Items

A unique aspect of the submitted transportation analysis for the proposed DeSoto Mine is the timing of the actual development and operation of the mine. The analysis states that the mine is proposed to start activities in 2021 and continue through 2036. This 13 year gap from the 2013 transportation analysis to start of impact in 2021 is somewhat a cause of concern given the potential for unforeseen changes, particularly outside the jurisdiction of the County, on SR 70 (i.e. development activities in Manatee County). It would be beneficial to include a condition as part of the development order for the Phosphate Mine Master Plan to require the transportation analysis be updated within 12 months prior to the start of operation of the mine in 2021 and again updated within 12 months prior to the renewal of each of its five (5)-year operating permits. These updates would then reflect the actual background traffic conditions at the time of operation and also document the actual impact of the mine operation during its mine life.

It appears from the submitted transportation analysis; the only connection point for vehicular access is along SR 70. Because SR 70 is under the jurisdiction of FDOT, any connections to SR 70 are fully under the permitting jurisdiction of FDOT. As part of the connection permitting with FDOT, any turn-lanes or deceleration or acceleration lanes required to protect the operational safety of SR 70 will be determined and permitted by FDOT.

END OF COMMENTS AND RECOMMENDATIONS

FOUR CORNERS MACHINE COUNTS

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: EB/WB
DATE: Apr 11 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>5 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	1	3	0	0	0	0	0	10	5	0	0	0	0	19
1:00 AM	0	0	4	0	0	0	0	0	2	0	0	0	0	0	6
2:00 AM	0	0	4	0	0	0	0	0	1	0	0	0	0	0	5
3:00 AM	0	0	3	0	0	0	0	0	2	0	0	0	0	0	5
4:00 AM	0	3	12	0	0	1	0	0	8	1	0	0	0	1	26
5:00 AM	1	26	17	0	11	3	2	2	29	1	0	0	0	3	95
6:00 AM	2	71	46	0	17	2	0	4	34	0	0	0	1	5	182
7:00 AM	0	26	13	0	16	2	2	1	35	1	0	0	0	1	97
8:00 AM	0	7	11	0	11	8	3	2	38	1	0	0	0	0	81
9:00 AM	0	3	11	2	4	5	0	5	29	0	0	0	0	1	60
10:00 AM	0	7	15	3	13	6	1	0	22	0	0	0	1	0	68
11:00 AM	0	5	15	0	13	1	0	5	28	1	0	0	0	1	69
12:00 PM	3	9	20	3	8	4	1	4	21	0	0	0	0	15	88
1:00 PM	2	11	10	3	5	0	2	1	16	1	0	0	0	15	66
2:00 PM	2	10	10	2	12	5	0	8	11	0	0	0	0	19	79
3:00 PM	6	50	46	0	16	2	2	2	14	1	0	0	0	21	160
4:00 PM	1	27	18	1	4	1	0	0	13	0	0	0	0	4	69
5:00 PM	0	30	21	0	5	3	0	0	2	0	0	0	0	3	64
6:00 PM	0	6	12	0	3	1	0	0	0	0	0	0	0	0	22
7:00 PM	0	2	5	3	1	2	0	0	0	0	0	0	0	0	13
8:00 PM	0	1	3	0	1	0	0	0	0	0	0	0	0	0	5
9:00 PM	0	1	4	0	0	0	0	0	0	0	0	0	0	0	5
10:00 PM	0	1	3	0	0	0	0	0	0	0	0	0	0	0	4
11:00 PM	0	1	4	0	1	1	0	0	0	0	0	0	0	0	7
Day Total	17	298	310	17	141	47	13	34	315	12	0	0	2	89	1295
Percent	1.3%	23.0%	23.9%	1.3%	10.9%	3.6%	1.0%	2.6%	24.3%	0.9%	0.0%	0.0%	0.2%	6.9%	
ADT 1296															
AM Peak Volume	6:00 AM 2	6:00 AM 71	6:00 AM 46	10:00 AM 3	6:00 AM 17	8:00 AM 8	8:00 AM 3	9:00 AM 5	8:00 AM 38	12:00 AM 5			6:00 AM 1	6:00 AM 5	6:00 AM 182
PM Peak Volume	3:00 PM 6	3:00 PM 50	3:00 PM 46	12:00 PM 3	3:00 PM 16	2:00 PM 5	1:00 PM 2	2:00 PM 8	12:00 PM 21	1:00 PM 1				3:00 PM 21	3:00 PM 160

Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

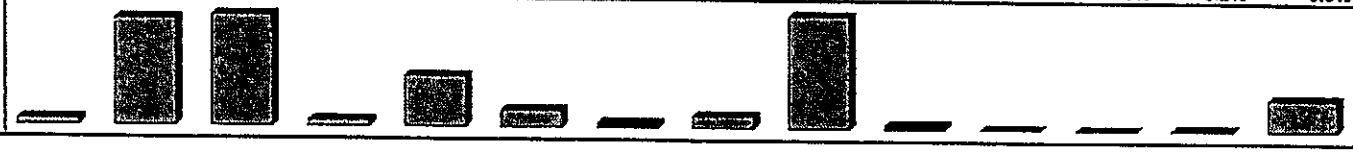
Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: EB/WB
DATE: Apr 11 2012 - Apr 11 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	17	298	310	17	141	47	13	34	315	12	0	0	2	89	1295
Percent	1.3%	23.0%	23.9%	1.3%	10.9%	3.6%	1.0%	2.6%	24.3%	0.9%	0.0%	0.0%	0.2%	6.9%	
ADT 1295															



Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: EB/WB
DATE: Apr 11 2012 - Apr 11 2012

Start Time	Mon	Tue	Wed 11-Apr-12	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			19			19			19	
1:00 AM			6			6			6	
2:00 AM			5			5			5	
3:00 AM			5			5			5	
4:00 AM			26			26			26	
5:00 AM			95			95			95	
6:00 AM			182			182			182	
7:00 AM			97			97			97	
8:00 AM			81			81			81	
9:00 AM			60			60			60	
10:00 AM			68			68			68	
11:00 AM			69			69			69	
12:00 PM			88			88			88	
1:00 PM			66			66			66	
2:00 PM			79			79			79	
3:00 PM			160			160			160	
4:00 PM			69			69			69	
5:00 PM			64			64			64	
6:00 PM			22			22			22	
7:00 PM			13			13			13	
8:00 PM			5			5			5	
9:00 PM			5			5			5	
10:00 PM			4			4			4	
11:00 PM			7			7			7	
Day Total			1295			1295			1295	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			6:00 AM 182			6:00 AM 182			6:00 AM 182	
PM Peak Volume			3:00 PM 160			3:00 PM 160			3:00 PM 160	

Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: EB
DATE: Apr 11 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>5 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	1	1	0	0	0	0	0	8	5	0	0	0	0	15
1:00 AM	0	0	2	0	0	0	0	0	1	0	0	0	0	0	3
2:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:00 AM	0	0	2	0	0	0	0	0	1	0	0	0	0	0	3
4:00 AM	0	0	2	0	0	0	0	0	2	1	0	0	0	1	6
5:00 AM	0	8	5	0	2	1	2	1	12	1	0	0	0	2	34
6:00 AM	0	8	7	0	1	0	0	2	18	0	0	0	0	5	41
7:00 AM	0	6	6	0	7	1	2	1	16	1	0	0	0	1	41
8:00 AM	0	1	5	0	6	4	3	1	19	1	0	0	0	0	40
9:00 AM	0	1	5	0	3	3	0	2	14	0	0	0	0	1	29
10:00 AM	0	3	9	2	5	3	1	0	13	0	0	0	1	0	37
11:00 AM	0	4	9	0	7	1	0	1	15	1	0	0	0	0	38
12:00 PM	0	3	12	1	3	0	1	2	11	0	0	0	0	2	35
1:00 PM	0	5	8	2	4	0	2	1	10	1	0	0	0	1	34
2:00 PM	0	8	4	1	6	1	0	2	6	0	0	0	0	0	28
3:00 PM	3	48	34	0	13	2	2	0	12	1	0	0	0	0	115
4:00 PM	0	21	13	0	3	1	0	0	8	0	0	0	0	0	46
5:00 PM	0	23	17	0	5	0	0	0	1	0	0	0	0	2	48
6:00 PM	0	4	8	0	2	1	0	0	0	0	0	0	0	0	15
7:00 PM	0	2	2	1	1	1	0	0	0	0	0	0	0	0	7
8:00 PM	0	1	1	0	1	0	0	0	0	0	0	0	0	0	3
9:00 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
10:00 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
11:00 PM	0	1	2	0	0	1	0	0	0	0	0	0	0	0	4
Day Total	3	149	161	7	69	20	13	13	167	12	0	0	1	15	630
Percent	0.5%	23.7%	25.6%	1.1%	11.0%	3.2%	2.1%	2.1%	26.5%	1.9%	0.0%	0.0%	0.2%	2.4%	
ADT 630															
AM Peak Volume		5:00 AM 8	10:00 AM 9	10:00 AM 2	7:00 AM 7	8:00 AM 4	8:00 AM 3	6:00 AM 2	8:00 AM 19	12:00 AM 5			10:00 AM 1	6:00 AM 5	6:00 AM 41
PM Peak Volume	3:00 PM 3	3:00 PM 48	3:00 PM 34	1:00 PM 2	3:00 PM 13	3:00 PM 2	1:00 PM 2	12:00 PM 2	3:00 PM 12	1:00 PM 1				12:00 PM 2	3:00 PM 115

Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

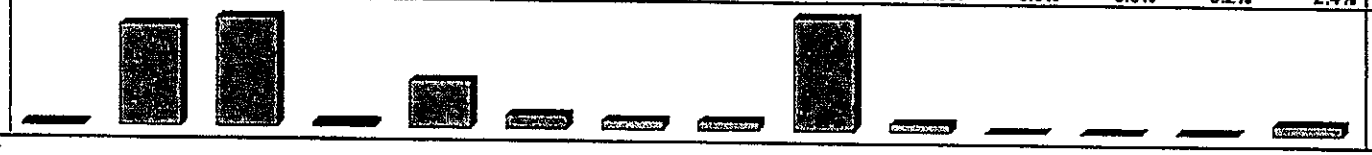
Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: EB
DATE: Apr 11 2012 - Apr 11 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	3	149	161	7	69	20	13	13	167	12	0	0	1	15	630
Percent	0.5%	23.7%	25.6%	1.1%	11.0%	3.2%	2.1%	2.1%	26.5%	1.9%	0.0%	0.0%	0.2%	2.4%	
ADT 630															



Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: EB
DATE: Apr 11 2012 - Apr 11 2012

Start Time	Mon	Tue	Wed 11-Apr-12	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			15			15			15	
1:00 AM			3			3			3	
2:00 AM			2			2			2	
3:00 AM			3			3			3	
4:00 AM			6			6			6	
5:00 AM			34			34			34	
6:00 AM			41			41			41	
7:00 AM			41			41			41	
8:00 AM			40			40			40	
9:00 AM			29			29			29	
10:00 AM			37			37			37	
11:00 AM			38			38			38	
12:00 PM			35			35			35	
1:00 PM			34			34			34	
2:00 PM			28			28			28	
3:00 PM			115			115			115	
4:00 PM			46			46			46	
5:00 PM			48			48			48	
6:00 PM			15			15			15	
7:00 PM			7			7			7	
8:00 PM			3			3			3	
9:00 PM			3			3			3	
10:00 PM			3			3			3	
11:00 PM			4			4			4	
Day Total			630			630			630	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			6:00 AM 41			6:00 AM 41			6:00 AM 41	
PM Peak Volume			3:00 PM 115			3:00 PM 115			3:00 PM 115	

Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: WB
DATE: Apr 11 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>5 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	0	2	0	0	0	0	0	2	0	0	0	0	0	4
1:00 AM	0	0	2	0	0	0	0	0	1	0	0	0	0	0	3
2:00 AM	0	0	2	0	0	0	0	0	1	0	0	0	0	0	3
3:00 AM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2
4:00 AM	0	3	10	0	0	1	0	0	6	0	0	0	0	0	20
5:00 AM	1	18	12	0	9	2	0	1	17	0	0	0	0	1	61
6:00 AM	2	63	39	0	16	2	0	2	16	0	0	0	1	0	141
7:00 AM	0	20	7	0	9	1	0	0	19	0	0	0	0	0	56
8:00 AM	0	6	6	0	5	4	0	1	19	0	0	0	0	0	41
9:00 AM	0	2	6	2	1	2	0	3	15	0	0	0	0	0	31
10:00 AM	0	4	6	1	8	3	0	0	9	0	0	0	0	0	31
11:00 AM	0	1	6	0	6	0	0	4	13	0	0	0	0	1	31
12:00 PM	3	6	8	2	5	4	0	2	10	0	0	0	0	13	53
1:00 PM	2	6	2	1	1	0	0	0	6	0	0	0	0	14	32
2:00 PM	2	2	6	1	6	4	0	6	5	0	0	0	0	19	51
3:00 PM	3	2	12	0	3	0	0	2	2	0	0	0	0	21	45
4:00 PM	1	6	5	1	1	0	0	0	5	0	0	0	0	4	23
5:00 PM	0	7	4	0	0	3	0	0	1	0	0	0	0	1	16
6:00 PM	0	2	4	0	1	0	0	0	0	0	0	0	0	0	7
7:00 PM	0	0	3	2	0	1	0	0	0	0	0	0	0	0	6
8:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
9:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
10:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
11:00 PM	0	0	2	0	1	0	0	0	0	0	0	0	0	0	3
Day Total	14	149	149	10	72	27	0	21	148	0	0	0	1	74	665
Percent	2.1%	22.4%	22.4%	1.5%	10.8%	4.1%	0.0%	3.2%	22.3%	0.0%	0.0%	0.0%	0.2%	11.1%	
ADT 665															
AM Peak Volume	6:00 AM 2	6:00 AM 63	6:00 AM 39	9:00 AM 2	6:00 AM 16	8:00 AM 4		11:00 AM 4	7:00 AM 19				6:00 AM 1	5:00 AM 1	6:00 AM 141
PM Peak Volume	12:00 PM 3	5:00 PM 7	3:00 PM 12	12:00 PM 2	2:00 PM 6	12:00 PM 4		2:00 PM 6	12:00 PM 10					3:00 PM 21	12:00 PM 53

Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

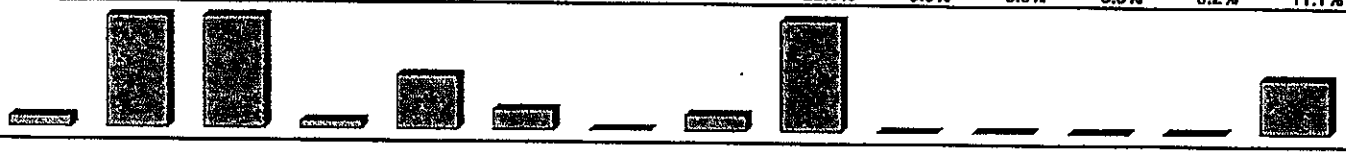
Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: WB
DATE: Apr 11 2012 - Apr 11 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>5 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	14	149	149	10	72	27	0	21	148	0	0	0	1	74	665
Percent	2.1%	22.4%	22.4%	1.5%	10.8%	4.1%	0.0%	3.2%	22.3%	0.0%	0.0%	0.0%	0.2%	11.1%	
ADT 665															



Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: WB
DATE: Apr 11 2012 - Apr 11 2012

Start Time	Mon	Tue	Wed 11-Apr-12	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			4			4			4	
1:00 AM			3			3			3	
2:00 AM			3			3			3	
3:00 AM			2			2			2	
4:00 AM			20			20			20	
5:00 AM			61			61			61	
6:00 AM			141			141			141	
7:00 AM			56			56			56	
8:00 AM			41			41			41	
9:00 AM			31			31			31	
10:00 AM			31			31			31	
11:00 AM			31			31			31	
12:00 PM			53			53			53	
1:00 PM			32			32			32	
2:00 PM			51			51			51	
3:00 PM			45			45			45	
4:00 PM			23			23			23	
5:00 PM			16			16			16	
6:00 PM			7			7			7	
7:00 PM			6			6			6	
8:00 PM			2			2			2	
9:00 PM			2			2			2	
10:00 PM			1			1			1	
11:00 PM			3			3			3	
Day Total			665			665			665	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			6:00 AM 141			6:00 AM 141			6:00 AM 141	
PM Peak Volume			12:00 PM 53			12:00 PM 53			12:00 PM 53	

Comments:

Report generated on 4/17/2012 9:13 AM

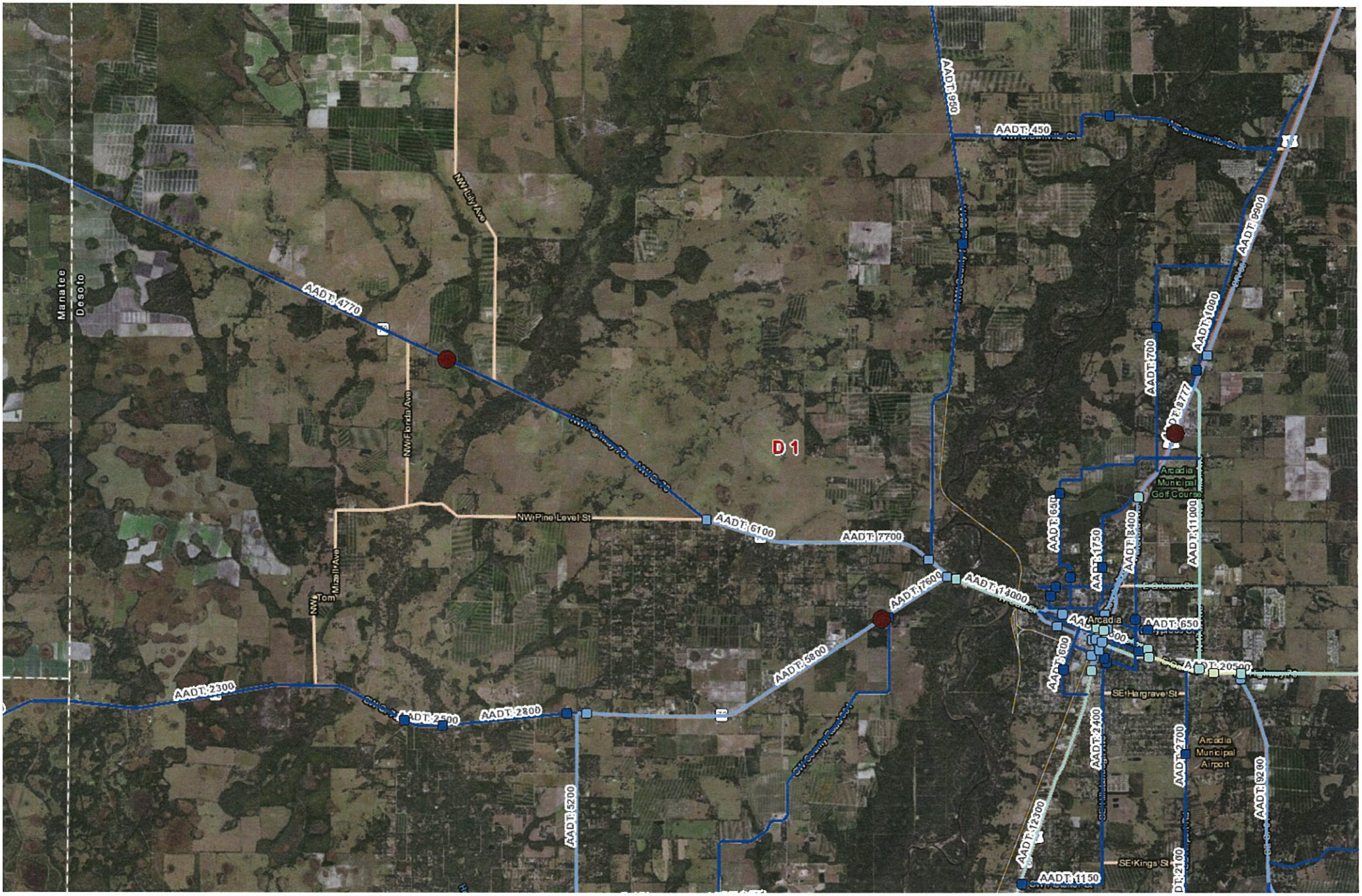
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

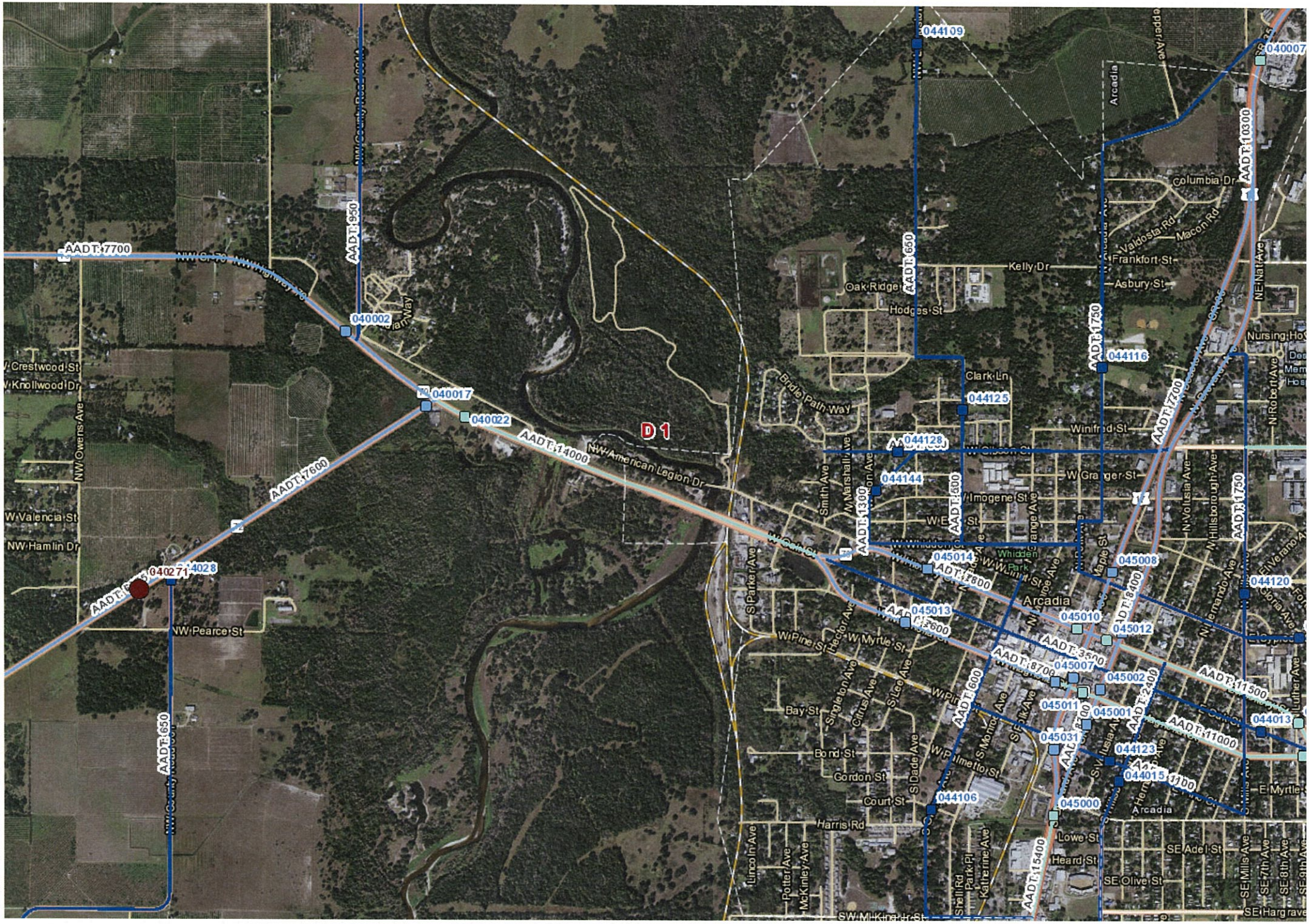
FOUR CORNERS MINE ROAD

TRUCK COUNT
(Video dated April 11, 2012)

		Number of Trucks		
		In	Out	Total
8-8:15	AM	8	2	10
8:15-8:30	AM	5	6	11
8:30-8:45	AM	6	7	13
8:45-9	AM	3	8	11
4-4:15	PM	2	3	5
4:15-4:30	PM	4	1	5
4:30-4:45	PM	0	3	3
4:45-5	PM	0	1	1

FDOT COUNTS


D 1
Manatee
Desoto
AADT: 4770
NW Tully Ave
NW Florida Ave
NW Highway 70
NW Pine Level St
AADT: 6100
AADT: 7700
AADT: 7600
AADT: 14000
AADT: 5800
AADT: 2300
AADT: 2500
AADT: 2800
AADT: 5200
AADT: 450
AADT: 650
AADT: 700
AADT: 1000
AADT: 9900
AADT: 11000
AADT: 8400
AADT: 1750
AADT: 650
AADT: 20500
AADT: 2400
AADT: 2700
AADT: 9280
AADT: 12300
AADT: 1150
AADT: 2100
Arcadia
Arcadia Municipal Golf Course
Arcadia Municipal Airport
SE Hargrave St
SE Kings St
E Olson St


D 1
AADT 7700
AADT 1950
AADT 7600
AADT 14000
AADT 650
AADT 1750
AADT 1700
AADT 10300
AADT 1300
AADT 1600
AADT 8400
AADT 2400
AADT 8700
AADT 11500
AADT 11000
AADT 1100
AADT 15400
040002
040017
040022
040271
044028
044109
044116
044125
044128
044144
045014
045013
045010
045012
045007
045002
045011
045001
045031
044123
044015
044106
045000
040007
044120
044013
NW American Legion Dr
NW Pearce St
NW Hamlin Dr
W Valencia St
W Crestwood St
W Knollwood Dr
NW Owens Ave
Arcadia
Columbia Dr
Valdosta Rd
Macon Rd
Frankfort St
Asbury St
Kelly Dr
Oak Ridge
Hodges St
Clark Ln
Bridle Path Way
Winifred St
W Granger St
Imogene St
Whidden Park
Smith Ave
W Marshall Ave
S Parker Ave
W Oak St
W Pine St
W Myrtle St
Bay St
Bond St
Gordon St
Court St
Harris Rd
Lincoln Ave
Potter Ave
McKinley Ave
Singleton Ave
Citrus Ave
S Lee Ave
S Dade Ave
W Palmetto St
S Monroe Ave
S Polk Ave
Maple St
N Volusia Ave
N Hillsborough Ave
N Hernando Ave
N Robert Ave
NE Nat Ave
Nursing Home
Lowe St
Heard St
SE Adel St
SE Olive St
SE Mills Ave
SE 7th Ave
SE 8th Ave
SE Hargrave
El Myrtle
Luther Ave
SW McKinley St
Shell Rd
Park Pl
Katherine Ave
NW County Road 0011
NW County Road 0010

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2018 HISTORICAL AADT REPORT

COUNTY: 04 - DESOTO

SITE: 0068 - SR-70, 0.24 MILE SE OF NW MIZELL AVE.,DESOTO CO.

YEAR	AADT	DIRECTION 1		DIRECTION 2		*K FACTOR	D FACTOR	T FACTOR
2018	4770 C	E	2380	W	2390	9.50	56.80	23.20
2017	4500 C	E	2238	W	2262	9.50	56.80	23.20
2016	4376 C	E	2194	W	2182	9.50	57.70	23.10
2015	3955 C	E	1968	W	1987	9.50	55.90	22.10
2014	3630 C	E	1802	W	1828	9.50	55.00	24.30
2013	3399 C	E	1686	W	1713	9.50	54.80	25.00
2012	3332 C	E	1653	W	1679	9.50	54.20	22.20
2011	3311 C	E	1644	W	1667	9.50	55.40	24.00
2010	3297 C	E	1637	W	1660	10.68	54.22	23.20
2009	3397 C	E	1685	W	1712	10.92	57.65	22.90
2008	3505 C	E	1733	W	1772	10.84	57.99	25.70
2007	3793 C	E	1878	W	1915	10.76	52.49	25.90
2006	3824 C	E	1907	W	1917	10.62	54.37	26.00
2005	3885 C	E	1913	W	1972	10.50	52.20	24.50
2004	4009 C	E	1943	W	2066	12.30	61.20	23.90
2003	3900 F	E		W		10.40	55.80	23.20

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2018 HISTORICAL AADT REPORT

COUNTY: 04 - DESOTO

SITE: 0002 - SR 70, NORTHWEST OF CR 661A

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2018	7700 F	E 3800	W 3900	9.50	53.20	18.80
2017	7100 C	E 3500	W 3600	9.50	54.10	17.70
2016	7600 F	E 3800	W 3800	9.50	54.70	17.70
2015	6800 C	E 3400	W 3400	9.50	54.80	17.70
2014	6300 F	E 3100	W 3200	9.50	54.30	17.40
2013	6100 C	E 3000	W 3100	9.50	54.60	17.40
2012	6200 C	E 3100	W 3100	9.50	54.50	18.00
2011	5400 F	E 2700	W 2700	9.50	54.40	18.40
2010	5400 C	E 2700	W 2700	10.18	54.10	18.40
2009	5600 C	E 2800	W 2800	10.38	54.58	18.00
2008	6600 C	E 3300	W 3300	10.36	56.09	17.80
2007	6800 C	E 3400	W 3400	10.72	52.32	20.20
2006	6900 C	E 3500	W 3400	10.73	53.24	21.30
2005	6400 C	E 3300	W 3100	10.40	51.70	22.90
2004	6600 C	E 3400	W 3200	10.70	55.70	22.90
2003	6000 C	E 3000	W 3000	10.00	52.90	23.20

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2018 HISTORICAL AADT REPORT

COUNTY: 04 - DESOTO

SITE: 0022 - SR 70, SOUTHEAST OF SR 72 DESOTO COUNTY

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2018	14000 C	E 7000	W 7000	9.50	53.20	15.60
2017	15200 C	E 7700	W 7500	9.50	54.10	15.60
2016	15300 C	E 7700	W 7600	9.50	54.70	15.30
2015	13800 C	E 7000	W 6800	9.50	54.80	13.80
2014	12800 F	E 6400	W 6400	9.50	54.30	12.60
2013	12400 C	E 6200	W 6200	9.50	54.60	12.60
2012	11800 C	E 5900	W 5900	9.50	54.50	14.20
2011	11500 F	E 5800	W 5700	9.50	54.40	13.20
2010	11700 C	E 5900	W 5800	10.18	54.10	13.20
2009	11900 C	E 6000	W 5900	10.38	54.58	12.60
2008	13500 C	E 6700	W 6800	10.36	56.09	17.40
2007	13600 C	E 6800	W 6800	10.72	52.32	16.40
2006	13900 C	E 7100	W 6800	10.73	53.24	17.90
2005	13500 C	E 6800	W 6700	10.40	51.70	18.60
2004	12800 F	E 6400	W 6400	10.70	55.70	18.60
2003	12200 C	E 6100	W 6100	10.00	52.90	18.60

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FDOT GENERALIZED CAPACITY TABLES

TABLE 1

Generalized **Annual Average Daily** Volumes for Florida's **Urbanized Areas**

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	16,800	17,700	**
4	Divided	*	37,900	39,800	**
6	Divided	*	58,400	59,900	**
8	Divided	*	78,800	80,100	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	7,300	14,800	15,600
4	Divided	*	14,500	32,400	33,800
6	Divided	*	23,300	50,000	50,900
8	Divided	*	32,000	67,300	68,100

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	2,900	7,600	19,700
50-84%	2,100	6,700	19,700	>19,700
85-100%	9,300	19,700	>19,700	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	2,800	9,500
50-84%	*	1,600	8,700	15,800
85-100%	3,800	10,700	17,400	>19,700

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Core Urbanized

Lanes	B	C	D	E
4	47,400	64,000	77,900	84,600
6	69,900	95,200	116,600	130,600
8	92,500	126,400	154,300	176,600
10	115,100	159,700	194,500	222,700
12	162,400	216,700	256,600	268,900

Urbanized

Lanes	B	C	D	E
4	45,800	61,500	74,400	79,900
6	68,100	93,000	111,800	123,300
8	91,500	123,500	148,700	166,800
10	114,800	156,000	187,100	210,300

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 20,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	8,600	17,000	24,200	33,300
4	Divided	36,700	51,800	65,600	72,600
6	Divided	55,000	77,700	98,300	108,800

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as two-way annual average daily volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.htm

TABLE 1
(continued)

Generalized **Annual Average Daily** Volumes for Florida's **Urbanized Areas**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities				Interrupted Flow Facilities					
					State Arterials				Class I	
	Freeways	Core Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS										
Area type (u,lu)	lu	lu	u	u	u	u	u	u	u	u
Number of through lanes (both dir.)	4-10	4-12	2	4-6	2	4-8	2	4-8	4	4
Posted speed (mph)	70	65	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	70	55	55	50	55	35	35	50	50
Auxiliary Lanes (n,y)	n	n								
Median (n, nr, r)			n	r	n	r	n	r	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l	l
% no passing zone			80							
Exclusive left turn lane impact (n, y)			[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)					n	n	n	n	n	n
Facility length (mi)	4	4	5	5	2	2	1.9	1.8	2	2
Number of basic segments	4	4								
TRAFFIC CHARACTERISTICS										
Planning analysis hour factor (K)	0.090	0.085	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.547	0.547	0.550	0.550	0.550	0.560	0.565	0.560	0.565	0.565
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)			1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	4.0	4.0	2.0	2.0	1.0	1.0	1.0	1.0	2.5	2.0
Local adjustment factor	0.91	0.91	0.97	0.98						
% left turns					12	12	12	12	12	12
% right turns					12	12	12	12	12	12
CONTROL CHARACTERISTICS										
Number of signals					4	4	10	10	4	6
Arrival type (1-6)					3	3	4	4	4	4
Signal type (a, c, p)					c	c	c	c	c	c
Cycle length (C)					120	150	120	120	120	120
Effective green ratio (g/C)					0.44	0.45	0.44	0.44	0.44	0.44
MULTIMODAL CHARACTERISTICS										
Paved shoulder/bicycle lane (n, y)									n, 50%, y	n
Outside lane width (n, t, w)									t	t
Pavement condition (d, t, u)									t	
On-street parking (n, y)										
Sidewalk (n, y)										n, 50%, y
Sidewalk/roadway separation(a, t, w)										t
Sidewalk protective barrier (n, y)										n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane	Multilane	Class I	Class II	Score	Score	Buses/hr.
		%ffs	Density	ats	ats			
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 2

Generalized **Annual Average Daily** Volumes for Florida's **Transitioning Areas** and **Areas Over 5,000 Not In Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	14,400	16,200	**
4	Divided	*	34,000	35,500	**
6	Divided	*	52,100	53,500	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	6,500	13,300	14,200
4	Divided	*	9,900	28,800	31,600
6	Divided	*	16,000	44,900	47,600

Non-State Signalized Roadway Adjustments
(Alter corresponding state volumes by the indicated percent.)
Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment
Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	2,600	6,100	19,500
50-84%	1,900	5,500	18,400	>19,500
85-100%	7,500	19,500	>19,500	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	2,800	9,400
50-84%	*	1,600	8,600	15,600
85-100%	3,800	10,500	17,100	>19,500

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	44,100	57,600	68,900	71,700
6	65,100	85,600	102,200	111,000
8	85,100	113,700	135,200	150,000
10	106,200	141,700	168,800	189,000

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 20,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	9,200	17,300	24,400	33,300
4	Divided	35,300	49,600	62,900	69,600
6	Divided	52,800	74,500	94,300	104,500

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as two-way annual average daily volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 2
(continued)

Generalized **Annual Average Daily** Volumes for Florida's **Transitioning** and **Areas Over 5,000 Not In Urbanized Areas**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities					
				State Arterials				Class I	
	Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS									
Area type (t,uo)	t	t	t	t	t	t	t	t	t
Number of through lanes (both dir.)	4-10	2	4-6	2	4-6	2	4-6	4	4
Posted speed (mph)	70	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	55	55	50	55	35	35	50	50
Auxiliary lanes (n,y)	n	n	n						
Median (n, nr, r)		n	r	n	y	n	y	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l
% no passing zone		60							
Exclusive left turn lane impact (n, y)		[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)				n	n	n	n	n	n
Facility length (mi)	8	5	5	1.8	2	2	2	2	2
Number of basic segments	4								
TRAFFIC CHARACTERISTICS									
Planning analysis hour factor (K)	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.555	0.550	0.550	0.550	0.570	0.570	0.565	0.570	0.570
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	9.0	4.0	4.0	2.0	3.0	2.0	3.0	3.0	3.0
Local adjustment factor	0.85	0.97	0.95						
% left turns				12	12	12	12	12	12
% right turns				12	12	12	12	12	12
CONTROL CHARACTERISTICS									
Number of signals				5	4	10	10	4	6
Arrival type (1-6)				4	3	4	4	4	4
Signal type (a, c, p)				c	c	c	c	c	c
Cycle length (C)				120	150	120	150	120	120
Effective green ratio (g/C)				0.44	0.45	0.44	0.45	0.44	0.44
MULTIMODAL CHARACTERISTICS									
Paved shoulder/bicycle lane (n, y)								n, 50%, y	n
Outside lane width (n, t, w)								t	t
Pavement condition (d, t, u)								t	
On-street parking (n, y)								n	n
Sidewalk (n, y)									n, 50%, y
Sidewalk/roadway separation (a, t, w)									t
Sidewalk protective barrier (n, y)									n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane	Multilane	Class I	Class II	Score	Score	Buses/hr.
		%ffs	Density	ats	ats			
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 3

Generalized **Annual Average Daily** Volumes for Florida's **Rural Undeveloped Areas** and **Developed Areas Less Than 5,000 Population**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Lanes	Median	B	C	D	E
2	Undivided	*	12,900	14,200	**
4	Divided	*	29,300	30,400	**
6	Divided	*	45,200	45,800	**

Non-State Signalized Roadway Adjustments
(Alter corresponding state volumes by the indicated percent.)
Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment
Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Rural Undeveloped

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	1,300	2,000	3,200
50-84%	1,000	2,100	3,200	10,600
85-100%	2,600	3,900	18,500	>18,500

Developed Areas

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	2,300	4,900	15,600
50-84%	1,700	4,500	13,300	18,500
85-100%	5,900	18,500	>18,500	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	2,700	9,200
50-84%	*	1,500	8,400	14,900
85-100%	3,600	10,200	16,700	>19,200

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	28,800	43,000	52,300	60,000
6	43,000	64,000	78,300	92,500
8	57,500	85,400	104,400	123,500

Freeway Adjustments
Auxiliary Lanes
Present in Both Directions
+ 20,000

UNINTERRUPTED FLOW HIGHWAYS

Rural Undeveloped

Lanes	Median	B	C	D	E
2	Undivided	4,700	8,400	14,300	28,600
4	Divided	25,700	40,300	51,000	57,900
6	Divided	38,800	60,400	76,700	86,800

Developed Areas

Lanes	Median	B	C	D	E
2	Undivided	8,700	16,400	23,100	31,500
4	Divided	25,900	40,700	52,400	59,600
6	Divided	38,800	61,000	78,400	89,500

Passing Lane Adjustments
Alter LOS B-D volumes in proportion to the passing lane length to the highway segment length

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1]Values shown are presented as two-way annual average daily volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.htm

TABLE 3
(continued)

Generalized **Annual Average Daily** Volumes for Florida's **Rural Undeveloped Areas** and **Developed Areas Less Than 5,000 Population**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities					Interrupted Flow Facilities				
	Freeways	Highways				Arterials		Bicycle		Pedestrian
ROADWAY CHARACTERISTICS										
Area type (ru, rd)	rural	ru	ru	rd	rd	rd	rd	ru	rd	rd
Number of through lanes (both dir.)	4-8	2	4-6	2	4-6	2	4-6	4	4	2
Posted speed (mph)	70	55	65	50	55	45	45	55	45	45
Free flow speed (mph)	75	60	70	55	60	50	50	60	50	50
Auxiliary lanes (n,y)	n									
Median (n, nr, r)		n	r	n	r	n	r	r	r	n
Terrain (l,r)	l	l	l	l	l	l	l	l	l	l
% no passing zone		20		60						
Exclusive left turn lanes (n, y)		[n]	y	[n]	y	y	y	y	y	y
Exclusive right turn lanes (n, y)						n	n	n	n	n
Facility length (mi)	14	10	10	5	5	1.9	2.2	4	2	2
Number of basic segments	4									
TRAFFIC CHARACTERISTICS										
Planning analysis hour factor (K)	0.105	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095
Directional distribution factor (D)	0.555	0.550	0.550	0.550	0.550	0.550	0.550	0.570	0.570	0.550
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,300	1,700	2,200	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	12.0	5.0	12.0	4.0	4.0	3.0	3.0	6.0	3.5	3.0
Local adjustment factor	0.84	0.88	0.73	0.97	0.82					
% left turns						12	12		12	12
% right turns						12	12		12	12
CONTROL CHARACTERISTICS										
Number of signals						5	6	2	4	4
Arrival type (1-6)						3	3	3	3	3
Signal type (a, c, p)						c	c	a	a	a
Cycle length (C)						90	90	60	90	90
Effective green ratio (g/C)						0.44	0.44	0.37	0.44	0.44
MULTIMODAL CHARACTERISTICS										
Paved shoulder/bicycle lane (n, y)								n,50%,y	n,50%,y	n
Outside lane width (n, t, w)								t	t	t
Pavement condition (d, t, u)								t	t	
Sidewalk (n, y)										n,50%,y
Sidewalk/roadway separation(a, t,w)										t
Sidewalk protective barrier (n, y)										n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways				
		Two-Lane ru		Two-Lane rd	Multilane ru	Multilane rd
	Density	%tsf	ats	%ffs	Density	Density
B	≤ 14	≤ 50	≤ 55	> 83.3	≤ 14	≤ 14
C	≤ 22	≤ 65	≤ 50	> 75.0	≤ 22	≤ 22
D	≤ 29	≤ 80	≤ 45	> 66.7	≤ 29	≤ 29
E	≤ 36	> 80	≤ 40	> 58.3	≤ 34	≤ 34

Level of Service	Arterials	Bicycle	Pedestrian
	Major City/Co.(ats)	Score	Score
B	> 31 mph	≤ 2.75	≤ 2.75
C	> 23 mph	≤ 3.50	≤ 3.50
D	> 18 mph	≤ 4.25	≤ 4.25
E	> 15 mph	≤ 5.00	≤ 5.00

%tsf = Percent time spent following %ffs = Percent of free flow speed ats = Average travel speed ru = Rural undeveloped rd = Rural developed

TABLE 4

Generalized **Peak Hour Two-Way** Volumes for Florida's **Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	1,510	1,600	**
4	Divided	*	3,420	3,580	**
6	Divided	*	5,250	5,390	**
8	Divided	*	7,090	7,210	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	660	1,330	1,410
4	Divided	*	1,310	2,920	3,040
6	Divided	*	2,090	4,500	4,590
8	Divided	*	2,880	6,060	6,130

Non-State Signalized Roadway Adjustments
(Alter corresponding state volumes by the indicated percent.)
Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment
Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	260	680	1,770
50-84%	190	600	1,770	>1,770
85-100%	830	1,770	>1,770	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	250	850
50-84%	*	150	780	1,420
85-100%	340	960	1,560	>1,770

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	4,120	5,540	6,700	7,190
6	6,130	8,370	10,060	11,100
8	8,230	11,100	13,390	15,010
10	10,330	14,040	16,840	18,930
12	14,450	18,880	22,030	22,860

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
÷ 1,800	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	770	1,530	2,170	2,990
4	Divided	3,300	4,660	5,900	6,530
6	Divided	4,950	6,990	8,840	9,790

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour two-way volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 4
(continued)

Generalized **Peak Hour Two-Way** Volumes for Florida's **Urbanized Areas**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities					
				State Arterials				Class I	
	Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS									
Area type (lu, u)	lu	u	u	u	u	u	u	u	u
Number of through lanes (both dir.)	4-12	2	4-6	2	4-8	2	4-8	4	4
Posted speed (mph)	70	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	55	55	50	55	35	35	50	50
Auxiliary lanes (n,y)	n								
Median (n, nr, r)		n	r	n	r	n	r	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l
% no passing zone		80							
Exclusive left turn lane impact (n, y)		[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)				n	n	n	n	n	n
Facility length (mi)	4	5	5	2	2	1.9	1.8	2	2
Number of basic segments	4								
TRAFFIC CHARACTERISTICS									
Planning analysis hour factor (K)	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.547	0.550	0.550	0.550	0.560	0.565	0.560	0.565	0.565
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	4.0	2.0	2.0	1.0	1.0	1.0	1.0	2.5	2.0
Local adjustment factor	0.91	0.97	0.98						
% left turns				12	12	12	12	12	12
% right turns				12	12	12	12	12	12
CONTROL CHARACTERISTICS									
Number of signals				4	4	10	10	4	6
Arrival type (1-6)				3	3	4	4	4	4
Signal type (a, c, p)				c	c	c	c	c	c
Cycle length (C)				120	150	120	120	120	120
Effective green ratio (g/C)				0.44	0.45	0.44	0.44	0.44	0.44
MULTIMODAL CHARACTERISTICS									
Paved shoulder/bicycle lane (n, y)								n, 50%, y	n
Outside lane width (n, t, w)								t	t
Pavement condition (d, t, u)								t	
On-street parking (n, y)								n	n
Sidewalk (n, y)									n, 50%, y
Sidewalk/roadway separation (a, t, w)									t
Sidewalk protective barrier (n, y)									n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane %ffs	Multilane Density	Class I ats	Class II ats	Score	Score	Buses/hr.
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 5

Generalized **Peak Hour Two-Way** Volumes for Florida's **Transitioning** and **Areas Over 5,000 Not In Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	1,300	1,460	**
4	Divided	*	3,060	3,200	**
6	Divided	*	4,690	4,820	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	580	1,200	1,280
4	Divided	*	890	2,590	2,850
6	Divided	*	1,440	4,040	4,280

Non-State Signalized Roadway Adjustments
(Alter corresponding state volumes by the indicated percent.)
Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment
Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	140	550	1,760
50-84%	170	500	1,650	>1,760
85-100%	670	1,760	>1,760	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	250	850
50-84%	*	150	780	1,410
85-100%	340	950	1,540	>1,760

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	3,970	5,190	6,200	6,460
6	5,860	7,710	9,190	9,990
8	7,660	10,230	12,170	13,500
10	9,550	12,750	15,190	17,010

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 1,800	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	820	1,550	2,190	2,990
4	Divided	3,170	4,460	5,660	6,260
6	Divided	4,750	6,700	8,480	9,400

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour two-way volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 5
(continued)

Generalized **Peak Hour Two-Way** Volumes for Florida's **Transitioning Areas** and **Areas Over 5,000 Not In Urbanized Areas**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities					
				State Arterials				Class I	
	Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS									
Area type (t,uo)	t	t	t	t	t	t	t	t	t
Number of through lanes (both dir.)	4-10	2	4-6	2	4-6	2	4-6	4	4
Posted speed (mph)	70	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	55	55	50	55	35	35	50	50
Auxiliary lanes (n,y)	n	n	n						
Median (n, nr, r)		n	r	n	y	n	y	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l
% no passing zone		60							
Exclusive left turn lane impact (n, y)		[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)				n	n	n	n	n	n
Facility length (mi)	8	5	5	1.8	2	2	2	2	2
Number of basic segments	4								
TRAFFIC CHARACTERISTICS									
Planning analysis hour factor (K)	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.555	0.550	0.550	0.550	0.570	0.570	0.565	0.570	0.570
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	9.0	4.0	4.0	2.0	3.0	2.0	3.0	3.0	3.0
Local adjustment factor	0.85	0.97	0.95						
% left turns				12	12	12	12	12	12
% right turns				12	12	12	12	12	12
CONTROL CHARACTERISTICS									
Number of signals				5	4	10	10	4	6
Arrival type (1-6)				4	3	4	4	4	4
Signal type (a, c, p)				c	c	c	c	c	c
Cycle length (C)				120	150	120	150	120	120
Effective green ratio (g/C)				0.44	0.45	0.44	0.45	0.44	0.44
MULTIMODAL CHARACTERISTICS									
Paved shoulder/bicycle lane (n, y)								n, 50%, y	n
Outside lane width (n, t, w)								t	t
Pavement condition (d, t, u)								t	
On-street parking (n, y)								n	n
Sidewalk (n, y)									n, 50%, y
Sidewalk/roadway separation (a, t, w)									t
Sidewalk protective barrier (n, y)									n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane	Multilane	Class I	Class II	Score	Score	Buses/hr.
		%ffs	Density	ats	ats			
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 6

Generalized **Peak Hour Two-Way** Volumes for Florida's **Rural Undeveloped Areas** and **Developed Areas Less Than 5,000 Population**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Lanes	Median	B	C	D	E
2	Undivided	*	1,220	1,350	**
4	Divided	*	2,790	2,890	**
6	Divided	*	4,300	4,350	**

Non-State Sigualized Roadway Adjustments
(Alter corresponding state volumes by the indicated percent.)
Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment
Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Rural Undeveloped

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	120	190	300
50-84%	100	200	310	>1,010
85-100%	250	370	1,760	>1,760

Developed Areas

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	220	460	1,480
50-84%	170	430	1,270	>1,760
85-100%	560	1,760	>1,760	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	220	840
50-84%	*	120	780	1,390
85-100%	320	940	1,560	>1,820

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	3,020	4,510	5,490	6,300
6	4,510	6,720	8,220	9,720
8	6,040	8,970	10,960	12,970

Freeway Adjustments
Auxiliary Lanes
Present in Both Directions
+ 1,800

UNINTERRUPTED FLOW HIGHWAYS

Rural Undeveloped

Lanes	Median	B	C	D	E
2	Undivided	440	790	1,350	2,710
4	Divided	2,440	3,820	4,840	5,500
6	Divided	3,680	5,730	7,280	8,240

Developed Areas

Lanes	Median	B	C	D	E
2	Undivided	820	1,550	2,190	2,990
4	Divided	2,460	3,860	4,970	5,660
6	Divided	3,680	5,790	7,440	8,500

Passing Lane Adjustments
Alter LOS B-D volumes in proportion to the passing lane length to the highway segment length

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1]Values shown are presented as peak hour two-way volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2]Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.htm

TABLE 6
(continued)

Generalized **Peak Hour Two-Way** Volumes for Florida's **Rural Undeveloped Areas** and **Developed Areas Less Than 5,000 Population**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities					Interrupted Flow Facilities				
	Freeways	Highways				Arterials		Bicycle		Pedestrian
ROADWAY CHARACTERISTICS										
Area type (ru, rd)	rural	ru	ru	rd	rd	rd	rd	ru	rd	rd
Number of through lanes (both dir.)	4-8	2	4-6	2	4-6	2	4-6	4	4	2
Posted speed (mph)	70	55	65	50	55	45	45	55	45	45
Free flow speed (mph)	75	60	70	55	60	50	50	60	50	50
Auxiliary lanes (n,y)	n									
Median (n, nr, r)		n	r	n	r	n	r	r	r	n
Terrain (l,r)	l	l	l	l	l	l	l	l	l	l
% no passing zone		20		60						
Exclusive left turn lanes (n, y)		[n]	y	[n]	y	y	y	y	y	y
Exclusive right turn lanes (n, y)						n	n	n	n	n
Facility length (mi)	14	10	10	5	5	1.9	2.2	4	2	2
Number of basic segments	4									
TRAFFIC CHARACTERISTICS										
Planning analysis hour factor (K)	0.105	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095
Directional distribution factor (D)	0.555	0.550	0.550	0.550	0.550	0.550	0.550	0.570	0.570	0.550
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,300	1,700	2,200	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	12.0	5.0	12.0	4.0	4.0	3.0	3.0	6.0	3.5	3.0
Local adjustment factor	0.84	0.88	0.73	0.97	0.82					
% left turns						12	12		12	12
% right turns						12	12		12	12
CONTROL CHARACTERISTICS										
Number of signals						5	6	2	4	4
Arrival type (1-6)						3	3	3	3	3
Signal type (a, c, p)						c	c	a	a	a
Cycle length (C)						90	90	60	90	90
Effective green ratio (g/C)						0.44	0.44	0.37	0.44	0.44
MULTIMODAL CHARACTERISTICS										
Paved shoulder/bicycle lane (n, y)								n,50%,y	n,50%,y	n
Outside lane width (n, t, w)								t	t	t
Pavement condition (d, t, w)								t	t	
Sidewalk (n, y)										n,50%,y
Sidewalk/roadway separation(n, t,w)										t
Sidewalk protective barrier (n, y)										n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways				
		Two-Lane ru		Two-Lane rd	Multilane ru	Multilane rd
	Density	%tsf	ats	%ffs	Density	Density
B	≤ 14	≤ 50	≤ 55	> 83.3	≤ 14	≤ 14
C	≤ 22	≤ 65	≤ 50	> 75.0	≤ 22	≤ 22
D	≤ 29	≤ 80	≤ 45	> 66.7	≤ 29	≤ 29
E	≤ 36	> 80	≤ 40	> 58.3	≤ 34	≤ 34

Level of Service	Arterials	Bicycle	Pedestrian
	Major City/Co.(ats)	Score	Score
B	> 31 mph	≤ 2.75	≤ 2.75
C	> 23 mph	≤ 3.50	≤ 3.50
D	> 18 mph	≤ 4.25	≤ 4.25
E	> 15 mph	≤ 5.00	≤ 5.00

%tsf = Percent time spent following %ffs = Percent of free flow speed ats = Average travel speed ru = Rural undeveloped rd = Rural developed

TABLE 7

Generalized **Peak Hour Directional** Volumes for Florida's **Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	830	880	**
2	Divided	*	1,910	2,000	**
3	Divided	*	2,940	3,020	**
4	Divided	*	3,970	4,040	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	370	750	800
2	Divided	*	730	1,630	1,700
3	Divided	*	1,170	2,520	2,560
4	Divided	*	1,610	3,390	3,420

Non-State Signalized Roadway Adjustments
(Alter corresponding state volumes by the indicated percent.)
Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
1	Divided	Yes	No	+5%
1	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment
Multiply the corresponding directional volumes in this table by 1.2

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	150	390	1,000
50-84%	110	340	1,000	>1,000
85-100%	470	1,000	>1,000	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	140	480
50-84%	*	80	440	800
85-100%	200	540	880	>1,000

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
2	2,260	3,020	3,660	3,940
3	3,360	4,580	5,500	6,080
4	4,500	6,080	7,320	8,220
5	5,660	7,680	9,220	10,360
6	7,900	10,320	12,060	12,500

Freeway Adjustments

Auxiliary Lane	Ramp Metering
+ 1,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
1	Undivided	420	840	1,190	1,640
2	Divided	1,810	2,560	3,240	3,590
3	Divided	2,720	3,840	4,860	5,380

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
1	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.htm

TABLE 7
(continued)

Generalized **Peak Hour Directional** Volumes for Florida's **Urbanized Areas**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities					
				State Arterials				Class I	
	Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS									
Area type (lu, u)	lu	u	u	u	u	u	u	u	u
Number of through lanes (both dir.)	4-12	2	4-6	2	4-8	2	4-8	4	4
Posted speed (mph)	70	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	55	55	50	55	35	35	50	50
Auxiliary lanes (n,y)	n								
Median (n, nr, r)		n	r	n	r	n	r	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l
% no passing zone		80							
Exclusive left turn lane impact (n, y)		[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)				n	n	n	n	n	n
Facility length (mi)	4	5	5	2	2	1.9	1.8	2	2
Number of basic segments	4								
TRAFFIC CHARACTERISTICS									
Planning analysis hour factor (K)	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.547	0.550	0.550	0.550	0.560	0.565	0.560	0.565	0.565
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	4.0	2.0	2.0	1.0	1.0	1.0	1.0	2.5	2.0
Local adjustment factor	0.91	0.97	0.98						
% left turns				12	12	12	12	12	12
% right turns				12	12	12	12	12	12
CONTROL CHARACTERISTICS									
Number of signals				4	4	10	10	4	6
Arrival type (1-6)				3	3	4	4	4	4
Signal type (a, c, p)				c	c	c	c	c	c
Cycle length (C)				120	150	120	120	120	120
Effective green ratio (g/C)				0.44	0.45	0.44	0.44	0.44	0.44
MULTIMODAL CHARACTERISTICS									
Paved shoulder/bicycle lane (n, y)								n, 50%, y	n
Outside lane width (n, t, w)								t	t
Pavement condition (d, t, w)								t	
On-street parking (n, y)								n	n
Sidewalk (n, y)									n, 50%, y
Sidewalk/roadway separation (a, t, w)									t
Sidewalk protective barrier (n, y)									n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane %ffs	Multilane Density	Class I ats	Class II ats	Score	Score	Buses/hr.
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 8

Generalized **Peak Hour Directional** Volumes for Florida's **Transitioning** and **Areas Over 5,000 Not In Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	710	800	**
2	Divided	*	1,740	1,820	**
3	Divided	*	2,670	2,740	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	330	680	720
2	Divided	*	500	1,460	1,600
3	Divided	*	810	2,280	2,420

Non-State Signalized Roadway Adjustments
(Alter corresponding state volumes by the indicated percent.)
Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
1	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment
Multiply the corresponding directional volumes in this table by 1.2

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	140	320	1,000
50-84%	100	280	940	>1,000
85-100%	380	1,000	>1,000	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	140	480
50-84%	*	80	440	800
85-100%	200	540	880	>1,000

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
2	2,200	2,880	3,440	3,580
3	3,260	4,280	5,100	5,540
4	4,260	5,680	6,760	7,500
5	5,300	7,080	8,440	9,440

Freeway Adjustments

Auxiliary Lane	Ramp Metering
+ 1,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
1	Undivided	450	850	1,200	1,640
2	Divided	1,740	2,450	3,110	3,440
3	Divided	2,610	3,680	4,660	5,170

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
1	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 8
(continued)

Generalized **Peak Hour Directional** Volumes for Florida's **Transitioning** and **Areas Over 5,000 Not In Urbanized Areas**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities					
				State Arterials				Class I	
	Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS									
Area type (t,uo)	t	t	t	t	t	t	t	t	t
Number of through lanes (both dir.)	4-10	2	4-6	2	4-6	2	4-6	4	4
Posted speed (mph)	70	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	55	55	50	55	35	35	50	50
Auxiliary lanes (n,y)	n	n	n						
Median (n, nr, r)		n	r	n	y	n	y	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l
% no passing zone		60							
Exclusive left turn lane impact (n, y)		[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)				n	n	n	n	n	n
Facility length (mi)	8	5	5	1.8	2	2	2	2	2
Number of basic segments	4								
TRAFFIC CHARACTERISTICS									
Planning analysis hour factor (K)	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.555	0.550	0.550	0.550	0.570	0.570	0.565	0.570	0.570
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	9.0	4.0	4.0	2.0	3.0	2.0	3.0	3.0	3.0
Local adjustment factor	0.85	0.97	0.95						
% left turns				12	12	12	12	12	12
% right turns				12	12	12	12	12	12
CONTROL CHARACTERISTICS									
Number of signals				5	4	10	10	4	6
Arrival type (1-6)				4	3	4	4	4	4
Signal type (a, c, p)				c	c	c	c	c	c
Cycle length (C)				120	150	120	150	120	120
Effective green ratio (g/C)				0.44	0.45	0.44	0.45	0.44	0.44
CONTROL CHARACTERISTICS									
Paved shoulder/bicycle lane (n, y)								n, 50%, y	n
Outside lane width (n, t, w)								t	t
Pavement condition (d, t, u)								t	
On-street parking (n, y)								n	n
Sidewalk (n, y)									n, 50%, y
Sidewalk/roadway separation (a, t, w)									t
Sidewalk protective barrier (n, y)									n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane	Multilane	Class I	Class II	Score	Score	Buses/hr.
		%ffs	Density	ats	ats			
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 9

Generalized **Peak Hour Directional** Volumes for Florida's **Rural Undeveloped Areas** and **Developed Areas Less Than 5,000 Population**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Lanes	Median	B	C	D	E
1	Undivided	*	670	740	**
2	Divided	*	1,530	1,580	**
3	Divided	*	2,360	2,400	**

Non-State Signalized Roadway Adjustments
(Alter corresponding state volumes by the indicated percent.)
Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
1	Divided	Yes	No	+5%
1	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment
Multiply the corresponding directional volumes in this table by 1.2

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Rural Undeveloped

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	70	110	170
50-84%	60	120	180	580
85-100%	140	210	1,000	>1,000

Developed Areas

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	120	260	840
50-84%	100	240	720	1,000
85-100%	320	1,000	>1,000	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	120	460
50-84%	*	80	430	770
85-100%	180	520	860	>1,000

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
2	1,680	2,500	3,040	3,500
3	2,500	3,720	4,560	5,400
4	3,360	4,980	6,080	7,200

Freeway Adjustments
Auxiliary Lanes
Present in Both Directions
+ 1,000

UNINTERRUPTED FLOW HIGHWAYS

Rural Undeveloped

Lanes	Median	B	C	D	E
1	Undivided	240	430	740	1,490
2	Divided	1,340	2,100	2,660	3,020
3	Divided	2,020	3,150	4,000	4,530

Developed Areas

Lanes	Median	B	C	D	E
1	Undivided	450	850	1,200	1,640
2	Divided	1,350	2,120	2,730	3,110
3	Divided	2,020	3,180	4,090	4,670

Passing Lane Adjustments
Alter LOS B-D volumes in proportion to the passing lane length to the highway segment length

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
1	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1]Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2]Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:

Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 9
(continued)

Generalized **Peak Hour Directional** Volumes for Florida's **Rural Undeveloped Areas** and **Developed Areas Less Than 5,000 Population**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities					Interrupted Flow Facilities				
	Freeways	Highways				Arterials		Bicycle		Pedestrian
ROADWAY CHARACTERISTICS										
Area type (ru, rd)	rural	ru	ru	rd	rd	rd	rd	ru	rd	rd
Number of through lanes (both dir.)	4-8	2	4-6	2	4-6	2	4-6	4	4	2
Posted speed (mph)	70	55	65	50	55	45	45	55	45	45
Free flow speed (mph)	75	60	70	55	60	50	50	60	50	50
Auxiliary lanes (n,y)	n									
Median (n, nr, r)		n	r	n	r	n	r	r	r	n
Terrain (l,r)	l	l	l	l	l	l	l	l	l	l
% no passing zone		20		60						
Exclusive left turn lanes (n, y)		[n]	y	[n]	y	y	y	y	y	y
Exclusive right turn lanes (n, y)						n	n	n	n	n
Facility length (mi)	14	10	10	5	5	1.9	2.2	4	2	2
Number of basic segments	4									
TRAFFIC CHARACTERISTICS										
Planning analysis hour factor (K)	0.105	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095
Directional distribution factor (D)	0.555	0.550	0.550	0.550	0.550	0.550	0.550	0.570	0.570	0.550
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,300	1,700	2,200	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	12.0	5.0	12.0	4.0	4.0	3.0	3.0	6.0	3.5	3.0
Local adjustment factor	0.84	0.88	0.73	0.97	0.82					
% left turns						12	12		12	12
% right turns						12	12		12	12
CONTROL CHARACTERISTICS										
Number of signals						5	6	2	4	4
Arrival type (1-6)						3	3	3	3	3
Signal type (a, c, p)						c	c	a	a	a
Cycle length (C)						90	90	60	90	90
Effective green ratio (g/C)						0.44	0.44	0.37	0.44	0.44
MULTIMODAL CHARACTERISTICS										
Paved shoulder/bicycle lane (n, y)								n,50%,y	n,50%,y	n
Outside lane width (n, t, w)								t	t	t
Pavement condition (d, t, u)								t	t	
Sidewalk (n, y)										n,50%,y
Sidewalk/roadway separation(a, t,w)										t
Sidewalk protective barrier (n, y)										n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways				
		Two-Lane ru		Two-Lane rd	Multilane ru	Multilane rd
	Density	%tsf	ats	%ffs	Density	Density
B	≤ 14	≤ 50	≤ 55	> 83.3	≤ 14	≤ 14
C	≤ 22	≤ 65	≤ 50	> 75.0	≤ 22	≤ 22
D	≤ 29	≤ 80	≤ 45	> 66.7	≤ 29	≤ 29
E	≤ 36	> 80	≤ 40	> 58.3	≤ 34	≤ 34

Level of Service	Arterials	Bicycle	Pedestrian
	Major City/Co.(ats)	Score	Score
B	> 31 mph	≤ 2.75	≤ 2.75
C	> 23 mph	≤ 3.50	≤ 3.50
D	> 18 mph	≤ 4.25	≤ 4.25
E	> 15 mph	≤ 5.00	≤ 5.00

%tsf = Percent time spent following %ffs = Percent of free flow speed ats = Average travel speed ru = Rural undeveloped rd = Rural developed

RAILROAD ANALYSIS

TRANSPORTATION ANALYSIS

DESOTO MINE – RAILROAD CROSSING OF SR 70 WEST OF ARCADIA, FLORIDA

Prepared For

MOSAIC FERTILIZER, LLC

Prepared By

LINCKS & ASSOCIATES, INC.
Engineers - Planners
Tampa, Florida

TRANSPORTATION ANALYSIS

DESOTO MINE – RAILROAD CROSSING

OF SR 70 WEST OF ARCADIA FLORIDA

Prepared For

MOSAIC FERTILIZER, LLC

Prepared By

LINCKS & ASSOCIATES, INC.
5023 West Laurel Street
Tampa, Florida 33607
813-289-0039
State of Florida Authorization No. EB0004638

January, 2013

Project No. 11131

STEVEN J. HENRY
LICENSE
No. 51555
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

Steven J. Henry, P.E.
P.E. No. 51555

Date

LINCKS & ASSOCIATES, INC.

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INTRODUCTION

Mosaic Fertilizer, LLC is proposing a mine along SR 70 within western Desoto County, as shown in Figure 1. The product from the mine is proposed to be shipped via rail. Therefore, a new rail crossing of SR 70 is proposed. It is estimated that there will be up to eight (8) trains per day entering/exiting the mine and crossing SR 70. It is further estimated that the trains will take approximately ten (10) minutes to cross SR 70.

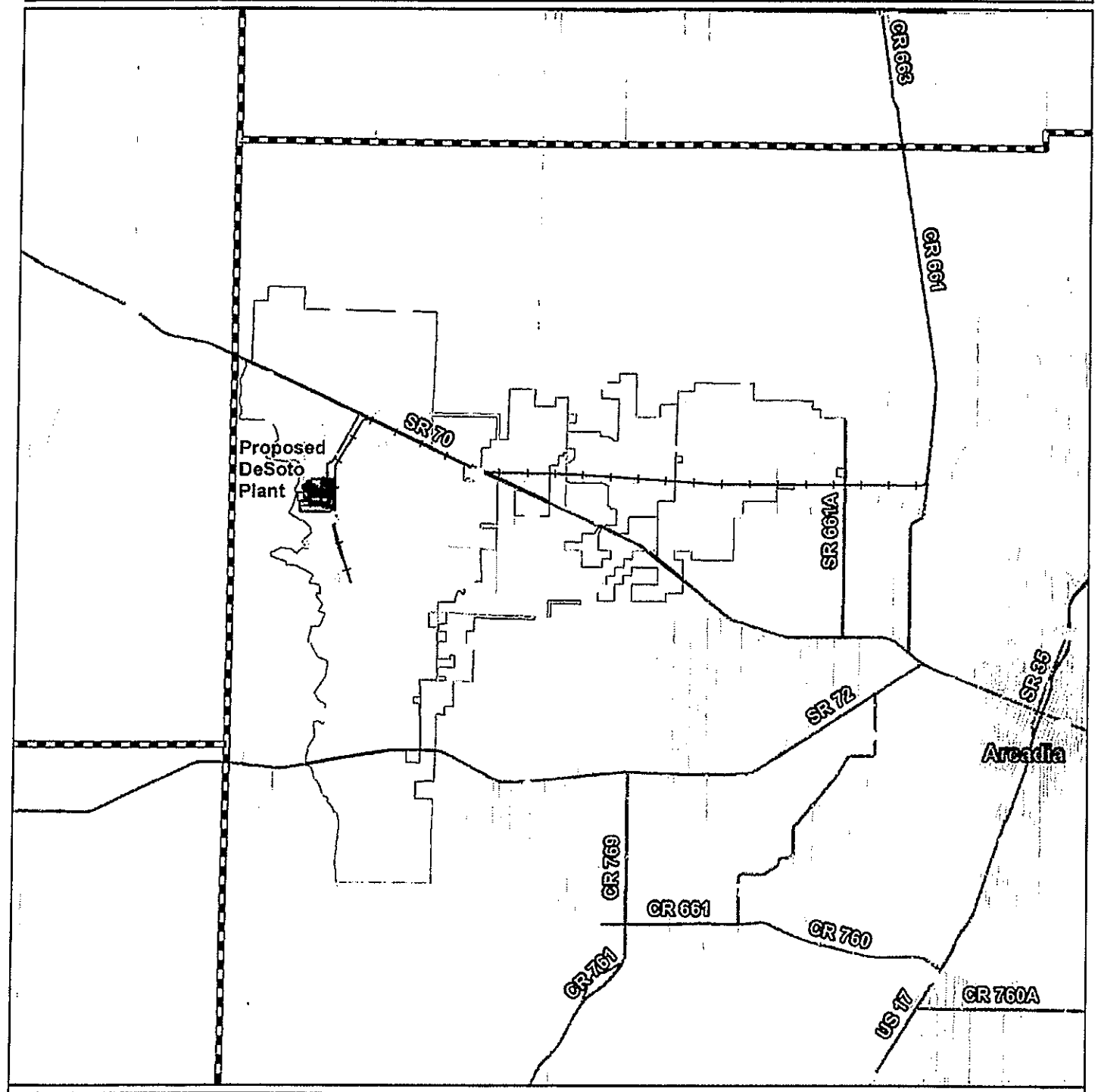
This analysis will evaluate the impact of the rail crossing on SR 70. As a worst case analysis, the impact of the rail crossing will evaluate four (4) scenarios which are as follows:

- AM Peak Hour of the Generator
- AM Street Peak Hour
- PM Peak Hour of the Generator
- PM Street Peak Hour

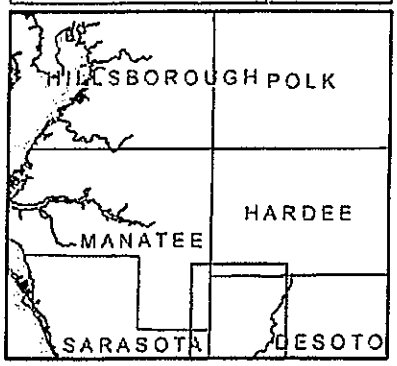
ESTIMATED PROJECT TRAFFIC

The Institute of Transportation Engineers' (ITE) Trip Generation, 9th Edition, 2012, does not contain trip generation data for a mine. Therefore, the trip generation utilized in this analysis was estimated based on data from the Four Corners Mine. The Desoto Mine is proposed to operate similar to the Four Corners Mine except the product from the Desoto Mine is to be shipped via rail, whereas the product is shipped via truck from the Four

DeSoto Mine Plant Site General Location Map



Locator Map



Legend

- Plant Site Layout
- County Lines
- Major Roads
- Minor Roads
- Railroad Alignment
- Project Boundary
- Section Lines

N
W E
S

Mosaic

Miles

0 2

Figure 1

User: ymz Date: 1/14/2013
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Corners Mine. Therefore, the following methodology was utilized to estimate the traffic associated with the Desoto Mine:

1) AM and PM peak hour counts were conducted at the Four Corners Mine entrance road to the plant.

2) During the counts in # 1, above, the number of product trucks was documented.

3) As of the date of the counts, there were 567 employees at the Four Corners Mine of which approximately 300 employees report to work at the Four Corners plant.

4) These trip rates were applied to the projected mine employees to estimate the traffic associated with the proposed Desoto Mine.

Table 1 summarizes the peak hour trip generator for the existing Four Corners Mine.

As shown in Table 2, the Desoto Mine is estimated to attract approximately 141 trip ends during the generator AM peak hour and 36 during the AM street peak hour. During the generator PM peak hour, the mine is estimated to attract 135 trip ends and 57 trip ends during the street peak hour.

PROJECT TRIP DISTRIBUTION

The following distribution of project traffic was estimated based on development in the

TABLE 1

FOUR CORNERS MINE TRIP GENERATION
[Mine Entrance Road to Four Corners Plant]

Peak Hour	Employees	Total (1)			Product Trucks (1)			Employee/Delivery		
		In	Out	Total	In	Out	Total	In	Out	Total
Generator (6-7 AM)	300	141	41	182	22	19	41	119	22	141
Street (8-9 AM)	300	41	40	81	22	23	45	19	17	36
Generator (3-4 PM)	300	45	115	160	10	15	25	35	100	135
Street (4-5 PM)	300	23	46	69	6	8	14	17	38	55

(1) Source: Video and machine count conducted by Lincks & Associates, Inc. on April 11, 2012 at the Four Corners Mine.

TABLE 2

DESOTO MINE TRIP GENERATION
[Mine Entrance Road to DeSoto Plant]

Peak Hour	Employees	Employee/Delivery Trip Ends		
		In	Out	Total
Generator (6-7 AM)	300	119	22	141
Street (8-9 AM)	300	19	17	36
Generator (3-4 PM)	300	35	100	135
Street (4-5 PM)	300	17	38	55

(1) Based on estimated trip generation at the Four Corners Mine.

vicinity of the mine:

- 50% to and from the north (via SR 70)
- 50% to and from the south (via SR 70)

ADJACENT TRANSPORTATION FACILITIES

As shown in Figure 1, the site is located south of SR 70 and east of the Manatee/Desoto County line. SR 70 is currently a two lane, undivided facility in the vicinity of the project with a posted speed limit of 60 MPH.

According to the Desoto County and FDOT five-year work programs, there are no capacity adding improvements budgeted in the vicinity of the project.

MINE LIFE

It is anticipated mining activities will start by 2021. The mine is projected to have a 15 year life. Therefore, a future year of 2036 was utilized for this analysis.

BACKGROUND TRAFFIC

The estimated mine completion is the year 2036. Therefore, the following methodology was utilized to estimate the 2036 background traffic.

1. Lincks & Associates, Inc. conducted 72-hour machine counts on SR 70 in the vicinity of the project.

   A copy of the machine counts are included in the appendix of the report.

2. The averaged machine counts in number 1, above, were adjusted to peak season based on the FDOT seasonal adjustment factors for Desoto County. See Table A-1 in the appendix of this report.

3. Based on historical FDOT counts in the vicinity of the project, there has been no historical growth in the last seven (7) years. Therefore, the peak season volumes in # 2, above, were adjusted to the year 2036 utilizing a 1.0 percent per year growth rate.

Table 3 summarizes the 2036 background plus project traffic on SR 70 in the vicinity of the project.

ARTERIAL ANALYSIS

To evaluate the impact the proposed railroad crossing would have on the operation of SR 70, the crossing was treated as if it were a signal. The characteristics were then input into the 2012 FDOT ARTPLAN software to evaluate the operation. As shown in Table 4, with the 2036 background plus project traffic, SR 70 should operate at an acceptable level of service with the addition of the proposed railroad crossing.

TABLE 3

ESTIMATED BACKGROUND + PROJECT TRAFFIC

Roadway	From	To	Time Period	2012 Pk Season Traffic (1)			2036 Backgound Traffic (2)			Project Traffic			Background +Project Traffic		
				EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
SR 70	Manatee County Line	32nd St	Generator (6-7 AM)	61	128	189	76	159	235	11	60	71	87	219	306
			Street (8-9 AM)	132	164	296	164	203	367	9	9	18	173	212	385
			Generator (3-4 PM)	166	151	317	206	187	393	50	18	68	256	205	461
			Street (4-5 PM)	175	162	337	217	201	418	20	9	29	237	210	447

(1) Source: Averaged 72 Hour machine counts conducted by Lincks & Associates, Inc on SR 70 in the vicinity of the project on 4/24-26/12 and adjusted to peak season.
(2) Esimated based on an annual growth rate of one (1) percent per year.

TABLE 4

ARTERIAL ANALYSIS

Roadway	Time Period	2036 Background Plus Project Traffic Speed	LOS
SR 70	Generator (6-7 AM)	57.15	A
	Street (8-9 AM)	57.19	A
	Generator (3-4 PM)	56.96	A
	Street (4-5 PM)	57.06	A

APPENDIX

FOUR CORNERS MACHINE COUNTS

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: EB/WB
DATE: Apr 11 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	1	3	0	0	0	0	0	10	5	0	0	0	0	19
1:00 AM	0	0	4	0	0	0	0	0	2	0	0	0	0	0	6
2:00 AM	0	0	4	0	0	0	0	0	1	0	0	0	0	0	5
3:00 AM	0	0	3	0	0	0	0	0	2	0	0	0	0	0	5
4:00 AM	0	3	12	0	0	1	0	0	8	1	0	0	0	1	26
5:00 AM	1	26	17	0	11	3	2	2	29	1	0	0	0	3	95
6:00 AM	2	71	46	0	17	2	0	4	34	0	0	0	1	5	182
7:00 AM	0	26	13	0	16	2	2	1	35	1	0	0	0	1	97
8:00 AM	0	7	11	0	11	8	3	2	38	1	0	0	0	0	81
9:00 AM	0	3	11	2	4	5	0	5	29	0	0	0	0	1	60
10:00 AM	0	7	15	3	13	6	1	0	22	0	0	0	1	0	68
11:00 AM	0	5	15	0	13	1	0	5	28	1	0	0	0	1	69
12:00 PM	3	9	20	3	8	4	1	4	21	0	0	0	0	15	88
1:00 PM	2	11	10	3	5	0	2	1	16	1	0	0	0	15	66
2:00 PM	2	10	10	2	12	5	0	8	11	0	0	0	0	19	79
3:00 PM	6	50	46	0	16	2	2	2	14	1	0	0	0	21	160
4:00 PM	1	27	18	1	4	1	0	0	13	0	0	0	0	4	69
5:00 PM	0	30	21	0	5	3	0	0	2	0	0	0	0	3	64
6:00 PM	0	6	12	0	3	1	0	0	0	0	0	0	0	0	22
7:00 PM	0	2	5	3	1	2	0	0	0	0	0	0	0	0	13
8:00 PM	0	1	3	0	1	0	0	0	0	0	0	0	0	0	5
9:00 PM	0	1	4	0	0	0	0	0	0	0	0	0	0	0	5
10:00 PM	0	1	3	0	0	0	0	0	0	0	0	0	0	0	4
11:00 PM	0	1	4	0	1	1	0	0	0	0	0	0	0	0	7
Day Total	17	298	310	17	141	47	13	34	315	12	0	0	2	89	1295
Percent	1.3%	23.0%	23.9%	1.3%	10.9%	3.6%	1.0%	2.6%	24.3%	0.9%	0.0%	0.0%	0.2%	6.9%	
ADT 1295															
AM Peak Volume	6:00 AM 2	6:00 AM 71	6:00 AM 46	10:00 AM 3	6:00 AM 17	8:00 AM 8	8:00 AM 3	9:00 AM 5	8:00 AM 38	12:00 AM 5			6:00 AM 1	6:00 AM 5	6:00 AM 182
PM Peak Volume	3:00 PM 6	3:00 PM 50	3:00 PM 46	12:00 PM 3	3:00 PM 16	2:00 PM 5	1:00 PM 2	2:00 PM 8	12:00 PM 21	1:00 PM 1				3:00 PM 21	3:00 PM 160

Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

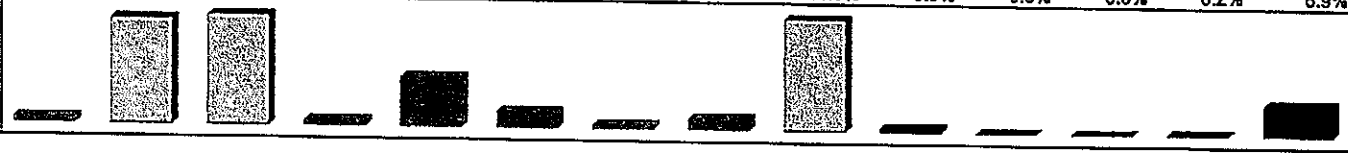
Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: EB/WB
DATE: Apr 11 2012 - Apr 11 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	17	298	310	17	141	47	13	34	315	12	0	0	2	89	1295
Percent	1.3%	23.0%	23.9%	1.3%	10.9%	3.6%	1.0%	2.6%	24.3%	0.9%	0.0%	0.0%	0.2%	6.9%	
ADT 1295															



Comments.

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: EB/WB
DATE: Apr 11 2012 - Apr 11 2012

Start Time	Mon	Tue	Wed 11-Apr-12	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			19			19			19	
1:00 AM			6			6			6	
2:00 AM			5			5			5	
3:00 AM			5			5			5	
4:00 AM			26			26			26	
5:00 AM			95			95			95	
6:00 AM			182			182			182	
7:00 AM			97			97			97	
8:00 AM			81			81			81	
9:00 AM			60			60			60	
10:00 AM			68			68			68	
11:00 AM			69			69			69	
12:00 PM			88			88			88	
1:00 PM			66			66			66	
2:00 PM			79			79			79	
3:00 PM			160			160			160	
4:00 PM			69			69			69	
5:00 PM			64			64			64	
6:00 PM			22			22			22	
7:00 PM			13			13			13	
8:00 PM			5			5			5	
9:00 PM			5			5			5	
10:00 PM			4			4			4	
11:00 PM			7			7			7	
Day Total			1295			1295			1295	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			6:00 AM 182			6:00 AM 182			6:00 AM 182	
PM Peak Volume			3:00 PM 160			3:00 PM 160			3:00 PM 160	

Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: WB
DATE: Apr 11 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	0	2	0	0	0	0	0	2	0	0	0	0	0	4
1:00 AM	0	0	2	0	0	0	0	0	1	0	0	0	0	0	3
2:00 AM	0	0	2	0	0	0	0	0	1	0	0	0	0	0	3
3:00 AM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2
4:00 AM	0	3	10	0	0	1	0	0	6	0	0	0	0	0	20
5:00 AM	1	18	12	0	9	2	0	1	17	0	0	0	0	1	61
6:00 AM	2	63	39	0	16	2	0	2	16	0	0	0	1	0	141
7:00 AM	0	20	7	0	9	1	0	0	19	0	0	0	0	0	56
8:00 AM	0	6	6	0	5	4	0	1	19	0	0	0	0	0	41
9:00 AM	0	2	6	2	1	2	0	3	15	0	0	0	0	0	31
10:00 AM	0	4	6	1	8	3	0	0	9	0	0	0	0	0	31
11:00 AM	0	1	6	0	6	0	0	4	13	0	0	0	0	1	31
12:00 PM	3	6	8	2	5	4	0	2	10	0	0	0	0	13	53
1:00 PM	2	6	2	1	1	0	0	0	6	0	0	0	0	14	32
2:00 PM	2	2	6	1	6	4	0	6	5	0	0	0	0	19	51
3:00 PM	3	2	12	0	3	0	0	2	2	0	0	0	0	21	45
4:00 PM	1	6	5	1	1	0	0	0	5	0	0	0	0	4	23
5:00 PM	0	7	4	0	0	3	0	0	1	0	0	0	0	1	16
6:00 PM	0	2	4	0	1	0	0	0	0	0	0	0	0	0	7
7:00 PM	0	0	3	2	0	1	0	0	0	0	0	0	0	0	6
8:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
9:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
10:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
11:00 PM	0	0	2	0	1	0	0	0	0	0	0	0	0	0	3
Day Total	14	149	149	10	72	27	0	21	148	0	0	0	1	74	665
Percent	2.1%	22.4%	22.4%	1.5%	10.8%	4.1%	0.0%	3.2%	22.3%	0.0%	0.0%	0.0%	0.2%	11.1%	
ADT 665															
AM Peak Volume	6:00 AM 2	6:00 AM 63	6:00 AM 39	9:00 AM 2	6:00 AM 16	8:00 AM 4		11:00 AM 4	7:00 AM 19				6:00 AM 1	5:00 AM 1	6:00 AM 141
PM Peak Volume	12:00 PM 3	5:00 PM 7	3:00 PM 12	12:00 PM 2	2:00 PM 6	12:00 PM 4		2:00 PM 6	12:00 PM 10					3:00 PM 21	12:00 PM 53

Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

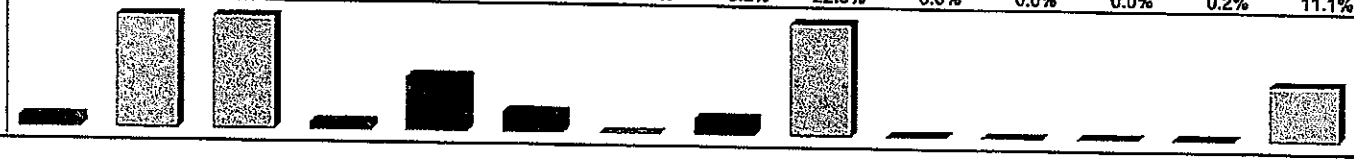
Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: WB
DATE: Apr 11 2012 - Apr 11 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	14	149	149	10	72	27	0	21	148	0	0	0	1	74	665
Percent	2.1%	22.4%	22.4%	1.5%	10.8%	4.1%	0.0%	3.2%	22.3%	0.0%	0.0%	0.0%	0.2%	11.1%	
ADT 665															



Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: WB
DATE: Apr 11 2012 - Apr 11 2012

Start Time	Mon	Tue	Wed 11-Apr-12	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			4			4			4	
1:00 AM			3			3			3	
2:00 AM			3			3			3	
3:00 AM			2			2			2	
4:00 AM			20			20			20	
5:00 AM			61			61			61	
6:00 AM			141			141			141	
7:00 AM			56			56			56	
8:00 AM			41			41			41	
9:00 AM			31			31			31	
10:00 AM			31			31			31	
11:00 AM			31			31			31	
12:00 PM			53			53			53	
1:00 PM			32			32			32	
2:00 PM			51			51			51	
3:00 PM			45			45			45	
4:00 PM			23			23			23	
5:00 PM			16			16			16	
6:00 PM			7			7			7	
7:00 PM			6			6			6	
8:00 PM			2			2			2	
9:00 PM			2			2			2	
10:00 PM			1			1			1	
11:00 PM			3			3			3	
Day Total			665			665			665	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			6:00 AM 141			6:00 AM 141			6:00 AM 141	
PM Peak Volume			12:00 PM 53			12:00 PM 53			12:00 PM 53	

Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: EB
DATE: Apr 11 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	1	1	0	0	0	0	0	8	5	0	0	0	0	15
1:00 AM	0	0	2	0	0	0	0	0	1	0	0	0	0	0	3
2:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:00 AM	0	0	2	0	0	0	0	0	1	0	0	0	0	0	3
4:00 AM	0	0	2	0	0	0	0	0	2	1	0	0	0	1	6
5:00 AM	0	8	5	0	2	1	2	1	12	1	0	0	0	2	34
6:00 AM	0	8	7	0	1	0	0	2	18	0	0	0	0	5	41
7:00 AM	0	6	6	0	7	1	2	1	16	1	0	0	0	1	41
8:00 AM	0	1	5	0	6	4	3	1	19	1	0	0	0	0	40
9:00 AM	0	1	5	0	3	3	0	2	14	0	0	0	0	1	29
10:00 AM	0	3	9	2	5	3	1	0	13	0	0	0	1	0	37
11:00 AM	0	4	9	0	7	1	0	1	15	1	0	0	0	0	38
12:00 PM	0	3	12	1	3	0	1	2	11	0	0	0	0	2	35
1:00 PM	0	5	8	2	4	0	2	1	10	1	0	0	0	1	34
2:00 PM	0	8	4	1	6	1	0	2	6	0	0	0	0	0	28
3:00 PM	3	48	34	0	13	2	2	0	12	1	0	0	0	0	115
4:00 PM	0	21	13	0	3	1	0	0	8	0	0	0	0	0	46
5:00 PM	0	23	17	0	5	0	0	0	1	0	0	0	0	2	48
6:00 PM	0	4	8	0	2	1	0	0	0	0	0	0	0	0	15
7:00 PM	0	2	2	1	1	1	0	0	0	0	0	0	0	0	7
8:00 PM	0	1	1	0	1	0	0	0	0	0	0	0	0	0	3
9:00 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
10:00 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
11:00 PM	0	1	2	0	0	1	0	0	0	0	0	0	0	0	4
Day Total	3	149	161	7	69	20	13	13	167	12	0	0	1	15	630
Percent	0.5%	23.7%	25.6%	1.1%	11.0%	3.2%	2.1%	2.1%	26.5%	1.9%	0.0%	0.0%	0.2%	2.4%	
ADT 630															
AM Peak Volume		5:00 AM 8	10:00 AM 9	10:00 AM 2	7:00 AM 7	8:00 AM 4	8:00 AM 3	6:00 AM 2	8:00 AM 19	12:00 AM 5			10:00 AM 1	6:00 AM 5	6:00 AM 41
PM Peak Volume	3:00 PM 3	3:00 PM 48	3:00 PM 34	1:00 PM 2	3:00 PM 13	3:00 PM 2	1:00 PM 2	12:00 PM 2	3:00 PM 12	1:00 PM 1				12:00 PM 2	3:00 PM 115

Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

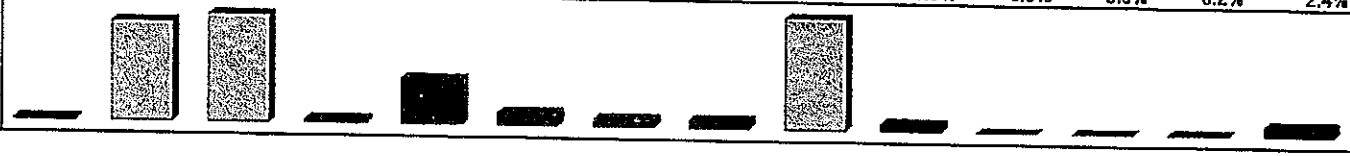
Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: EB
DATE: Apr 11 2012 - Apr 11 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	3	149	161	7	69	20	13	13	167	12	0	0	1	15	630
Percent	0.5%	23.7%	25.6%	1.1%	11.0%	3.2%	2.1%	2.1%	26.5%	1.9%	0.0%	0.0%	0.2%	2.4%	
ADT 630															



Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Four Corner Mine Rd west of SR 37 (west of split)
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Duette, FL

QC JOB #: 10728701
DIRECTION: EB
DATE: Apr 11 2012 - Apr 11 2012

Start Time	Mon	Tue	Wed 11-Apr-12	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			15			15			15	
1:00 AM			3			3			3	
2:00 AM			2			2			2	
3:00 AM			3			3			3	
4:00 AM			6			6			6	
5:00 AM			34			34			34	
6:00 AM			41			41			41	
7:00 AM			41			41			41	
8:00 AM			40			40			40	
9:00 AM			29			29			29	
10:00 AM			37			37			37	
11:00 AM			38			38			38	
12:00 PM			35			35			35	
1:00 PM			34			34			34	
2:00 PM			28			28			28	
3:00 PM			115			115			115	
4:00 PM			46			46			46	
5:00 PM			48			48			48	
6:00 PM			15			15			15	
7:00 PM			7			7			7	
8:00 PM			3			3			3	
9:00 PM			3			3			3	
10:00 PM			3			3			3	
11:00 PM			4			4			4	
Day Total			630			630			630	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			6:00 AM 41			6:00 AM 41			6:00 AM 41	
PM Peak Volume			3:00 PM 115			3:00 PM 115			3:00 PM 115	

Comments:

Report generated on 4/17/2012 9:13 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

FOUR CORNERS MINE ROAD

TRUCK COUNT
(Video dated April 11, 2012)

		Number of Trucks		
		In	Out	Total
6-6:15	AM	8	4	12
6:15-6:30	AM	4	7	11
6:30-6:45	AM	5	4	9
6:45-7	AM	5	4	9
8-8:15	AM	8	2	10
8:15-8:30	AM	5	6	11
8:30-8:45	AM	6	7	13
8:45-9	AM	3	8	11
3-3:15	PM	3	8	11
3:15-3:30	PM	2	3	5
3:30-3:45	PM	2	1	3
3:45-4	PM	3	3	6
4-4:15	PM	2	3	5
4:15-4:30	PM	4	1	5
4:30-4:45	PM	0	3	3
4:45-5	PM	0	1	1

SR 70 MACHINE COUNTS

Type of report: Tube Count - Vehicle Classification Data

LOCATION: SR 70 east of Manatee/Desoto County Line
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Desoto, FL

QC JOB #: 10753701
DIRECTION: EB/WB
DATE: Apr 24 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	1	4	0	1	0	1	0	0	10	0	0	0	0	0	17
1:00 AM	0	4	4	1	0	0	0	0	14	0	0	0	0	1	24
2:00 AM	0	4	1	0	2	0	0	3	7	1	0	0	0	0	18
3:00 AM	0	4	1	0	1	0	0	3	15	1	0	0	0	0	25
4:00 AM	0	10	7	2	3	0	0	3	14	0	0	0	0	1	40
5:00 AM	0	37	15	3	9	1	0	5	14	1	0	0	0	1	86
6:00 AM	1	68	45	10	8	2	0	7	29	0	0	0	0	2	172
7:00 AM	0	98	55	23	26	2	0	11	34	0	0	0	0	6	255
8:00 AM	2	83	59	14	18	6	13	12	48	4	0	0	0	11	270
9:00 AM	0	78	56	8	22	11	3	13	33	1	0	0	0	6	231
10:00 AM	1	90	47	3	12	7	7	9	57	2	0	0	0	7	242
11:00 AM	0	85	40	6	15	8	8	11	45	0	0	0	0	7	225
12:00 PM	5	88	47	15	16	12	8	10	57	3	0	0	0	12	273
1:00 PM	2	95	42	8	11	5	4	14	50	1	0	0	0	8	240
2:00 PM	0	104	45	5	18	6	4	11	75	1	0	0	0	12	281
3:00 PM	1	126	57	9	30	6	4	7	52	1	0	0	0	7	300
4:00 PM	3	149	62	23	19	7	1	10	49	1	0	0	0	9	333
5:00 PM	0	146	60	13	19	1	0	5	42	0	0	0	0	3	289
6:00 PM	0	102	35	5	8	1	0	2	31	0	0	0	0	1	185
7:00 PM	1	58	43	7	7	1	0	6	45	0	0	0	0	2	170
8:00 PM	0	61	15	2	7	0	0	2	26	0	0	0	0	2	115
9:00 PM	2	39	11	2	4	4	0	3	25	0	0	0	0	4	94
10:00 PM	0	29	9	3	3	0	0	2	13	0	0	0	0	2	61
11:00 PM	0	17	9	2	1	0	0	1	8	0	0	0	1	0	39
Day Total	19	1579	765	165	259	81	52	150	793	17	0	0	1	104	3985
Percent	0.5%	39.6%	19.2%	4.1%	6.5%	2.0%	1.3%	3.8%	19.9%	0.4%	0.0%	0.0%	0.0%	2.6%	
ADT 3985															
AM Peak Volume	8:00 AM 2	7:00 AM 98	8:00 AM 59	7:00 AM 23	7:00 AM 26	9:00 AM 11	8:00 AM 13	9:00 AM 13	10:00 AM 57	8:00 AM 4				8:00 AM 11	8:00 AM 270
PM Peak Volume	12:00 PM 5	4:00 PM 149	4:00 PM 62	4:00 PM 23	3:00 PM 30	12:00 PM 12	12:00 PM 8	1:00 PM 14	2:00 PM 75	12:00 PM 3			11:00 PM 1	12:00 PM 12	4:00 PM 333

Comments:

Report generated on 5/1/2012 3:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: SR 70 east of Manatee/Desoto County Line
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Desoto, FL

QC JOB #: 10753701
DIRECTION: EB/WB
DATE: Apr 25 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	7	0	0	0	0	0	0	16	0	0	0	0	0	23
1:00 AM	0	6	3	0	1	0	0	0	6	0	0	0	0	1	17
2:00 AM	0	4	2	0	2	0	0	4	7	0	0	0	0	1	20
3:00 AM	0	4	2	1	2	0	0	2	14	1	0	0	0	1	27
4:00 AM	0	13	9	0	1	0	0	3	8	0	0	0	0	0	34
5:00 AM	0	34	25	2	9	1	0	6	24	0	0	0	0	1	102
6:00 AM	0	70	46	11	13	7	0	9	23	1	0	0	0	2	182
7:00 AM	0	111	51	12	17	3	7	8	26	3	0	0	1	4	243
8:00 AM	0	96	72	12	24	12	4	16	48	1	0	0	0	6	291
9:00 AM	0	89	45	8	18	8	9	6	46	1	0	0	0	6	236
10:00 AM	7	91	45	6	13	4	10	14	51	2	0	0	0	8	251
11:00 AM	4	98	30	7	18	16	5	7	60	5	0	0	0	7	257
12:00 PM	8	93	42	7	22	10	5	18	51	3	0	0	0	10	269
1:00 PM	2	91	40	9	14	7	3	8	61	1	0	0	0	7	243
2:00 PM	5	91	50	13	19	12	8	14	48	3	0	0	1	12	276
3:00 PM	0	105	58	12	18	7	1	20	53	0	0	0	0	10	284
4:00 PM	5	127	63	18	21	4	3	12	43	1	0	0	0	9	306
5:00 PM	3	123	72	9	21	5	0	7	38	0	0	0	0	3	281
6:00 PM	1	97	43	12	15	2	0	5	35	0	0	0	0	6	216
7:00 PM	1	75	32	5	11	0	0	5	27	0	0	0	0	4	160
8:00 PM	1	43	20	5	13	2	0	7	31	0	0	0	0	3	125
9:00 PM	0	36	14	2	8	0	0	5	20	0	0	0	0	2	87
10:00 PM	0	31	18	2	5	0	0	3	15	0	0	0	0	1	75
11:00 PM	1	20	6	1	0	0	0	1	10	0	0	0	0	1	40
Day Total	38	1555	788	154	285	100	55	180	761	22	0	0	2	105	4045
Percent	0.9%	38.4%	19.5%	3.8%	7.0%	2.5%	1.4%	4.4%	18.8%	0.5%	0.0%	0.0%	0.0%	2.6%	
ADT 4045															
AM Peak Volume	10:00 AM 7	7:00 AM 111	8:00 AM 72	7:00 AM 12	8:00 AM 24	11:00 AM 16	10:00 AM 10	8:00 AM 16	11:00 AM 60	11:00 AM 5			7:00 AM 1	10:00 AM 8	8:00 AM 291
PM Peak Volume	12:00 PM 8	4:00 PM 127	5:00 PM 72	4:00 PM 18	12:00 PM 22	2:00 PM 12	2:00 PM 8	3:00 PM 20	1:00 PM 61	12:00 PM 3			2:00 PM 1	2:00 PM 12	4:00 PM 306

Comments:

Report generated on 5/1/2012 3:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: SR 70 east of Manatee/Desoto County Line
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Desoto, FL

QC JOB #: 10753701
DIRECTION: EB/WB
DATE: Apr 26 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	1	12	3	1	2	0	0	1	9	0	0	0	0	1	30
1:00 AM	1	11	1	1	0	0	0	1	8	0	0	0	0	0	23
2:00 AM	0	2	3	0	0	0	0	2	9	0	0	0	0	0	16
3:00 AM	0	5	1	1	0	0	0	1	12	2	0	0	0	0	22
4:00 AM	0	9	2	1	0	1	0	7	10	0	0	0	0	2	32
5:00 AM	0	21	17	7	13	3	0	4	16	1	0	0	0	2	84
6:00 AM	2	67	48	12	15	1	2	4	22	1	0	0	0	3	177
7:00 AM	0	95	73	28	33	8	5	7	31	2	0	0	0	3	285
8:00 AM	1	109	58	13	17	11	5	8	34	1	0	0	1	9	267
9:00 AM	4	79	38	5	15	12	6	11	40	1	0	0	1	6	218
10:00 AM	0	80	45	12	12	6	6	7	40	1	0	0	1	1	211
11:00 AM	4	79	40	9	19	6	6	8	56	0	0	0	0	12	239
12:00 PM	4	89	29	5	20	3	3	13	54	2	0	0	2	6	230
1:00 PM	5	92	51	10	15	8	5	13	50	0	0	0	0	11	260
2:00 PM	3	83	52	16	20	8	3	11	49	0	0	0	0	8	253
3:00 PM	2	117	53	28	29	2	2	13	48	1	0	0	0	10	305
4:00 PM	1	137	69	16	21	6	3	13	31	0	0	0	0	9	306
5:00 PM	2	137	63	12	27	6	0	11	30	0	0	0	0	13	301
6:00 PM	1	95	51	5	20	8	0	7	36	0	0	0	0	9	232
7:00 PM	3	66	31	11	13	3	0	1	21	0	0	0	0	1	150
8:00 PM	0	57	27	3	3	2	0	8	32	1	0	0	0	2	135
9:00 PM	2	46	16	4	2	3	0	1	20	0	0	0	0	1	95
10:00 PM	0	27	13	1	7	0	0	1	18	0	0	0	0	0	67
11:00 PM	0	13	6	2	1	0	0	1	14	0	0	0	0	0	37
Day Total	36	1528	790	203	304	97	46	154	690	13	0	0	5	109	3975
Percent	0.9%	38.4%	19.9%	5.1%	7.6%	2.4%	1.2%	3.9%	17.4%	0.3%	0.0%	0.0%	0.1%	2.7%	
ADT 3975															
AM Peak Volume	9:00 AM 4	8:00 AM 109	7:00 AM 73	7:00 AM 28	7:00 AM 33	9:00 AM 12	9:00 AM 6	9:00 AM 11	11:00 AM 56	3:00 AM 2			8:00 AM 1	11:00 AM 12	7:00 AM 285
PM Peak Volume	1:00 PM 5	4:00 PM 137	4:00 PM 69	3:00 PM 28	3:00 PM 29	1:00 PM 8	1:00 PM 5	12:00 PM 13	12:00 PM 54	12:00 PM 2			12:00 PM 2	5:00 PM 13	4:00 PM 306

Comments:

Report generated on 5/1/2012 3:21 PM

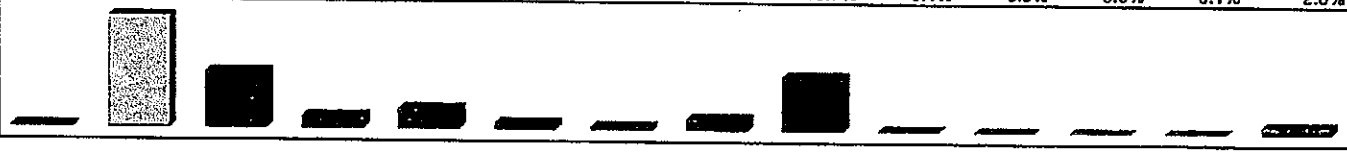
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: SR 70 east of Manatee/Desoto County Line
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Desoto, FL

QC JOB #: 10753701
DIRECTION: EB/WB
DATE: Apr 24 2012 - Apr 26 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	93	4662	2343	522	848	278	153	484	2244	52	0	0	8	318	12005
Percent	0.8%	38.8%	19.5%	4.3%	7.1%	2.3%	1.3%	4.0%	18.7%	0.4%	0.0%	0.0%	0.1%	2.6%	
ADT 4001															



Comments:

Report generated on 5/1/2012 3:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: SR 70 east of Manatee/Desoto County Line
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Desoto, FL

QC JOB #: 10753701
DIRECTION: EB
DATE: Apr 24 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	1	3	0	1	0	1	0	0	5	0	0	0	0	0	11
1:00 AM	0	4	1	1	0	0	0	0	6	0	0	0	0	1	13
2:00 AM	0	2	0	0	2	0	0	3	4	1	0	0	0	0	12
3:00 AM	0	1	1	0	0	0	0	2	12	1	0	0	0	0	17
4:00 AM	0	4	2	1	2	0	0	0	8	0	0	0	0	1	18
5:00 AM	0	12	2	0	1	1	0	4	4	1	0	0	0	1	26
6:00 AM	1	14	16	2	3	2	0	4	14	0	0	0	0	2	58
7:00 AM	0	43	24	2	11	1	0	5	16	0	0	0	0	5	107
8:00 AM	1	40	15	4	9	4	0	2	24	0	0	0	0	4	103
9:00 AM	0	41	21	0	9	9	1	7	8	1	0	0	0	2	99
10:00 AM	0	57	26	3	6	5	0	5	31	2	0	0	0	5	140
11:00 AM	0	56	20	1	5	5	0	4	18	0	0	0	0	5	114
12:00 PM	3	45	19	9	9	10	0	4	18	0	0	0	0	3	120
1:00 PM	1	52	22	6	5	4	1	7	28	0	0	0	0	4	130
2:00 PM	0	49	22	4	13	1	0	9	41	0	0	0	0	7	146
3:00 PM	1	64	32	6	17	4	1	4	24	1	0	0	0	4	158
4:00 PM	0	79	40	19	11	5	0	4	19	0	0	0	0	3	180
5:00 PM	0	76	36	6	9	0	0	2	15	0	0	0	0	1	145
6:00 PM	0	60	27	3	6	0	0	2	12	0	0	0	0	0	110
7:00 PM	0	35	29	3	4	1	0	4	23	0	0	0	0	1	100
8:00 PM	0	23	4	0	3	0	0	0	13	0	0	0	0	2	45
9:00 PM	2	19	8	0	2	3	0	3	10	0	0	0	0	2	49
10:00 PM	0	20	3	2	1	0	0	1	4	0	0	0	0	1	32
11:00 PM	0	9	3	2	1	0	0	1	2	0	0	0	1	0	19
Day Total	10	808	373	75	129	56	3	77	359	7	0	0	1	54	1952
Percent	0.5%	41.4%	19.1%	3.8%	6.6%	2.9%	0.2%	3.9%	18.4%	0.4%	0.0%	0.0%	0.1%	2.8%	
ADT 1952															
AM Peak Volume	12:00 AM 1	10:00 AM 57	10:00 AM 26	8:00 AM 4	7:00 AM 11	9:00 AM 9	9:00 AM 1	9:00 AM 7	10:00 AM 31	10:00 AM 2				7:00 AM 5	10:00 AM 140
PM Peak Volume	12:00 PM 3	4:00 PM 79	4:00 PM 40	4:00 PM 19	3:00 PM 17	12:00 PM 10	1:00 PM 1	2:00 PM 9	2:00 PM 41	3:00 PM 1			11:00 PM 1	2:00 PM 7	4:00 PM 180

Comments:

Report generated on 5/1/2012 3:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: SR 70 east of Manatee/Desoto County Line
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Desoto, FL

QC JOB #: 10753701
DIRECTION: EB
DATE: Apr 25 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>5 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	4	0	0	0	0	0	0	11	0	0	0	0	0	15
1:00 AM	0	2	0	0	0	0	0	0	2	0	0	0	0	1	5
2:00 AM	0	2	0	0	1	0	0	3	4	0	0	0	0	1	11
3:00 AM	0	2	1	1	0	0	0	1	8	1	0	0	0	1	15
4:00 AM	0	2	5	0	1	0	0	3	3	0	0	0	0	0	14
5:00 AM	0	7	4	0	3	1	0	5	9	0	0	0	0	0	29
6:00 AM	0	20	14	2	2	5	0	5	12	0	0	0	0	2	62
7:00 AM	0	58	17	1	10	3	0	1	13	0	0	0	1	2	106
8:00 AM	0	54	28	5	11	11	1	8	29	1	0	0	0	4	152
9:00 AM	0	48	22	5	6	4	0	2	15	0	0	0	0	2	104
10:00 AM	1	54	18	2	7	3	1	7	21	1	0	0	0	4	119
11:00 AM	0	46	12	1	5	12	0	3	23	2	0	0	0	1	105
12:00 PM	5	45	15	5	14	8	0	9	22	1	0	0	0	8	132
1:00 PM	0	45	18	2	6	4	1	4	24	0	0	0	0	5	109
2:00 PM	0	41	26	8	10	10	0	6	19	0	0	0	1	3	124
3:00 PM	0	50	26	6	6	5	0	8	26	0	0	0	0	7	134
4:00 PM	3	67	38	6	10	2	0	2	15	0	0	0	0	5	148
5:00 PM	1	70	42	4	10	4	0	2	22	0	0	0	0	0	155
6:00 PM	0	53	33	4	9	1	0	3	15	0	0	0	0	2	120
7:00 PM	0	42	14	4	8	0	0	2	17	0	0	0	0	1	88
8:00 PM	1	23	10	0	7	2	0	2	20	0	0	0	0	1	66
9:00 PM	0	23	8	0	4	0	0	3	7	0	0	0	0	1	46
10:00 PM	0	20	8	1	3	0	0	1	9	0	0	0	0	0	42
11:00 PM	1	13	3	1	0	0	0	0	3	0	0	0	0	1	22
Day Total	12	791	362	58	133	75	3	80	349	6	0	0	2	52	1923
Percent	0.6%	41.1%	18.8%	3.0%	6.9%	3.9%	0.2%	4.2%	18.1%	0.3%	0.0%	0.0%	0.1%	2.7%	
ADT 1923															
AM Peak Volume	10:00 AM 1	7:00 AM 58	8:00 AM 28	8:00 AM 5	8:00 AM 11	11:00 AM 12	8:00 AM 1	8:00 AM 8	8:00 AM 29	11:00 AM 2			7:00 AM 1	8:00 AM 4	8:00 AM 152
PM Peak Volume	12:00 PM 5	5:00 PM 70	5:00 PM 42	2:00 PM 8	12:00 PM 14	2:00 PM 10	1:00 PM 1	12:00 PM 9	3:00 PM 26	12:00 PM 1			2:00 PM 1	12:00 PM 8	5:00 PM 155

Comments:

Report generated on 5/1/2012 3:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: SR 70 east of Manatee/Desoto County Line
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Desoto, FL

QC JOB #: 10753701
DIRECTION: EB
DATE: Apr 26 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	1	6	1	0	1	0	0	0	5	0	0	0	0	0	14
1:00 AM	1	3	1	1	0	0	0	1	7	0	0	0	0	0	14
2:00 AM	0	2	2	0	0	0	0	2	8	0	0	0	0	0	14
3:00 AM	0	2	1	1	0	0	0	0	8	2	0	0	0	0	14
4:00 AM	0	2	1	1	0	1	0	6	4	0	0	0	0	2	17
5:00 AM	0	3	1	2	4	3	0	3	9	0	0	0	0	0	25
6:00 AM	1	17	14	2	3	1	0	1	9	1	0	0	0	1	50
7:00 AM	0	40	23	4	9	3	0	2	14	1	0	0	0	1	97
8:00 AM	0	50	18	2	6	7	0	5	20	0	0	0	1	5	114
9:00 AM	2	56	11	3	7	12	1	5	25	0	0	0	1	1	124
10:00 AM	0	38	31	5	5	3	0	4	23	0	0	0	1	1	111
11:00 AM	1	37	17	3	7	5	0	3	17	0	0	0	0	9	99
12:00 PM	3	43	12	1	8	3	1	9	25	0	0	0	2	2	109
1:00 PM	2	55	25	3	6	3	0	9	26	0	0	0	0	7	136
2:00 PM	1	55	21	9	10	7	0	5	20	0	0	0	0	4	132
3:00 PM	0	72	35	21	15	1	0	7	17	0	0	0	0	6	174
4:00 PM	0	76	43	9	9	3	0	5	15	0	0	0	0	4	164
5:00 PM	0	73	37	4	15	3	0	5	15	0	0	0	0	5	157
6:00 PM	0	48	34	4	12	4	0	2	19	0	0	0	0	5	128
7:00 PM	3	40	15	8	8	1	0	1	13	0	0	0	0	1	90
8:00 PM	0	28	9	1	1	1	0	3	22	1	0	0	0	0	66
9:00 PM	2	28	7	1	2	2	0	0	17	0	0	0	0	0	59
10:00 PM	0	15	5	1	2	0	0	0	8	0	0	0	0	0	31
11:00 PM	0	8	5	1	0	0	0	0	8	0	0	0	0	0	22
Day Total	17	797	369	87	130	63	2	78	354	5	0	0	5	54	1961
Percent	0.9%	40.6%	18.8%	4.4%	6.6%	3.2%	0.1%	4.0%	18.1%	0.3%	0.0%	0.0%	0.3%	2.8%	
ADT 1961															
AM Peak Volume	9:00 AM 2	9:00 AM 56	10:00 AM 31	10:00 AM 5	7:00 AM 9	9:00 AM 12	9:00 AM 1	4:00 AM 6	9:00 AM 25	3:00 AM 2			8:00 AM 1	11:00 AM 9	9:00 AM 124
PM Peak Volume	12:00 PM 3	4:00 PM 76	4:00 PM 43	3:00 PM 21	3:00 PM 15	2:00 PM 7	12:00 PM 1	12:00 PM 9	1:00 PM 26	8:00 PM 1			12:00 PM 2	1:00 PM 7	3:00 PM 174

Comments:

Report generated on 5/1/2012 3:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: SR 70 east of Manatee/Desoto County Line
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Desoto, FL

QC JOB #: 10753701
DIRECTION: EB
DATE: Apr 24 2012 - Apr 26 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	39	2396	1104	220	392	194	8	235	1062	18	0	0	8	160	5836
Percent	0.7%	41.1%	18.9%	3.8%	6.7%	3.3%	0.1%	4.0%	18.2%	0.3%	0.0%	0.0%	0.1%	2.7%	
ADT 1945															

Comments:

Report generated on 5/1/2012 3:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: SR 70 east of Manatee/Desoto County Line
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Desoto, FL

QC JOB #: 10753701
DIRECTION: WB
DATE: Apr 24 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	1	0	0	0	0	0	0	5	0	0	0	0	0	6
1:00 AM	0	0	3	0	0	0	0	0	8	0	0	0	0	0	11
2:00 AM	0	2	1	0	0	0	0	0	3	0	0	0	0	0	6
3:00 AM	0	3	0	0	1	0	0	1	3	0	0	0	0	0	8
4:00 AM	0	6	5	1	1	0	0	3	6	0	0	0	0	0	22
5:00 AM	0	25	13	3	8	0	0	1	10	0	0	0	0	0	60
6:00 AM	0	54	29	8	5	0	0	3	15	0	0	0	0	0	114
7:00 AM	0	55	31	21	15	1	0	6	18	0	0	0	0	1	148
8:00 AM	1	43	44	10	9	2	13	10	24	4	0	0	0	7	167
9:00 AM	0	37	35	8	13	2	2	6	25	0	0	0	0	4	132
10:00 AM	1	33	21	0	6	2	7	4	26	0	0	0	0	2	102
11:00 AM	0	29	20	5	10	3	8	7	27	0	0	0	0	2	111
12:00 PM	2	43	28	6	7	2	8	6	39	3	0	0	0	9	153
1:00 PM	1	43	20	2	6	1	3	7	22	1	0	0	0	4	110
2:00 PM	0	55	23	1	5	5	4	2	34	1	0	0	0	5	135
3:00 PM	0	62	25	3	13	2	3	3	28	0	0	0	0	3	142
4:00 PM	3	70	22	4	8	2	1	6	30	1	0	0	0	6	153
5:00 PM	0	70	24	7	10	1	0	3	27	0	0	0	0	2	144
6:00 PM	0	42	8	2	2	1	0	0	19	0	0	0	0	1	75
7:00 PM	1	23	14	4	3	0	0	2	22	0	0	0	0	1	70
8:00 PM	0	38	11	2	4	0	0	2	13	0	0	0	0	0	70
9:00 PM	0	20	3	2	2	1	0	0	15	0	0	0	0	2	45
10:00 PM	0	9	6	1	2	0	0	1	9	0	0	0	0	1	29
11:00 PM	0	8	6	0	0	0	0	0	6	0	0	0	0	0	20
Day Total	9	771	392	90	130	25	49	73	434	10	0	0	0	50	2033
Percent	0.4%	37.9%	19.3%	4.4%	6.4%	1.2%	2.4%	3.6%	21.3%	0.5%	0.0%	0.0%	0.0%	2.5%	
ADT 2033															
AM Peak Volume	8:00 AM 1	7:00 AM 55	8:00 AM 44	7:00 AM 21	7:00 AM 15	11:00 AM 3	8:00 AM 13	8:00 AM 10	11:00 AM 27	8:00 AM 4				8:00 AM 7	8:00 AM 167
PM Peak Volume	4:00 PM 3	4:00 PM 70	12:00 PM 28	5:00 PM 7	3:00 PM 13	2:00 PM 5	12:00 PM 8	1:00 PM 7	12:00 PM 39	12:00 PM 3				12:00 PM 9	12:00 PM 153

Comments:

Report generated on 5/1/2012 3:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: SR 70 east of Manatee/Desoto County Line
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Desoto, FL

QC JOB #: 10753701
DIRECTION: WB
DATE: Apr 25 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	3	0	0	0	0	0	0	5	0	0	0	0	0	8
1:00 AM	0	4	3	0	1	0	0	0	4	0	0	0	0	0	12
2:00 AM	0	2	2	0	1	0	0	1	3	0	0	0	0	0	9
3:00 AM	0	2	1	0	2	0	0	1	6	0	0	0	0	0	12
4:00 AM	0	11	4	0	0	0	0	0	5	0	0	0	0	0	20
5:00 AM	0	27	21	2	6	0	0	1	15	0	0	0	0	1	73
6:00 AM	0	50	32	9	11	2	0	4	11	1	0	0	0	0	120
7:00 AM	0	53	34	11	7	0	7	7	13	3	0	0	0	2	137
8:00 AM	0	42	44	7	13	1	3	8	19	0	0	0	0	2	139
9:00 AM	0	41	23	3	12	4	9	4	31	1	0	0	0	4	132
10:00 AM	6	37	27	4	6	1	9	7	30	1	0	0	0	4	132
11:00 AM	4	52	18	6	13	4	5	4	37	3	0	0	0	6	152
12:00 PM	3	48	27	2	8	2	5	9	29	2	0	0	0	2	137
1:00 PM	2	46	22	7	8	3	2	4	37	1	0	0	0	2	134
2:00 PM	5	50	24	5	9	2	8	8	29	3	0	0	0	9	152
3:00 PM	0	55	32	6	12	2	1	12	27	0	0	0	0	3	150
4:00 PM	2	60	25	12	11	2	3	10	28	1	0	0	0	4	158
5:00 PM	2	53	30	5	11	1	0	5	16	0	0	0	0	3	126
6:00 PM	1	44	10	8	6	1	0	2	20	0	0	0	0	4	96
7:00 PM	1	33	18	1	3	0	0	3	10	0	0	0	0	3	72
8:00 PM	0	20	10	5	6	0	0	5	11	0	0	0	0	2	59
9:00 PM	0	13	6	2	4	0	0	2	13	0	0	0	0	1	41
10:00 PM	0	11	10	1	2	0	0	2	6	0	0	0	0	1	33
11:00 PM	0	7	3	0	0	0	0	1	7	0	0	0	0	0	18
Day Total	26	764	426	96	152	25	52	100	412	16	0	0	0	53	2122
Percent	1.2%	36.0%	20.1%	4.5%	7.2%	1.2%	2.5%	4.7%	19.4%	0.8%	0.0%	0.0%	0.0%	2.5%	
ADT 2122															
AM Peak Volume	10:00 AM 6	7:00 AM 53	8:00 AM 44	7:00 AM 11	8:00 AM 13	9:00 AM 4	9:00 AM 9	8:00 AM 8	11:00 AM 37	7:00 AM 3				11:00 AM 6	11:00 AM 152
PM Peak Volume	2:00 PM 5	4:00 PM 60	3:00 PM 32	4:00 PM 12	3:00 PM 12	1:00 PM 3	2:00 PM 8	3:00 PM 12	1:00 PM 37	2:00 PM 3				2:00 PM 9	4:00 PM 158

Comments:

Report generated on 5/1/2012 3:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: SR 70 east of Manatee/Desoto County Line
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Desoto, FL

QC JOB #: 10753701
DIRECTION: WB
DATE: Apr 26 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	6	2	1	1	0	0	1	4	0	0	0	0	1	16
1:00 AM	0	8	0	0	0	0	0	0	1	0	0	0	0	0	9
2:00 AM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2
3:00 AM	0	3	0	0	0	0	0	1	4	0	0	0	0	0	8
4:00 AM	0	7	1	0	0	0	0	1	6	0	0	0	0	0	15
5:00 AM	0	18	16	5	9	0	0	1	7	1	0	0	0	2	59
6:00 AM	1	50	34	10	12	0	2	3	13	0	0	0	0	2	127
7:00 AM	0	55	50	24	24	5	5	5	17	1	0	0	0	2	188
8:00 AM	1	59	40	11	11	4	5	3	14	1	0	0	0	4	153
9:00 AM	2	23	27	2	8	0	5	6	15	1	0	0	0	5	94
10:00 AM	0	42	14	7	7	3	6	3	17	1	0	0	0	0	100
11:00 AM	3	42	23	6	12	1	6	5	39	0	0	0	0	3	140
12:00 PM	1	46	17	4	12	0	2	4	29	2	0	0	0	4	121
1:00 PM	3	37	26	7	9	5	5	4	24	0	0	0	0	4	124
2:00 PM	2	28	31	7	10	1	3	6	29	0	0	0	0	4	121
3:00 PM	2	45	18	7	14	1	2	6	31	1	0	0	0	4	131
4:00 PM	1	61	26	7	12	3	3	8	16	0	0	0	0	5	142
5:00 PM	2	64	26	8	12	3	0	6	15	0	0	0	0	8	144
6:00 PM	1	47	17	1	8	4	0	5	17	0	0	0	0	4	104
7:00 PM	0	26	16	3	5	2	0	0	8	0	0	0	0	0	60
8:00 PM	0	29	18	2	2	1	0	5	10	0	0	0	0	2	69
9:00 PM	0	18	9	3	0	1	0	1	3	0	0	0	0	1	36
10:00 PM	0	12	8	0	5	0	0	1	10	0	0	0	0	0	36
11:00 PM	0	5	1	1	1	0	0	1	6	0	0	0	0	0	15
Day Total	19	731	421	116	174	34	44	76	336	8	0	0	0	55	2014
Percent	0.9%	36.3%	20.9%	5.8%	8.6%	1.7%	2.2%	3.8%	16.7%	0.4%	0.0%	0.0%	0.0%	2.7%	
ADT 2014															
AM Peak Volume	11:00 AM 3	8:00 AM 59	7:00 AM 50	7:00 AM 24	7:00 AM 24	7:00 AM 5	10:00 AM 6	9:00 AM 6	11:00 AM 39	5:00 AM 1				9:00 AM 5	7:00 AM 188
PM Peak Volume	1:00 PM 3	5:00 PM 64	2:00 PM 31	5:00 PM 8	3:00 PM 14	1:00 PM 5	1:00 PM 5	4:00 PM 8	3:00 PM 31	12:00 PM 2				5:00 PM 8	5:00 PM 144

Comments:

Report generated on 5/1/2012 3:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

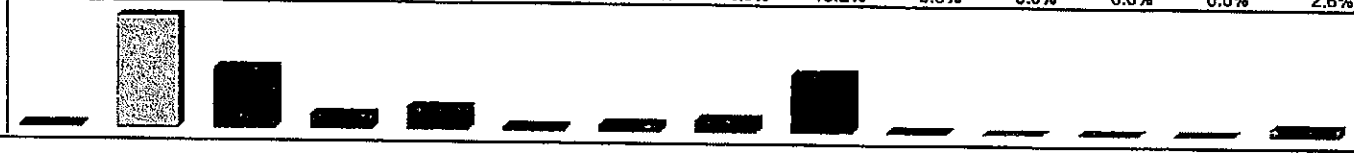
SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: SR 70 east of Manatee/Desoto County Line
SPECIFIC LOCATION: 100 ft from
CITY/STATE: Desoto, FL

QC JOB #: 10753701
DIRECTION: WB
DATE: Apr 24 2012 - Apr 26 2012

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	54	2266	1239	302	456	84	145	249	1182	34	0	0	0	158	6169
Percent	0.9%	36.7%	20.1%	4.9%	7.4%	1.4%	2.4%	4.0%	19.2%	0.6%	0.0%	0.0%	0.0%	2.6%	

ADT
2056



Comments:

Report generated on 5/1/2012 3:21 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

FDOT SEASONAL ADJUSTMENT FACTORS

2011 Peak Season Factor Category Report - Report Type: ALL
Category: 0400 DESOTO COUNTYWIDE

MOCF: 0.88

Week	Dates	SF	PSCF
1	01/01/2011 - 01/01/2011	0.96	1.10
2	01/02/2011 - 01/08/2011	0.96	1.10
3	01/09/2011 - 01/15/2011	0.95	1.09
4	01/16/2011 - 01/22/2011	0.93	1.06
* 5	01/23/2011 - 01/29/2011	0.91	1.04
* 6	01/30/2011 - 02/05/2011	0.89	1.02
* 7	02/06/2011 - 02/12/2011	0.87	0.99
* 8	02/13/2011 - 02/19/2011	0.85	0.97
* 9	02/20/2011 - 02/26/2011	0.85	0.97
*10	02/27/2011 - 03/05/2011	0.85	0.97
*11	03/06/2011 - 03/12/2011	0.85	0.97
*12	03/13/2011 - 03/19/2011	0.85	0.97
*13	03/20/2011 - 03/26/2011	0.86	0.98
*14	03/27/2011 - 04/02/2011	0.88	1.01
*15	04/03/2011 - 04/09/2011	0.89	1.02
*16	04/10/2011 - 04/16/2011	0.91	1.04
*17	04/17/2011 - 04/23/2011	0.92	1.05
18	04/24/2011 - 04/30/2011	0.94	1.07
19	05/01/2011 - 05/07/2011	0.95	1.09
20	05/08/2011 - 05/14/2011	0.97	1.11
21	05/15/2011 - 05/21/2011	0.98	1.12
22	05/22/2011 - 05/28/2011	1.00	1.14
23	05/29/2011 - 06/04/2011	1.03	1.18
24	06/05/2011 - 06/11/2011	1.05	1.20
25	06/12/2011 - 06/18/2011	1.07	1.22
26	06/19/2011 - 06/25/2011	1.09	1.25
27	06/26/2011 - 07/02/2011	1.11	1.27
28	07/03/2011 - 07/09/2011	1.13	1.29
29	07/10/2011 - 07/16/2011	1.15	1.31
30	07/17/2011 - 07/23/2011	1.16	1.33
31	07/24/2011 - 07/30/2011	1.16	1.33
32	07/31/2011 - 08/06/2011	1.17	1.34
33	08/07/2011 - 08/13/2011	1.17	1.34
34	08/14/2011 - 08/20/2011	1.18	1.35
35	08/21/2011 - 08/27/2011	1.17	1.34
36	08/28/2011 - 09/03/2011	1.17	1.34
37	09/04/2011 - 09/10/2011	1.17	1.34
38	09/11/2011 - 09/17/2011	1.17	1.34
39	09/18/2011 - 09/24/2011	1.15	1.31
40	09/25/2011 - 10/01/2011	1.14	1.30
41	10/02/2011 - 10/08/2011	1.12	1.28
42	10/09/2011 - 10/15/2011	1.11	1.27
43	10/16/2011 - 10/22/2011	1.08	1.23
44	10/23/2011 - 10/29/2011	1.06	1.21
45	10/30/2011 - 11/05/2011	1.03	1.18
46	11/06/2011 - 11/12/2011	1.01	1.15
47	11/13/2011 - 11/19/2011	0.99	1.13
48	11/20/2011 - 11/26/2011	0.98	1.12
49	11/27/2011 - 12/03/2011	0.97	1.11
50	12/04/2011 - 12/10/2011	0.97	1.11
51	12/11/2011 - 12/17/2011	0.96	1.10
52	12/18/2011 - 12/24/2011	0.96	1.10
53	12/25/2011 - 12/31/2011	0.95	1.09

* Peak Season

PEAK SEASON TRAFFIC CALCULATION

TABLE A-1

PEAK SEASON TRAFFIC

Direction	Date	6-7 AM	8-9 AM	3-4 PM	4-5 PM
EB	4/24/2013	58	103	158	180
	4/25/2013	62	152	134	148
	4/26/2013	50	114	174	164
	Average	57	123	155	164
	Peak Season	61	132	166	175
WB	4/24/2013	114	167	142	153
	4/25/2013	120	139	150	158
	4/26/2013	127	153	131	142
	Average	120	153	141	151
	Peak Season	128	164	151	162

FDOT HISTORICAL COUNTS

Florida Department of Transportation
Transportation Statistics Office
2011 Historical AADT Report

County: 04 - DESOTO

Site: 0068 - SR-70, 0.24 MILE SE OF NW MIZELL AVE.,DESOTO CO.

Year	AADT	Direction 1		Direction 2		*K Factor	D Factor	T Factor
2011	3311 C	E	1644	W	1667	9.50	55.40	24.00
2010	3297 C	E	1637	W	1660	10.68	54.22	23.20
2009	3397 C	E	1685	W	1712	10.92	57.65	22.90
2008	3505 C	E	1733	W	1772	10.84	57.99	25.70
2007	3793 C	E	1878	W	1915	10.76	52.49	25.90
2006	3824 C	E	1907	W	1917	10.62	54.37	26.00
2005	3885 C	E	1913	W	1972	10.50	52.20	24.50
2004	4009 C	E	1943	W	2066	12.30	61.20	23.90
2003	3900 F	E		W		10.40	55.80	23.20
2002	3737 C	E	1853	W	1884	10.40	55.80	24.20
2001	3553 C	E	1764	W	1789	10.80	56.50	23.80
2000	3524 C	E	1751	W	1773	10.80	54.40	29.10
1999	3543 C	E	1756	W	1787	10.90	63.30	30.50
1998	3260 C	E	1624	W	1636	10.80	54.40	10.70
1997	3085 C	E	1544	W	1541	11.10	57.90	15.50
1996	2972 C	E	1500	W	1472	13.00	58.60	14.40

AADT Flags: C = Computed; E = Manual Estimate; F = First Year Estimate
S = Second Year Estimate; T = Third Year Estimate; X = Unknown
*K Factor: Starting with Year 2011 is StandardK, Prior years are K30 values

ARTPLAN PRINTOUTS

ARTPLAN 2012 Conceptual Planning Analysis

Project Information

Analyst		Arterial Name	SR 70	Study Period	Standard K
Date Prepared	1/10/2013 8:52:58 AM	From	From the west	Modal Analysis	Auto Only
Agency		To	Railroad Crossing	Program	ARTPLAN 2012
Area Type	Rural Developed	Peak Direction	Westbound	Version Date	12/12/2012
Arterial Class	1				
File Name	C:\Users\Michael\Documents\DeSoto\SR 70 Artplan - AM Generator.xap				
User Notes	AM Generator Peak Hour				

Arterial Data

K	0.09	PHF	0.9	Control Type	FullyActuated
D	0.54	% Heavy Vehicles	39	Base Sat. Flow Rate	1950

Automobile Intersection Data

Cross Street	Cycle Length	Thru g/C	Arr. Type	INT # Dir.Lanes	% Left Turns	% Right Turns	Left Turn Lanes	Left Turn Phasing	# Left Turn Lanes	LT Storage Length	Left g/C	Right Turn Lanes
Railroad Crossing	240	0.83	3	1	0	0	No	Protected	N/A	N/A	N/A	No

Automobile Segment Data

Segment #	Length	AADT	Hourly Vol.	SEG # Dir.Lanes	Posted Speed	Free Flow Speed	Median Type	On-Street Parking	Parking Activity
1 (to Railroad Crossing)	10560	4501	219	1	55	60	None	No	N/A

Automobile LOS

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	Queue Ratio	Speed (mph)	Segment LOS
1 (to Railroad Crossing)	243	1098	0.267	4.51	A	0.00	57.15	A

Arterial Length	2.0045	Weighted g/C	##	FFS Delay	6.27	Threshold Delay	0.00	Auto Speed	57.15	Auto LOS	A

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 veh/h/ln.

	A	B	C	D	E
Lanes	Hourly Volume In Peak Direction				
1	900	960	***	***	***
2	1830	1940	***	***	***
3	2770	2920	***	***	***
4	3700	3900	***	***	***
*	900	960	***	***	***
Lanes	Hourly Volume In Both Directions				
2	1670	1770	***	***	***
4	3390	3590	***	***	***
6	5130	5400	***	***	***
8	6860	7220	***	***	***
*	1670	1770	***	***	***
Lanes	Annual Average Daily Traffic				
2	18600	19700	***	***	***
4	37700	39800	***	***	***
6	57000	60000	***	***	***
8	76200	80300	***	***	***
*	18600	19700	***	***	***

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
**** Cannot be achieved based on input data provided.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
 # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2012 Conceptual Planning Analysis

Project Information

Analyst		Arterial Name	SR 70	Study Period	Standard K
Date Prepared	1/10/2013 8:52:58 AM	From	From the west	Modal Analysis	Auto Only
Agency		To	Railroad Crossing	Program	ARTPLAN 2012
Area Type	Rural Developed	Peak Direction	Westbound	Version Date	12/12/2012
Arterial Class	1				
File Name	C:\Users\Michael\Documents\DeSoto\SR 70 Artplan - AM Street.xap				
User Notes	AM Street Peak Hour				

Arterial Data

K	0.09	PHF	0.9	Control Type	FullyActuated
D	0.54	% Heavy Vehicles	39	Base Sat. Flow Rate	1950

Automobile Intersection Data

Cross Street	Cycle Length	Thru g/C	Arr. Type	INT # Dir.Lanes	% Left Turns	% Right Turns	Left Turn Lanes	Left Turn Phasing	# Left Turn Lanes	LT Storage Length	Left g/C	Right Turn Lanes
Railroad Crossing	240	0.83	3	1	0	0	No	Protected	N/A	N/A	N/A	No

Automobile Segment Data

Segment #	Length	AADT	Hourly Vol.	SEG # Dir.Lanes	Posted Speed	Free Flow Speed	Median Type	On-Street Parking	Parking Activity
1 (to Railroad Crossing)	10560	4358	212	1	55	60	None	No	N/A

Automobile LOS

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	Queue Ratio	Speed (mph)	Segment LOS
1 (to Railroad Crossing)	236	1097	0.259	4.47	A	0.00	57.19	A

Arterial Length	2.0045	Weighted g/C	##	FFS Delay	6.19	Threshold Delay	0.00	Auto Speed	57.19	Auto LOS	A

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 veh/h/ln.

	A	B	C	D	E
Lanes	Hourly Volume In Peak Direction				
1	900	960	***	***	***
2	1830	1940	***	***	***
3	2770	2920	***	***	***
4	3700	3900	***	***	***
*	900	960	***	***	***
Lanes	Hourly Volume In Both Directions				
2	1670	1770	***	***	***
4	3390	3590	***	***	***
6	5130	5400	***	***	***
8	6860	7220	***	***	***
*	1670	1770	***	***	***
Lanes	Annual Average Daily Traffic				
2	18600	19700	***	***	***
4	37700	39800	***	***	***
6	57000	60000	***	***	***
8	76200	80300	***	***	***
*	18600	19700	***	***	***

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ARTPLAN 2012 Conceptual Planning Analysis

Project Information

Analyst		Arterial Name	SR 70	Study Period	Standard K
Date Prepared	1/10/2013 8:52:58 AM	From	From the west	Modal Analysis	Auto Only
Agency		To	Railroad Crossing	Program	ARTPLAN 2012
Area Type	Rural Developed	Peak Direction	Eastbound	Version Date	12/12/2012
Arterial Class	1				
File Name	C:\Users\Michael\Documents\DeSoto\SR 70 Artplan - PM Generator.xap				
User Notes	PM Generator Peak Hour				

Arterial Data

K	0.09	PHF	0.9	Control Type	FullyActuated
D	0.54	% Heavy Vehicles	39	Base Sat. Flow Rate	1950

Automobile Intersection Data

Cross Street	Cycle Length	Thru g/C	Arr. Type	INT # Dir.Lanes	% Left Turns	% Right Turns	Left Turn Lanes	Left Turn Phasing	# Left Turn Lanes	LT Storage Length	Left g/C	Right Turn Lanes
Railroad Crossing	240	0.83	3	1	0	0	No	Protected	N/A	N/A	N/A	No

Automobile Segment Data

Segment #	Length	AADT	Hourly Vol.	SEG # Dir.Lanes	Posted Speed	Free Flow Speed	Median Type	On-Street Parking	Parking Activity
1 (to Railroad Crossing)	10560	5262	256	1	55	60	None	No	N/A

Automobile LOS

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	Queue Ratio	Speed (mph)	Segment LOS
1 (to Railroad Crossing)	284	1108	0.309	4.73	A	0.00	56.96	A

Arterial Length	2.0045	Weighted g/C	##	FFS Delay	6.70	Threshold Delay	0.00	Auto Speed	56.96	Auto LOS	A

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 veh/h/ln.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	900	960	***	***	***
2	1830	1940	***	***	***
3	2770	2920	***	***	***
4	3700	3900	***	***	***
*	900	960	***	***	***
Lanes	**Hourly Volume In Both Directions**				
2	1670	1770	***	***	***
4	3390	3590	***	***	***
6	5130	5400	***	***	***
8	6860	7220	***	***	***
*	1670	1770	***	***	***
Lanes	**Annual Average Daily Traffic**				
2	18600	19700	***	***	***
4	37700	39800	***	***	***
6	57000	60000	***	***	***
8	76200	80300	***	***	***
*	18600	19700	***	***	***

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
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ARTPLAN 2012 Conceptual Planning Analysis

Project Information

Analyst		Arterial Name	SR 70	Study Period	Standard K
Date Prepared	1/10/2013 8:52:58 AM	From	From the west	Modal Analysis	Auto Only
Agency		To	Railroad Crossing	Program	ARTPLAN 2012
Area Type	Rural Developed	Peak Direction	Eastbound	Version Date	12/12/2012
Arterial Class	1				
File Name	C:\Users\Michael\Documents\DeSoto\SR 70 Artplan - PM Street.xap				
User Notes	PM Street Peak Hour				

Arterial Data

K	0.09	PHF	0.9	Control Type	FullyActuated
D	0.54	% Heavy Vehicles	39	Base Sat. Flow Rate	1950

Automobile Intersection Data

Cross Street	Cycle Length	Thru g/C	Arr. Type	INT # Dir.Lanes	% Left Turns	% Right Turns	Left Turn Lanes	Left Turn Phasing	# Left Turn Lanes	LT Storage Length	Left g/C	Right Turn Lanes
Railroad Crossing	240	0.83	3	1	0	0	No	Protected	N/A	N/A	N/A	No

Automobile Segment Data

Segment #	Length	AADT	Hourly Vol.	SEG # Dir.Lanes	Posted Speed	Free Flow Speed	Median Type	On-Street Parking	Parking Activity
1 (to Railroad Crossing)	10560	4871	237	1	55	60	None	No	N/A

Automobile LOS

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	Queue Ratio	Speed (mph)	Segment LOS
1 (to Railroad Crossing)	263	1103	0.288	4.62	A	0.00	57.06	A

Arterial Length	2.0045	Weighted g/C	##	FFS Delay	6.48	Threshold Delay	0.00	Auto Speed	57.06	Auto LOS	A

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 veh/h/ln.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	900	960	***	***	***
2	1830	1940	***	***	***
3	2770	2920	***	***	***
4	3700	3900	***	***	***
*	900	960	***	***	***
Lanes	**Hourly Volume In Both Directions**				
2	1670	1770	***	***	***
4	3390	3590	***	***	***
6	5130	5400	***	***	***
8	6860	7220	***	***	***
*	1670	1770	***	***	***
Lanes	**Annual Average Daily Traffic**				
2	18600	19700	***	***	***
4	37700	39800	***	***	***
6	57000	60000	***	***	***
8	76200	80300	***	***	***
*	18600	19700	***	***	***

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Economic Impacts of Development and Operations of the Mosaic Phosphate Mine in Desoto County, Central Florida

Final Project Report to the Mosaic Company

Alan W. Hodges, Ph.D., Extension Scientist, and Christa D. Court, Ph.D., Assistant Scientist
University of Florida, Institute of Food & Agricultural Sciences
Food & Resource Economics Department, Gainesville, FL

September 5, 2018

Dragline mining for phosphate at the Four Corners Lonesome Mine
(Credit Florida Department of Environmental Protection)

Table of Contents

Executive Summary

The Mosaic Company plans to develop a new phosphate mine and beneficiation plant on approximately 18,287 acres of land in northwest Desoto County, Florida. Historically, the land was used for agricultural purposes, primarily cattle grazing, citrus and vegetable crops. Development/construction of the mine will occur over a six year period, then mining operations will commence and reach full production two years later, and continue for 14.5 years. The extracted phosphate ore will be processed into phosphate rock at a new on-site separation/beneficiation plant, then shipped to one of the company's existing three fertilizer manufacturing plants in Polk and Hillsborough Counties.

This report details an analysis that was commissioned by the company to estimate the economic impacts of development and operations of the mine in Desoto County, and a five-county region (Desoto, Sarasota, Hardee, Manatee, and Polk counties), in support of informed public policy for local government permitting decisions.

The analysis was conducted using a project development budget, timeline, operating employment, and phosphate rock production volumes and prices from the company, together with economic models for the county and region created using the *IMPLAN* software and associated datasets (IMPLAN Group LLC) that enable estimation of regional multiplier effects for direct spending or revenues, indirect supply chain activity, and induced household and government spending. Total development costs were provided by the company for processing plant construction, earthmoving/sitework, utilities, mining equipment, water supply pipeline, railroad spur, engineering services, and project management. Construction of a water supply pipeline is proposed to extend 36.2 miles from the company's existing wellfields in southwest Polk County to the new mine, which could limit new groundwater withdrawals in DeSoto County. Approximately 10 percent of the construction contractors and trades employees are expected to be hired from Desoto County, and about 30 percent from the five-county region. At full production in year three of operations, the mine will produce about 6.12 million short tons of phosphate rock annually that will be converted to 3.67 million tons of phosphate fertilizer for sale to domestic and international markets at an estimated price of $36 per ton of phosphate rock. Ongoing phosphate mining operations will employ 200 fulltime workers.

Total economic impacts of the new phosphate mine in Desoto County and the five-county region are summarized in Tables ES1 and ES2, respectively. In the county, impacts of development capital expenditures were estimated at 1,427 job-years, $53.17 million (M) in labor income (employee wages, benefits, proprietor income), $81.18 M in value added contributions to Gross Regional Product, and $163.21 M in industry output or revenues, including direct, indirect, and induced multiplier effects

(Table ES1). The total job-years (one job for one year) would represent an average of 285 jobs over the five year development period. In addition, mine development spending in the county will generate $4.063 M in tax revenues to state and local governments, including sales, property and severance taxes, and $11.47 M in federal government taxes, including payroll and personal income taxes. The total impact of annual mining operations revenues in the county were estimated at 777 jobs, $39.57 M in labor income, $139.15 M in value added, and $275.71 M in output, including direct, indirect and induced multiplier effects. Mining operations will generate annual tax revenues of $19.24 M to state and local governments, including severance taxes on phosphate ore, and $12.31 M to the federal government. The mine will displace an average of 457 acres per year of current agricultural land uses for citrus and beef cattle (pasture) production valued at $0.83 M, which will have an offsetting negative impact of -17 jobs, -$0.77 M in value added, and $27,000 in state-local taxes. The total combined impacts in the county of mine development and operations, net of agricultural production losses, are estimated at 2,187 job-years, $92.17 M in labor income, $219.56 M in value added, and $437.55 M in output. The combined total employment impacts included 1,211 direct job-years, indirect multiplier effects of 273 job-years, and induced effects of 703 job-years. As an annual average, these impacts represent 1,045 jobs, $49.63 M in labor income, $154.61 M in value added, and $306.98 M in industry output (Table ES1). These impacts constitute 8.5 percent total county employment and 21.0 percent of county Gross Regional Product (GRP) in 2016.

In the five-county region total economic impacts of development were estimated at 6,138 job-years or an average of 1,228 jobs, $289.76 M in labor income, $433.32 M in value added, and $779.68 M in industry output (Table ES2). Mine development spending in the region will generate $24.83 M in tax revenues to state and local governments and $68.27 M in federal government taxes. The total impact of annual mining operations revenues in the county were estimated at 1,841 jobs, $91.67 M in labor income, $224.98 M in value added, and $421.61 M in output. Mining operations will generate annual tax revenues of $25.75 M to state and local governments and $26.41 M to the federal government. Agricultural production losses due to land use change will cause a loss of -25 jobs, -$1.12 M in value added, and $55,600 in state-local taxes in the region. The total combined impacts in the region of mine development and operations, net of agricultural production losses, are estimated at 7,954 job-years, $380.64 M in labor income, $657.18 M in value added and $1,199.31 M in industry output. The combined total included employment impacts of 2,873 direct job-years, indirect multiplier effects of 1,083 job-years, and induced effects of 3,998 job-years. As an annual average, these impacts represent 3,043 jobs, $148.84 M in labor income, $310.53 M in value added, and $575.56 M in industry output, that constitute 0.4 percent of total regional employment and GRP, respectively, in 2016 (Table ES2).

Table ES1. Summary of economic impacts of the Mosaic phosphate mine in Desoto County, FL, first nine years

Activity	Impact Type	Employment (Job-Years)	Labor Income (M$)	Value Added-GDP (M$)	Industry Output-Revenues (M$)
Development Spending, years 1-6	Direct Effect	1,021	$37.90	$54.90	$117.85
	Indirect Effect	121	$4.28	$6.71	$13.42
	Induced Effect	285	$10.99	$19.56	$31.95
	Total Effect	1,427	$53.17	$81.18	$163.21
Operations Revenues, years 7-9 (annualized)	Direct Effect	200	$16.70	$100.83	$207.22
	Indirect Effect	155	$6.01	$9.81	$22.37
	Induced Effect	422	$16.86	$28.51	$46.13
	Total Effect	777	$39.57	$139.15	$275.71
Agricultural Production Loss, annual	Direct Effect	-10	-$0.34	-$0.43	-$0.83
	Indirect Effect	-4	-$0.13	-$0.15	-$0.24
	Induced Effect	-3	-$0.10	-$0.19	-$0.31
	Total Effect	-17	-$0.57	-$0.77	-$1.38
Total All Activities Net of Ag Production Loss	Direct Effect	1,211	$54.27	$155.30	$324.24
	Indirect Effect	273	$10.15	$16.37	$35.55
	Induced Effect	703	$27.75	$47.88	$77.76
	Total Effect	2,187	$92.17	$219.56	$437.55
Annual average all activities		1,045	$49.63	$154.61	$306.98
Percent of county in 2016		8.5%	10.1%	21.0%	23.2%
Operations and ag loss as percent of county in 2016		6.2%	7.9%	18.8%	20.7%

Values in 2018 dollars.
Operations revenues reflect incremental annual amounts.
Employment includes fulltime and part-time workers.
Labor income includes employee wages, benefits, and proprietor income.
Source: *IMPLAN* model for Desoto County FL, 2016, modified to add phosphate mining sector.

Table ES2. Summary of economic impacts of the Mosaic phosphate mine in the five-county region in central Florida, first nine years

Project Activity	Impact Type	Employment (Job-Years)	Labor Income (M$)	Value Added-GDP (M$)	Industry Output-Revenues (M$)
Development Spending, years 1-6	Direct Effect	2,687	$141.05	$187.29	$360.80
	Indirect Effect	757	$35.21	$52.19	$92.71
	Induced Effect	2,695	$113.50	$193.83	$326.17
	Total Effect	6,138	$289.76	$433.32	$779.68
Operations Revenues, years 7-9 (annualized)	Direct Effect	200	$16.70	$100.83	$207.22
	Indirect Effect	331	$18.61	$29.60	$55.85
	Induced Effect	1,310	$56.36	$94.54	$158.54
	Total Effect	1,841	$91.67	$224.98	$421.61
Agricultural Production Loss, annual	Direct Effect	-14	-$0.35	-$0.43	-$0.83
	Indirect Effect	-4	-$0.15	-$0.19	-$0.31
	Induced Effect	-7	-$0.29	-$0.50	-$0.85
	Total Effect	-25	-$0.79	-$1.12	-$1.98
Total All Activities Net of Ag Production Loss	Direct Effect	2,873	$157.41	$287.69	$567.19
	Indirect Effect	1,083	$53.67	$81.61	$148.26
	Induced Effect	3,998	$169.56	$287.87	$483.86
	Total Effect	7,954	$380.64	$657.18	$1,199.31
Annual average all activities		3,043	$148.84	$310.53	$575.56
Percent of region in 2016		0.4%	0.5%	0.6%	0.6%
Operations and ag loss as percent of region in 2016		0.3%	0.3%	0.4%	0.4%

Values in 2018 dollars.
Operations revenues reflect incremental annual amounts.
Employment includes fulltime and part-time workers.
Labor income includes employee wages, benefits, and proprietor income.
Source: *IMPLAN* model for Desoto, Hardee, Polk, Manatee and Sarasota Counties, FL, 2016

1. Introduction

The State of Florida is the largest producer of mined phosphate rock in the United States (U.S.), and is a leading producer globally. Refined phosphate rock is used in fertilizers, animal feed supplements, food preservatives, and many other industrial products. Phosphorous derivatives from phosphate rock, such as ammonium phosphate, diammonium phosphate and superphosphate, are essential nutrients used for agricultural crop production, and play a key role in the global food supply.

In the U.S. in 2016, phosphate rock mining employed 1,829 fulltime and part-time workers, with $2.001 billion (B) in industry output (revenues), and $1.031 B in value added or Gross Domestic Product (Table 1.1). Phosphatic fertilizer manufacturing in the U.S. employed 6,423 workers, with output of $13.888 B, exports of $3.045 B, and value added of $3.363 B. Phosphate mining and fertilizer manufacturing are relatively high wage industries, with average labor income per worker of $94,805 and $127,961, respectively. These labor income values for the industry represent wages, salaries, commissions, and benefits such as health and life insurance, retirement and other forms of cash and non-cash equivalents. The broader industry encompassing all nonmetallic mineral mining and chemical fertilizer manufacturing, including nitrogenous fertilizers and fertilizer mixing as well as phosphatic fertilizers, employed 29,662 workers, with $35.454 B in industry output, $3.812 B in exports, and $9.607 B in value added (Table 1.1). According to IbisWorld, phosphate and other mineral mining industry revenues in the U.S. are projected to grow to $10.93 B in 2021, representing a 29.7 percent increase from 2016, while all fertilizer manufacturing revenues are projected to grow to $24.04 B, a 3.6 percent increase.

The State of Florida currently has 27 phosphate mines, of which 6 are currently active, covering more than 430,900 acres, with 3,000 to 6,000 acres mined annually (FDEP). Phosphate mining began in Florida in 1883 in Alachua County. Mining currently occurs in Hillsborough, Manatee, Hardee, and Citrus Counties in central Florida in the “Bone Valley” region, covering approximately 1.3 million acres. Mining also occurs in Hamilton County in north Florida and Martin and Volusia Counties elsewhere in the state. In 2016, the phosphate mining industry in Florida employed 1,146 workers (fulltime and part-time), and produced $1.224 B in output, with $537 million (M) in exports, and $616 M in value added contributions to Gross State Product (Table 1.2). Phosphatic fertilizer manufacturing in Florida employed 2,892 workers, with output of $6.058 B, $5.547 B in exports, and value added of $1.319 B. In 2015, the leading counties for phosphate rock mining in terms of output were Polk ($572 M), Hardee ($58 M), and Hillsborough ($45 M), while the leading counties for phosphatic fertilizer manufacturing were Polk ($2.938 B), Hillsborough ($2.381 B), Hamilton ($1.044 B), and Manatee ($319 M). Note that Hamilton County also has significant mining operations, but the facility there is

classified as a fertilizer manufacturer since it is an integrated mining and processing operation. Phosphate mining and fertilizer manufacturing employment in Florida declined by 19.7 and 24.3 percent, respectively, during 2013-16 (Figure 1.1). Phosphate rock mining output in Florida grew by 44 percent during this same period, or an average annual rate of 14.7 percent, while phosphatic fertilizer manufacturing output declined by 14.0 percent or 4.7 percent annually in inflation-adjusted terms (Figure 1.2).

The broad industry for all nonmetallic mineral mining and fertilizer manufacturing in Florida employed 6,073 workers in 2016, with $8.645 B in output, $6.211 B in exports, and $2.227 B in value added. During the period 2001-16, the broad fertilizer mining-processing industry cluster in Florida grew by an average of 8.8 percent annually in output, 7.3 percent in exports, and 8.0 percent in value added, in inflation-adjusted terms (Figure 1.3), reflecting steadily growing worldwide demand for crop nutrients, however, employment declined by 25.4 percent, or 1.7 percent annually, due to automation and increasing worker productivity (Figure 1.4).

Table 1.1. Profile of phosphate and other mineral mining and fertilizer manufacturing industries in the United States in 2016

Datum	Phosphate rock mining	Other nonmetallic mineral mining	Phosphatic fertilizer manufacturing	Nitrogenous fertilizer manufacturing	Fertilizer mixing	Total all fertilizer ingredient mining and manufacturing
Employment (fulltime, part-time jobs)	1,829	3,223	6,423	8,819	9,370	29,662
Output (M$)	2,001	704	13,888	12,512	6,350	35,454
Employee Compensation (M$)	163	200	769	999	592	2,722
Proprietor Income (M$)	11	34	53	232	391	720
Other Property Type Income (M$)	818	144	2,335	1,732	598	5,627
Tax on Production and Imports (M$)	40	14	206	185	94	538
Labor Income (M$)	173	234	822	1,230	983	3,442
Total Value Added (M$)	1,031	392	3,363	3,147	1,674	9,607
Output Per Worker ($)	1,094,307	218,533	2,162,389	1,418,672	677,684	1,195,264
Labor Income Per Worker ($)	94,805	72,523	127,961	139,499	104,896	116,039
Total Commodity Exports (M$)	2	268	3,045	497	0	3,812
Intermediate Commodity Imports (M$)	57	482	2,001	4,716	0	7,256
Institutional Commodity Imports (M$)	3	28	132	237	0	401
Total Imports (M$)	60	510	2,133	4,953	0	7,656

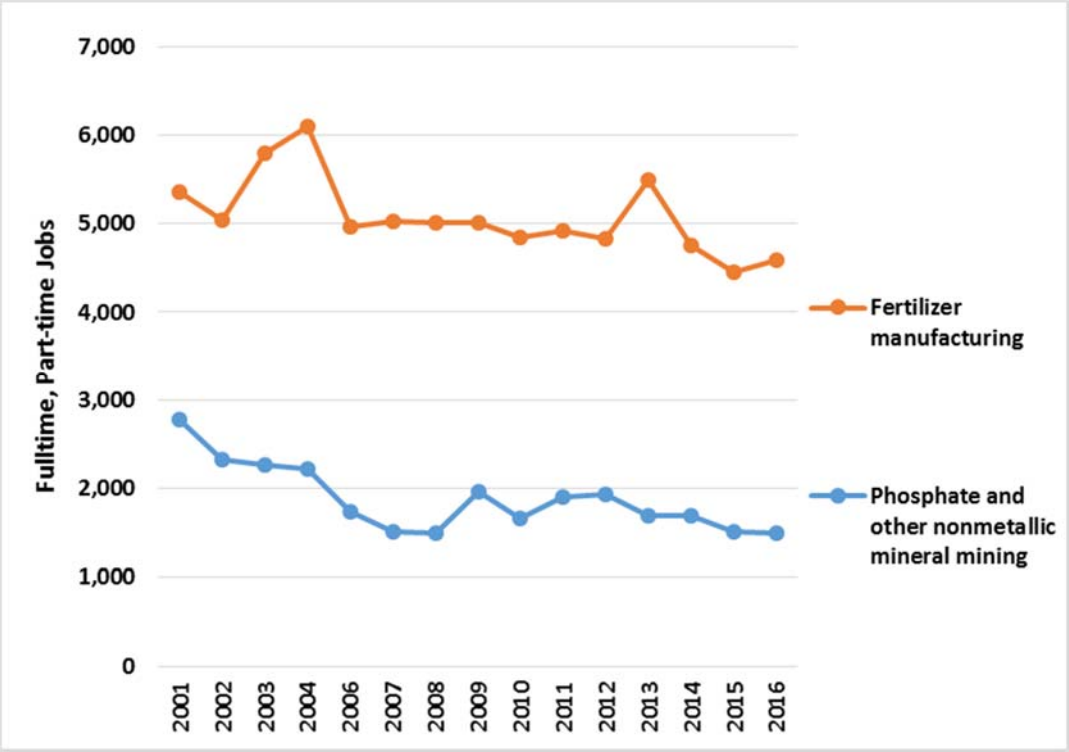
Source: *IMPLAN* Group, LLC

Table 1.2. Profile of phosphate mining and fertilizer manufacturing industries in Florida in 2016

	34-Phosphate rock mining	170-Phosphatic fertilizer manufacturing
Employment (Jobs)	1,146	2,892
Output (M$)	1,224.2	6,057.7
Employee Compensation (M$)	108.8	346.6
Proprietor Income (M$)	-5.3	4.0
Other Property Type Income (M$)	484.8	887.0
Tax on Production and Imports (M$)	27.9	81.0
Total Value Added (M$)	616.1	1,318.6
Commodity Trade		
Foreign Exports (M$)	1.1	1,023.9
Domestic Exports (M$)	535.5	4,523.4
Total Foreign and Domestic Exports (M$)	536.6	5,547.3
Intermediate Imports (M$)	20.5	295.5
Institutional Imports (M$)	0.2	13.7
Total Imports (M$)	20.6	309.2

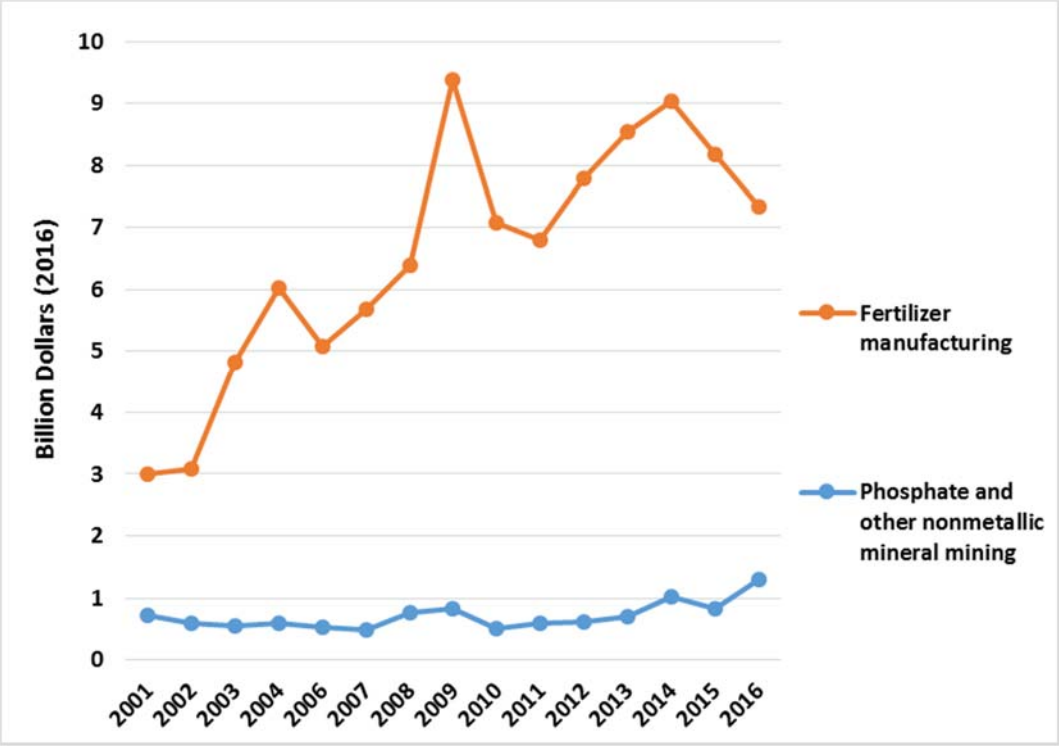
Source: *IMPLAN*

Figure 1.1. Employment trend in phosphate rock mining and phosphatic fertilizer manufacturing industries in Florida, 2013-16



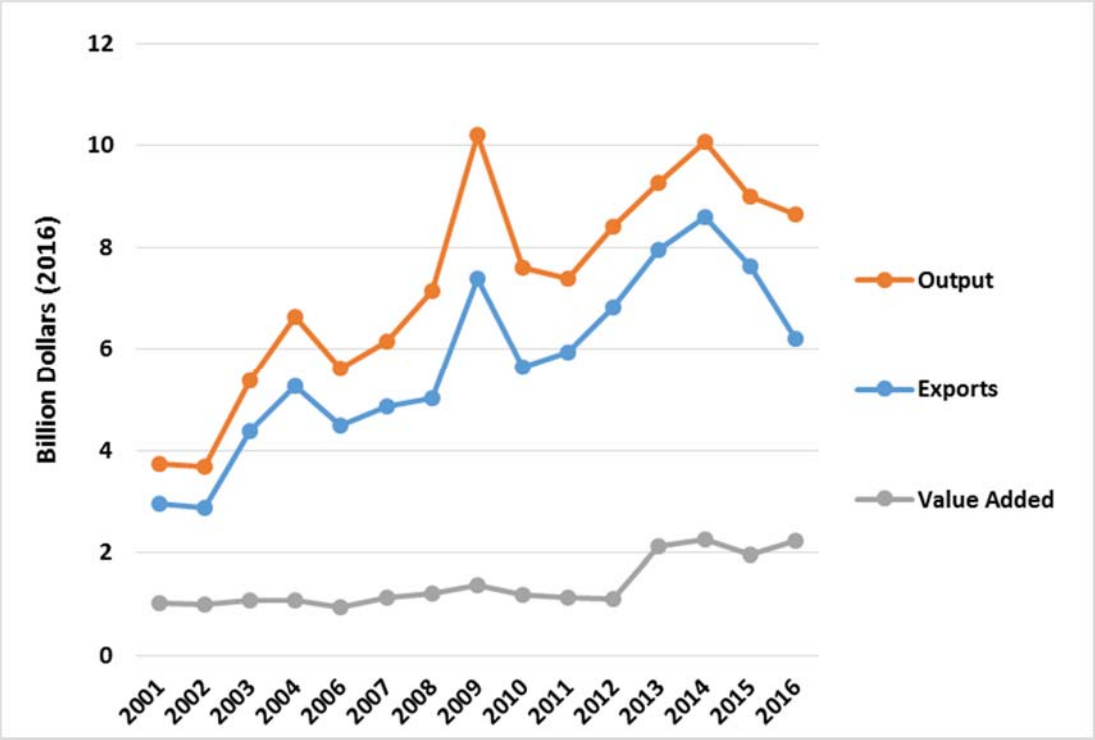
Source: *IMPLAN*

Figure 1.2. Output trend in phosphate rock mining and phosphatic fertilizer manufacturing industries in Florida, 2013-16



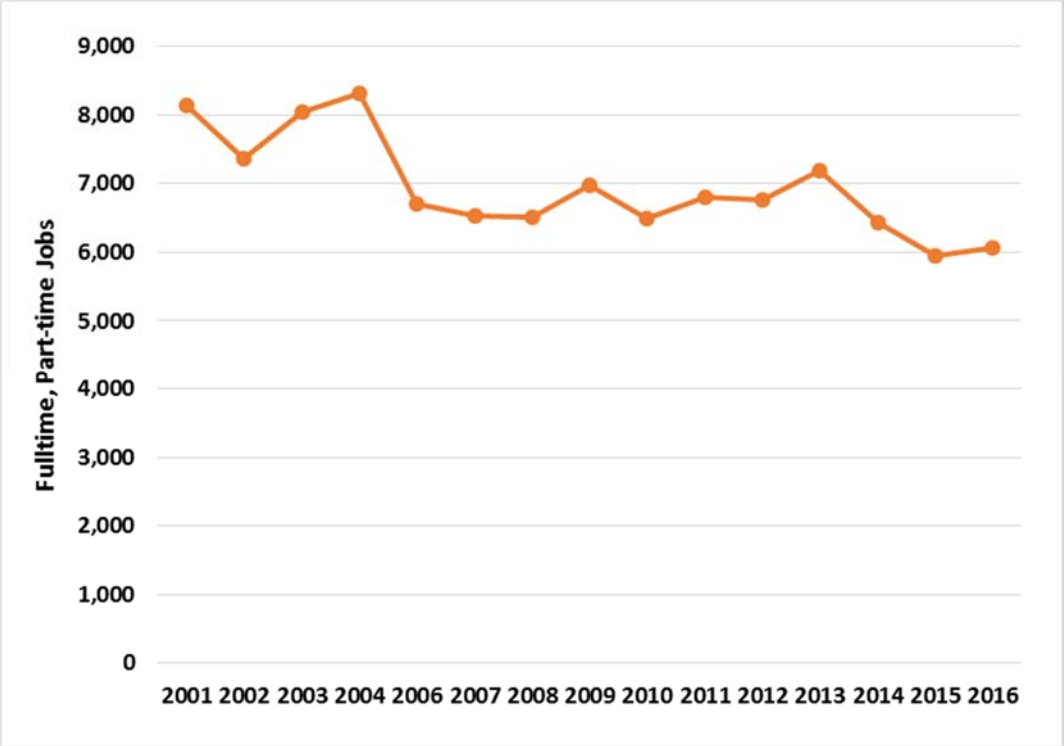
Source: *IMPLAN*

Figure 1.3. Industry output, exports and value added trend in nonmetallic mineral mining and fertilizer manufacturing industries in Florida, 2001-16



Source: *IMPLAN*. Note, data missing for 2005.

Figure 1.4. Employment trend in nonmetallic mineral mining and fertilizer manufacturing industries in Florida, 2001-16



Source: *IMPLAN*

2. Project Data and Methods

A map of Mosaic Company phosphate mine lands and processing facilities in Polk, Hardee, Hillsborough, Manatee, and Desoto counties in central Florida is shown in Figure 2.1. The company currently has four mining beneficiation plants in Polk, Hardee, Hillsborough and Manatee Counties, and four fertilizer processing plants at Bartow and New Wales in Polk County, Plant City (temporarily idled), and Riverview in Hillsborough County. The new phosphate mine will be established in the northwest quadrant of Desoto County, approximately five miles northwest of the city of Arcadia (Figure 2.2). Construction of a water supply pipeline is proposed to extend 36.2 miles from the company's existing wellfields in southwest Polk County to the new mine in Desoto County, which could limit new groundwater withdrawals in DeSoto County (Figure 2.3). A map of the mining plan sequence over a 15 year period is shown in Figure 2.5.

According to the project timeline for development of the phosphate mine and beneficiation plant, planning and engineering will run for a 6 year (72 months) period, including beneficiation plant and railroad spur construction (40 months), mine site development (23 months), and water supply pipeline construction (42 months).

Budgeted capital expenditures for the new phosphate mine in Desoto County include planning/design, utilities, access roads, pumping systems, clay settling and water storage areas, process water recirculation systems, surface water outfalls, clarification ponds, railroad spur, water supply pipeline, mining equipment, and phosphate ore beneficiation plant process equipment for washing, feed preparation, flotation, water systems, and reagents. Total capital development costs are projected by the company at $1,757 million (M), including $403 M for the beneficiation plant construction labor, $605 M for plant equipment, $202 M for sitework, $145 M for water pipeline construction, and $149 M for engineering services, and $116 M for utilities, as well as amounts less than $100 M for mining equipment, railroad spur construction, and salaries for company oversight personnel to manage construction contractors. Costs for the water supply pipeline were allocated to Desoto County based on the share of the overall length of pipeline in the county.

At full production in the third year of operations, the mine will produce about 6.12 million short tons of phosphate rock annually. Based on an expected average price of $36 per ton of phosphate rock in 2025, the mine output is valued at $222.68 M annually. Ongoing phosphate mining operations will employ 200 fulltime workers. All phosphate rock will be shipped by rail to one of the company's existing processing plants in Polk and Hillsborough Counties for conversion into approximately 3.67 million tons annually of phosphate fertilizer that will be exported to domestic and international markets through shipping facilities at the Port of Tampa.

Current land uses for the land to be mined in Desoto County are summarized in Table 2.2. The predominant agricultural uses are for citrus and beef cattle (pasture) production. The phosphate mining operations will displace an average of 457 acres per year of current agricultural land uses, valued at $0.83 M annually, based on average values per acre of citrus in Florida (USDA-NASS) and average annual budgeted returns for beef cow-calf operations (UF-IFAS), as shown in Table 2.3. These values were considered for estimation of offsetting negative economic impacts of the Desoto phosphate mine.

Regional economic impact analysis of the new phosphate mine were evaluated using economic models for Desoto County and the five-county region (Desoto, Sarasota, Hardee, Manatee, and Polk Counties). A map of the regional study areas is shown in Figure 2.5. The models were constructed with the *IMPLAN* economic impact analysis input-output/social accounting system software and 2016 regional data (IMPLAN Group, LLC). Such models enable estimation of direct, indirect, and induced effect economic multipliers for all company activities within the study areas. Direct effects represent the on-site capital spending and operating revenues for ongoing mining operations, while indirect effects represent supply chain activity and induced effects represent employee household and government spending (Miller and Blair, 2007). The county and regional economic models were constructed with the *IMPLAN* commodity tradeflows specification, with all social accounts included internally in the models except business inventories. Relevant to this study, *IMPLAN* features specific industry sectors for phosphate mining, mining support services, and phosphatic fertilizer manufacturing. However, because phosphate mining does not currently exist in Desoto County, it was necessary to add this sector to the model using parameters for output, value added and intermediate commodity purchases per worker from the five-county regional model, as shown in Figure 2.6.

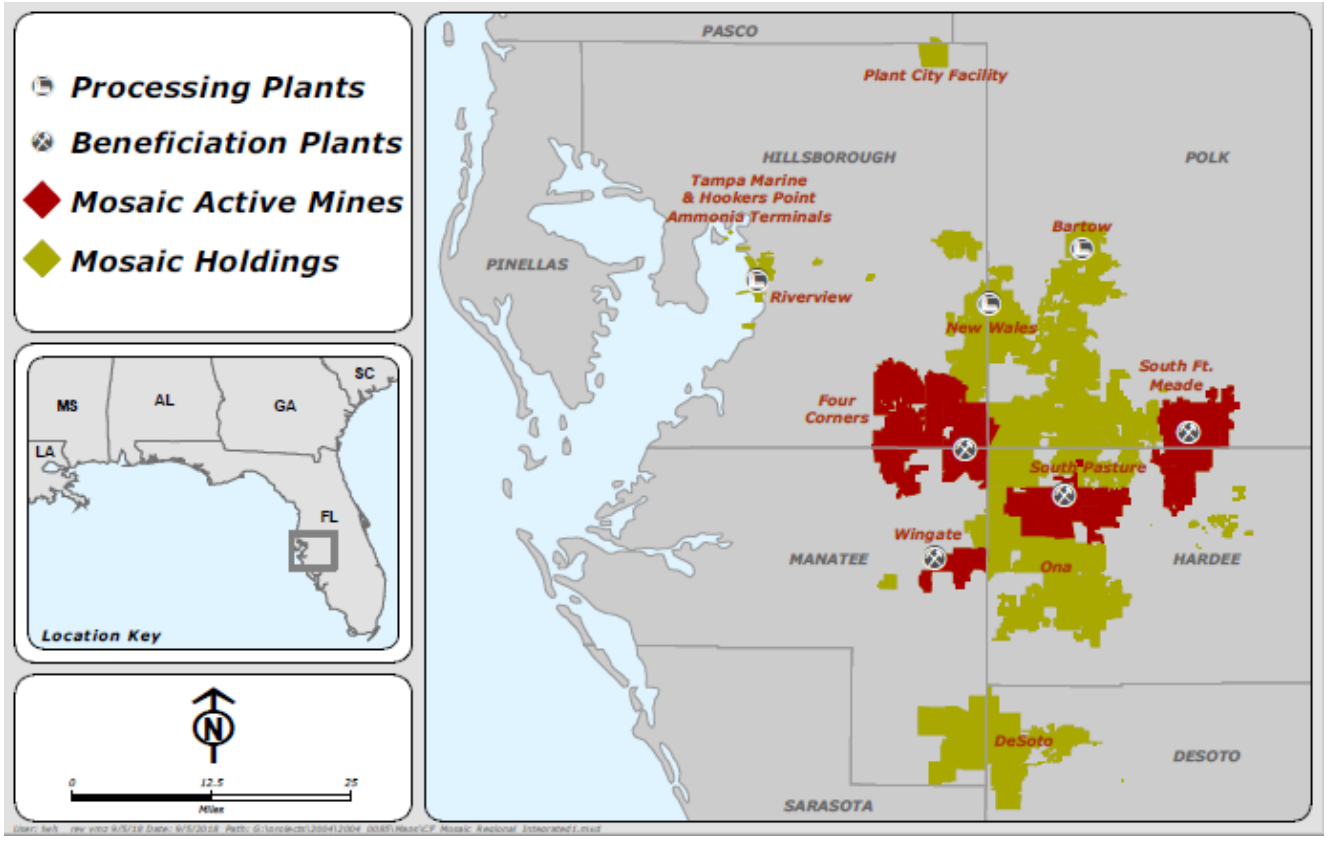
A glossary of economic impact analysis terms is provided in the Appendix. For further details on economic impact analysis methodology, see Hodges et al (2017).

A profile of major industry groups in Desoto County and the five-county study region in 2016 are shown in Tables 2.4 and 2.5, respectively. The economy of Desoto County had a total workforce of 12,340 fulltime and part-time jobs, value added or Gross Regional Product (GRP) of $736 M and total industry output or business revenues of $1,323 M (Table 2.4). The largest industry groups in the county based on employment were agriculture-forestry-fisheries (2,761 jobs), government (1,705 jobs), transportation and warehousing (1,382 jobs) and retail trade (1,060 jobs), while the largest sectors in terms of GRP were agriculture-forestry-fisheries ($123.4 M), government ($119.9 M), real estate/rentals ($83.5 M), and transportation/warehousing ($78.6 M). In the five-county region, the overall economy had a workforce of 723,436 jobs, GRP of $53,299 M and industry output of $100,438 M (Table 2.5). The largest industry groups in the region in terms of employment were health and

social services (83,995 jobs), retail trade (81,501 jobs), and accommodation and food services (60,268 jobs), while the largest industries in terms of GRP were real estate and rentals ($8,244 M), health and social services ($5,465 M), government ($4,568 M) and manufacturing ($4,286 M). The phosphate mining industry in the region had 862 jobs and contributed $447 M to GRP, and phosphatic fertilizer manufacturing had 1,477 jobs and $650 M in GRP. This information was used to assess the relative economic impacts or percentage change in overall activity in the county and region due to the new phosphate mine.

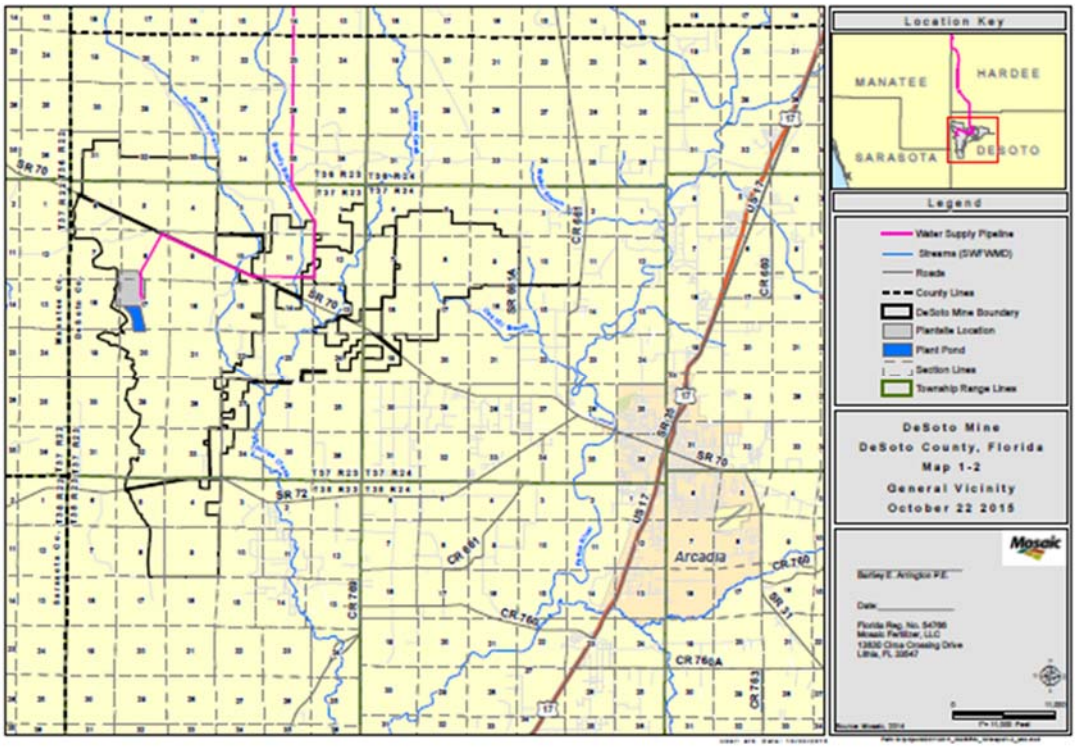
Development cost and operating revenues and employment for the project were entered into the *IMPLAN* models for analysis at the county and region , respectively. Development capital expenditures and incremental annual operating revenues were entered separately for each year of the project, and the software applied industry-specific output deflators to express values in model year (2016) dollars, in order to maintain the correct output to employee ratios for analysis, then applied GDP deflators to express the impact results in current (2018) dollars. Note that incremental year-over-year revenue amounts for the first three years of operations to stabilization were used to avoid double counting of economic impacts. The *IMPLAN* software automatically imputes the employment, employee compensation and property income for a given level of industry sales (capital spending or operating revenues), based on regional industry averages. For operations, the permanent employment of 200 workers was also entered in the model for the first year to override the imputed employment, then zero thereafter to avoid double-counting. Importantly, based on guidance from Mosaic Company project engineers, the analysis assumed that 10 percent of the construction contractors and trades employees for the project would be hired from Desoto County, and 25 percent from the five-county region, as shown under the “local purchase percentage” column in the tables. For engineering services, the average share of services that are sourced from local service providers in each region was used: 17.5 percent in Desoto County, 73.4 percent in the five-county region. Similarly, for mining machinery and equipment purchases, it was zero (meaning industry does not exist) in Desoto County, and 1.83 percent in the five-county region.

Figure 2.1. Map of Mosaic Company lands and processing facilities in central Florida



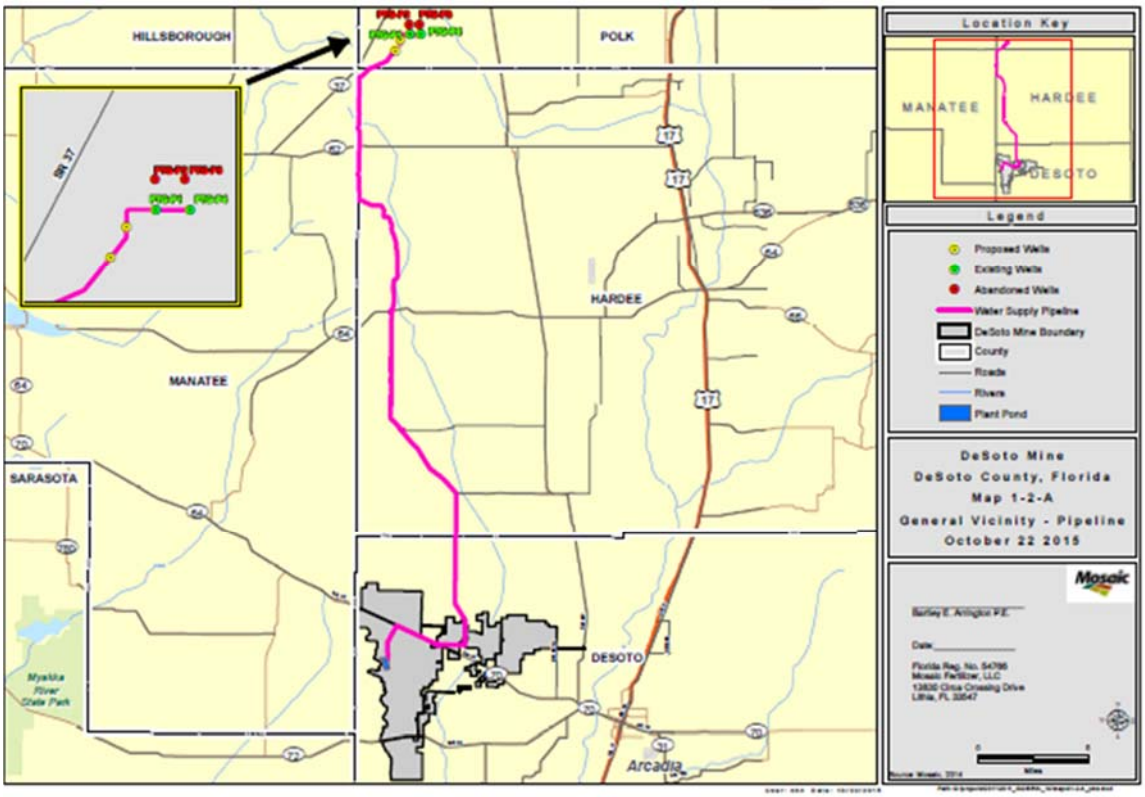
Source: Mosaic Company

Figure 2.2. Boundary map of the Mosaic phosphate mine in Desoto County, Florida



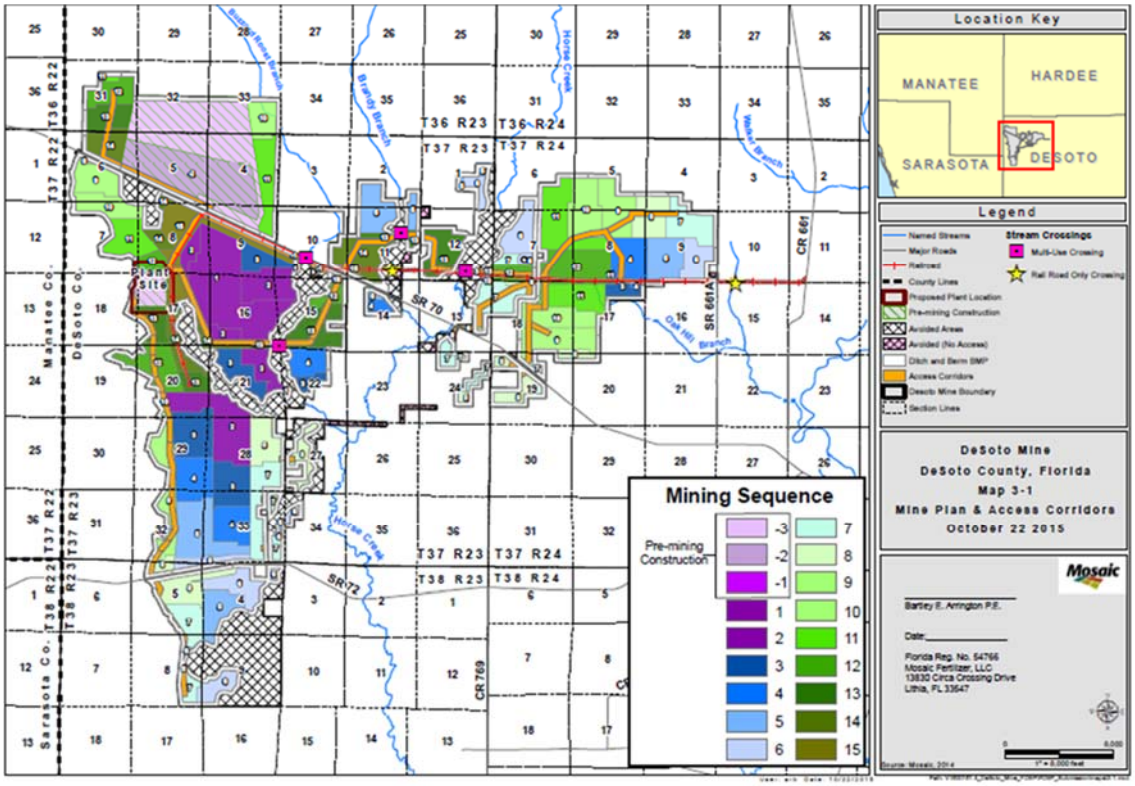
Source: Mosaic Company

Figure 2.3. Route map of the water supply pipeline for the Mosaic phosphate mine in Desoto County, Florida



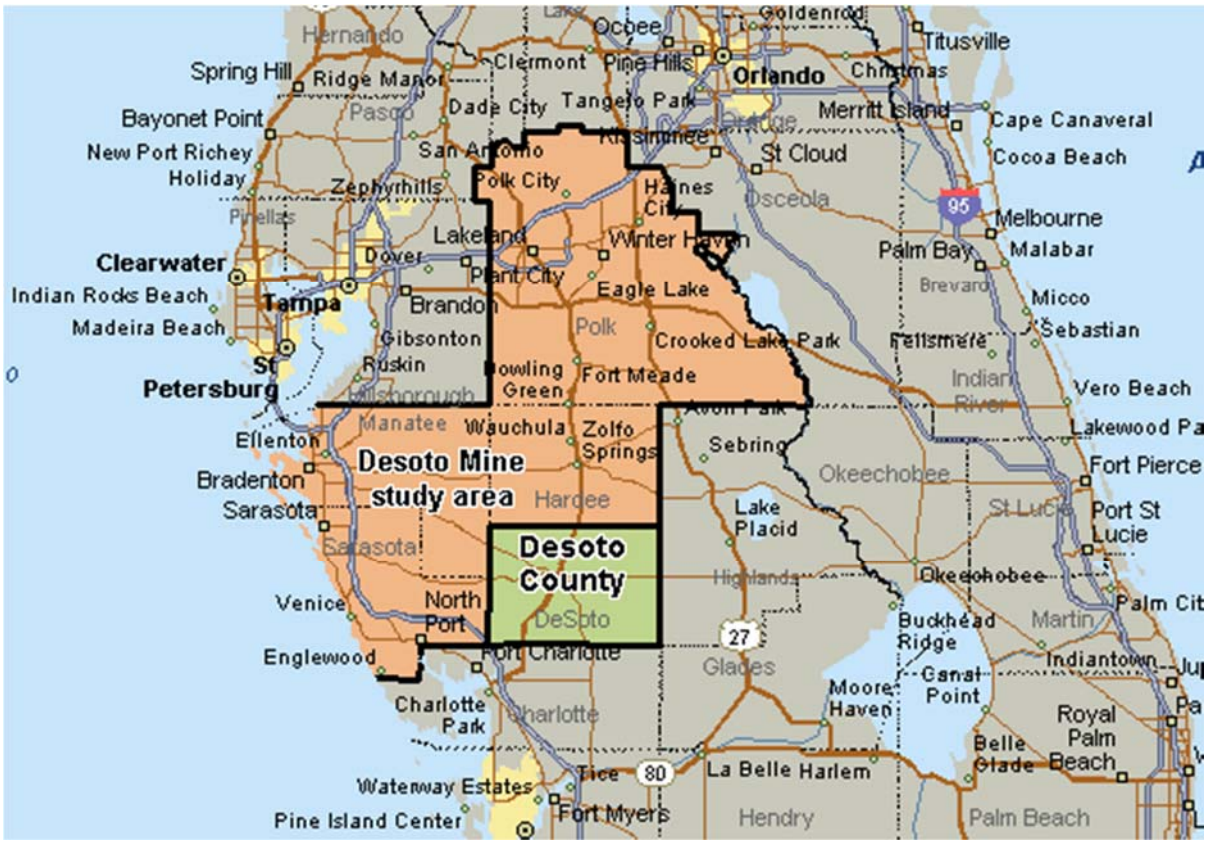
Source: Mosaic Company

Figure 2.4. Map of the mining plan sequence for the Mosaic phosphate mine in Desoto County, Florida



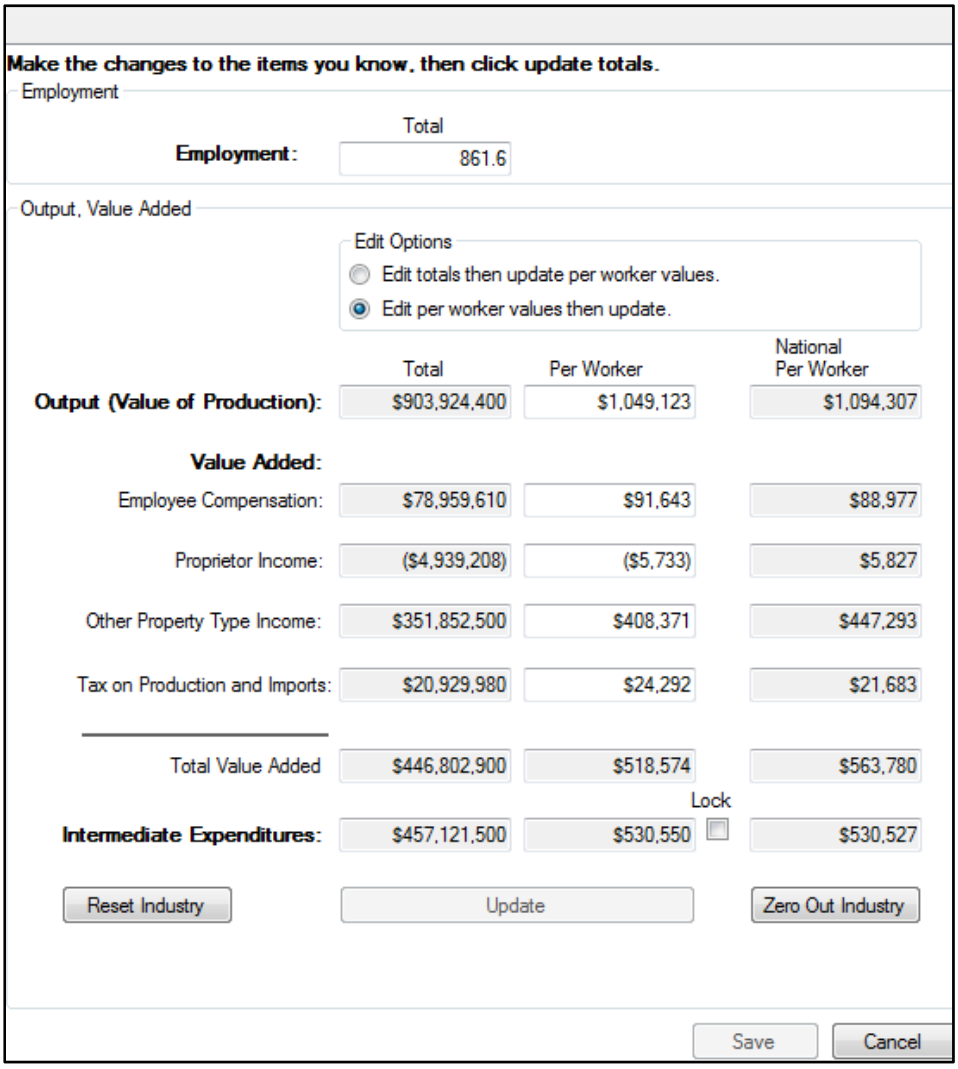
Source: Mosaic Company

Figure 2.5. Map of Desoto County and five-county economic study region in central Florida



Source: Microsoft MapPoint software

Figure 2.6. Output, value added and intermediate commodity expenditures for the phosphate mining industry in central Florida in 2016 used to modify model for Desoto County



Make the changes to the items you know, then click update totals.

Employment

	Total
Employment:	861.6

Output, Value Added

Edit Options
- Edit totals then update per worker values.
- Edit per worker values then update.

	Total	Per Worker	National Per Worker
Output (Value of Production):	$903,924,400	$1,049,123	$1,094,307
Value Added:			
Employee Compensation:	$78,959,610	$91,643	$88,977
Proprietor Income:	($4,939,208)	($5,733)	$5,827
Other Property Type Income:	$351,852,500	$408,371	$447,293
Tax on Production and Imports:	$20,929,980	$24,292	$21,683
Total Value Added	$446,802,900	$518,574	$563,780
Intermediate Expenditures:	$457,121,500	$530,550 (Lock)	$530,527

Reset Industry | Update | Zero Out Industry

Save | Cancel

Source: IMPLAN Group LLC, *IMPLAN* software and regional economic data.

Table 2.1. Budgeted development costs by industry sector and year for the Mosaic phosphate mine in Desoto County, Florida

IMPLAN Industry Sector	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				Million Dollars			
Nonresidential construction (earthmoving, sitework, access roads, pipeline, railroad spur)	$434.3	$0.0	$20.7	$159.8	$172.9	$67.7	$13.1
Subtotal Nonresidential construction in Desoto County (allocated share of pipeline)	$330.3	$0.0	$5.9	$130.1	$143.2	$38.0	$13.1
Utility construction	$116.3	$0.0	$16.6	$33.2	$33.2	$33.2	$0.0
Manufacturing construction (beneficiation plant)	$403.2	$0.0	$0.0	$100.8	$121.0	$121.0	$60.5
Mining equipment manufacturing (mine, beneficiation plant)	$644.2	$0.0	$0.0	$151.2	$181.5	$201.1	$110.4
Architecture & engineering services	$149.0	$24.4	$29.3	$29.3	$29.3	$29.3	$7.3
Phosphate Rock Mining (salaries and benefits for supervisory company employees)	$10.0	$1.6	$2.0	$2.0	$2.0	$2.0	$0.5
Total	$1,757.0	$26.1	$68.6	$476.3	$539.9	$454.3	$191.9

Source: Mosaic Company

Table 2.2. Land use of mined area for the Mosaic phosphate mine in Desoto County, Florida

Land Use Category	Acreage
Other Hay/Non Alfalfa	6
Watermelons	1
Peaches	3
Other Tree Crops	1
Citrus	9
Open Water	6
Developed/Open Space	1,663
Developed/Low Intensity	191
Developed/Medium Intensity	36
Developed/High Intensity	15
Barren	8
Evergreen Forest	1
Shrubland	315
Grass/Pasture	2,753
Woody Wetlands	2,551
Herbaceous Wetlands	222
Oranges	5,076
Total	12,857
Total pasture and oranges	7,829

Source: USDA-NASS, Cropscape online cropland area mapping application.

Table 2.3. Value of agricultural land use displaced by mining for the Mosaic phosphate mine in Desoto County, Florida

Agricultural Land Use	Average mined area per year (acres)	Average annual value ($/acre)	Displaced annual value
Citrus (oranges)	297	$2,586	$766,976
Pasture	161	$377	$60,629
Total	457		$827,605

Sources: average values per acre from citrus price and yields (USDA-NASS, 2016) and cow-calf budget (Prevatt, 2015)

Table 2.4. Industry profile of Desoto County, Florida in 2016

NAICS Industry Group	Employment (Fulltime, Part-time Jobs)	Labor Income (M$)	Value Added-GDP (M$)	Industry Output (M$)
11 Agriculture, Forestry, Fishing & Hunting	2,761	$98.6	$123.4	$215.3
21 Mining	6	$0.2	$0.6	$1.1
22 Utilities	44	$4.4	$24.1	$54.9
23 Construction	765	$27.6	$43.5	$105.6
31-33 Manufacturing	285	$19.1	$27.8	$106.8
42 Wholesale Trade	285	$13.1	$29.8	$52.8
44-45 Retail trade	1,060	$28.8	$46.5	$76.6
48-49 Transportation & Warehousing	1,382	$62.9	$78.6	$149.6
51 Information	15	$0.7	$1.6	$4.4
52 Finance & insurance	249	$9.2	$18.8	$46.7
53 Real estate & rental	296	$4.7	$83.5	$137.2
54 Professional, scientific & tech services	246	$9.5	$12.7	$27.8
55 Management of companies	53	$2.0	$2.6	$7.5
56 Administrative & waste services	745	$18.0	$21.5	$39.8
61 Educational services	20	$0.3	$0.3	$0.8
62 Health & social services	787	$37.3	$43.1	$75.7
71 Arts, entertainment & recreation	131	$1.7	$2.9	$6.7
72 Accommodation & food services	699	$15.5	$28.3	$49.2
81 Other services	809	$39.9	$26.6	$42.4
92 Government & non NAICs	1,705	$97.8	$119.9	$122.6
Total	12,340	$491.1	$736.0	$1,323.4

Note: values are before model modification.
Source: IMPLAN Group LLC, *IMPLAN* software and county economic data.

Table 2.5. Industry profile of the five-county region in central Florida in 2016

NAICS Industry Group	Employment (Fulltime, Part-time Jobs)	Labor Income (M$)	Value Added-GDP (M$)	Industry Output (M$)
11 Agriculture, Forestry, Fishing & Hunting	21,209	$715.8	$826.2	$1,417.1
21 Mining	2,480	$90.9	$508.7	$1,160.2
Phosphate rock mining	862	$74.0	$446.8	$903.9
22 Utilities	1,695	$228.5	$1,105.9	$2,266.3
23 Construction	47,319	$2,087.6	$3,376.5	$7,145.0
31-33 Manufacturing	38,329	$2,384.5	$4,286.3	$16,372.3
Phosphatic fertilizer manufacturing	1,477	$173.1	$649.9	$3,070.8
42 Wholesale Trade	22,715	$1,514.9	$3,132.4	$4,964.2
44-45 Retail trade	81,501	$2,483.3	$3,971.0	$6,379.2
48-49 Transportation & Warehousing	25,395	$1,214.7	$1,573.9	$3,268.1
51 Information	7,610	$515.5	$1,195.5	$3,146.5
52 Finance & insurance	37,400	$1,708.8	$2,851.2	$7,379.1
53 Real estate & rental	42,229	$772.7	$8,244.4	$13,181.0
54 Professional, scientific & tech services	43,661	$2,649.5	$3,216.3	$5,463.8
55 Management of companies	9,158	$913.1	$1,151.0	$2,014.9
56 Administrative & waste services	57,332	$1,751.5	$2,248.8	$3,561.2
61 Educational services	12,707	$432.8	$459.1	$692.1
62 Health & social services	83,995	$4,746.5	$5,464.6	$8,842.2
71 Arts, entertainment & recreation	20,340	$515.0	$996.1	$1,674.7
72 Accommodation & food services	60,268	$1,385.4	$2,158.2	$3,843.1
81 Other services	49,590	$1,815.6	$1,966.0	$2,943.3
92 Government & non NAICs	58,504	$3,730.7	$4,567.5	$4,724.0
Total	723,436	$31,657.3	$53,299.4	$100,438.1

Source: IMPLAN Group LLC, *IMPLAN* software and regional economic data for Polk, Hardee, Desoto, Manatee and Sarasota Counties.

3. Economic Impact Results

Total economic impacts of the new phosphate mine in Desoto County and the five-county region are summarized in Tables 3.1 through 3.8.

Economic Impacts in Desoto County

In Desoto county, impacts of development capital expenditures of the Mosaic phosphate mine were estimated at 1,427 job-years, $53.17 million (M) in labor income (employee wages, benefits, proprietor income), $81.18 M in value added contribution to Gross Regional Product (GRP), and $163.21 M in industry output or revenues, including direct, indirect, and induced multiplier effects (Table 3.1). The total job-years (one job for one year) would represent an average of 285 jobs over the five year development period. In addition, mine development spending in the county will generate $4.06 M in tax revenues to state and local governments and $11.47 M in federal government taxes. The total impact of annual mining operations revenues in the county were estimated at 777 jobs, $39.57 M in labor income, $139.15 M in value added, and $275.71 M in output. The displaced agricultural land uses for citrus and beef cattle (pasture) production valued at $0.83 M will have an offsetting negative impact of -17 jobs, -$0.77 M in value added, and $27,000 in state-local taxes. The total combined impacts in the county of mine development and operations, net of agricultural production losses, are estimated at 2,187 job-years, $92.17 M in labor income, $219.56 M in value added, and $437.55 M in output. The combined total included employment impacts of 1,211 direct job-years, indirect multiplier effects of 273 job-years, and induced effects of 703 job-years (Table 3.1)

As an annual average, these impacts represent 1,045 jobs, $49.63 M in labor income, $154.61 M in value added, and $306.98 M in industry output, that constitute 8.5 percent and 21.0 percent of total county employment and GRP, respectively, in 2016.

Economic impacts by major industry group in Desoto County from phosphate mine development and ongoing operations are summarized in Tables 3.2 and 3.3, respectively. The largest impacts for mine development will be in the construction sector with 805 job-years and $42.50 M in value added, followed by professional-scientific-technical services (247 job-years, $9.59 M), retail trade (62 job-years, $2.71 M) and government (54 job-years, $3.89 M), as well as several other major sectors with employment impacts of at least 20 job-years (Table 3.2). For ongoing mining operations, the largest impacts in the county will be in the mining sector with 200 jobs and $100.84 M in value added, followed by government (102 jobs, $7.29 M), retail trade (70 jobs, $3.13 M) and construction (69 jobs, $3.93 M) (Table 3.3).

Mining operations will generate annual tax revenues in Desoto County of $19.24 M to state and local governments, and $12.31 M to the federal government, as shown in Table 3.4. The largest state-local operating impacts will be severance taxes for phosphate ($10.80 M, calculated at $1.80 per ton of ore), sales tax ($3.60 M) and property tax (personal and other, $2.81 M). The largest federal tax impacts are to payroll taxes for social insurance (Social Security), both employer and employee portions ($5.17 M), and personal income tax ($2.74 M). Mine development in the county over the five year period will generate state and local government tax revenues of $4.06 M, including $1.68 M in sales tax and $1.31 M in property tax, plus $11.47 M in federal tax revenues, including payroll taxes ($6.40 M) and personal income tax ($3.75 M).

Table 3.1. Summary of economic impacts of the Mosaic phosphate mine development and annual operating revenues in Desoto County, FL

Activity	Impact Type	Employment (Job-Years)	Labor Income (M$)	Value Added-GDP (M$)	Industry Output-Revenues (M$)
Development Spending	Direct Effect	1,021	$37.90	$54.90	$117.85
	Indirect Effect	121	$4.28	$6.71	$13.42
	Induced Effect	285	$10.99	$19.56	$31.95
	Total Effect	1,427	$53.17	$81.18	$163.21
Annual Operations Revenues	Direct Effect	200	$16.70	$100.83	$207.22
	Indirect Effect	155	$6.01	$9.81	$22.37
	Induced Effect	422	$16.86	$28.51	$46.13
	Total Effect	777	$39.57	$139.15	$275.71
Agricultural Production Loss, annual	Direct Effect	-10	-$0.34	-$0.43	-$0.83
	Indirect Effect	-4	-$0.13	-$0.15	-$0.24
	Induced Effect	-3	-$0.10	-$0.19	-$0.31
	Total Effect	-17	-$0.57	-$0.77	-$1.38
Total All Activities Net of Ag Production Loss	Direct Effect	1,211	$54.27	$155.30	$324.24
	Indirect Effect	273	$10.15	$16.37	$35.55
	Induced Effect	703	$27.75	$47.88	$77.76
	Total Effect	2,187	$92.17	$219.56	$437.55
Annual average all activities		1,045	$49.63	$154.61	$306.98
Percent of county in 2016		8.5%	10.1%	21.0%	23.2%
Operations and ag loss as percent of county in 2016		6.2%	7.9%	18.8%	20.7%

Values in 2018 dollars.
Operations revenues reflect incremental annual amounts.
Employment includes fulltime and part-time workers.
Labor income includes employee wages, benefits, and proprietor income.
Source: *IMPLAN* model for Desoto County FL, 2016, modified to add phosphate mining sector.

Table 3.2. Economic impacts by major industry group for development of the Mosaic phosphate mine in Desoto County, Florida

NAICS Industry Group	Employment (Job-Years)	Labor Income ($1000)	Value Added ($1000)	Industry Output ($1000)
11 Agriculture, Forestry, Fishing & Hunting	2	$84	$99	$172
21 Mining	9	$783	$4,721	$9,701
22 Utilities	1	$64	$306	$652
23 Construction	805	$29,286	$42,501	$84,819
31-33 Manufacturing	5	$313	$467	$1,178
42 Wholesale Trade	23	$1,048	$2,387	$4,211
44-45 Retail trade	62	$1,685	$2,705	$4,458
48-49 Transportation & Warehousing	25	$1,148	$1,493	$3,200
51 Information	1	$54	$111	$308
52 Finance & insurance	14	$548	$1,112	$2,707
53 Real estate & rental	17	$276	$4,976	$8,188
54 Professional- scientific & tech services	247	$9,218	$9,585	$27,804
55 Management of companies	3	$110	$143	$422
56 Administrative & waste services	42	$1,078	$1,308	$2,325
61 Educational services	1	$14	$17	$44
62 Health & social services	39	$1,897	$2,182	$3,755
71 Arts- entertainment & recreation	8	$75	$131	$330
72 Accommodation & food services	41	$930	$1,652	$2,891
81 Other services	29	$1,417	$1,394	$2,017
92 Government & non NAICS	54	$3,145	$3,887	$4,031
Total	1,427	$53,175	$81,178	$163,215

Estimates include direct, indirect, and induced multiplier effects.
Source: *IMPLAN* model for Desoto County FL, 2016, modified to add phosphate mining sector.

Table 3.3. Economic impacts by major industry group for annual operations revenues to the Mosaic phosphate mine in Desoto County, Florida

NAICS Industry Group	Employment (Jobs)	Labor Income ($1000)	Value Added ($1000)	Industry Output ($1000)
11 Agriculture, Forestry, Fishing & Hunting	4	$130	$154	$276
21 Mining	200	$16,707	$100,839	$207,243
22 Utilities	3	$245	$1,336	$3,028
23 Construction	69	$2,542	$3,929	$9,502
31-33 Manufacturing	1	$42	$60	$176
42 Wholesale Trade	24	$1,110	$2,527	$4,459
44-45 Retail trade	70	$1,934	$3,133	$5,119
48-49 Transportation & Warehousing	28	$1,397	$1,808	$3,864
51 Information	1	$65	$137	$375
52 Finance & insurance	31	$1,232	$2,132	$5,377
53 Real estate & rental	19	$349	$5,991	$10,159
54 Professional- scientific & tech services	30	$1,064	$1,405	$2,924
55 Management of companies	19	$731	$951	$2,803
56 Administrative & waste services	40	$999	$1,225	$2,403
61 Educational services	1	$18	$22	$55
62 Health & social services	50	$2,419	$2,783	$4,794
71 Arts- entertainment & recreation	7	$85	$151	$364
72 Accommodation & food services	43	$979	$1,782	$3,107
81 Other services	34	$1,608	$1,493	$2,166
92 Government & non NAICS	102	$5,913	$7,292	$7,519
Total	777	$39,569	$139,150	$275,714

Estimates include direct, indirect, and induced multiplier effects.
Source: *IMPLAN* model for Desoto County FL, 2016, modified to add phosphate mining sector.

Table 3.4. State-local and federal government tax impacts of the Mosaic phosphate mine in Desoto County, Florida

Tax Item	Development Spending ($1000)	Annual Operations Revenues ($1000)	Annual Agriculture Production Loss ($1000)
Dividends	$13	$48	-0.1
Social Ins Tax- Employee Contribution	$0	$0	0.0
Social Ins Tax- Employer Contribution	$0	$0	0.0
TOPI: Sales Tax	$1,682	$3,599	-10.5
TOPI: Property Tax	$1,313	$2,810	-8.2
TOPI: Motor Vehicle License	$33	$71	-0.2
TOPI: Severance Tax (phosphate)	$2	$10,800	0.0
TOPI: Other Taxes	$326	$697	-2.0
TOPI: S/L Non-Taxes	$254	$544	-1.6
Corporate Profits Tax	$115	$435	-0.8
Personal Tax: Income Tax	$0	$0	0.0
Personal Tax: Non-Taxes (Fines- Fees)	$267	$195	-3.0
Personal Tax: Motor Vehicle License	$40	$29	-0.4
Personal Tax: Property Taxes	$16	$11	-0.2
Personal Tax: Other Tax (Fish/Hunt)	$3	$2	0.0
Total State and Local Tax	$4,063	$19,243	-27.1
Social Ins Tax- Employee Contribution	$3,438	$2,666	-33.4
Social Ins Tax- Employer Contribution	$2,960	$2,499	-21.7
TOPI: Excise Taxes	$256	$547	-1.6
TOPI: Custom Duty	$96	$206	-0.6
TOPI: Fed Non-Taxes	$12	$26	-0.1
Corporate Profits Tax	$957	$3,626	-6.9
Personal Tax: Income Tax	$3,751	$2,740	-42.2
Total Federal Tax	$11,470	$12,311	-106.4

Estimates include direct, indirect and induced multiplier effects.
Source: *IMPLAN* model for Desoto County FL, 2016, modified to add phosphate mining sector, and information on phosphate severance tax rates.

Economic Impacts in the Five-county Region of Central Florida

In the five-county region comprised of Desoto, Hardee, Polk, Manatee, and Sarasota Counties, total economic impacts of development were estimated at 6,138 job-years or an average of 1,228 jobs, $289.76 M in labor income, $433.32 M in value added, and $779.68 M in industry output (Table 3.5). The total impact of annual mining operations revenues in the five-county region were estimated at 1,841 jobs, $91.67 M in labor income, $224.98 M in value added, and $421.61 M in output. Mining operations will generate annual tax revenues of $14.95 M to state and local governments and $26.41 M to the federal government. Agricultural production losses due to land use change will cause a loss of -25 jobs, -$1.12 M in value added, and $55,600 in state-local taxes in the region. The total combined impacts in the region of mine development and operations, net of agricultural production losses, are estimated at 7,954 job-years or an average of 3,043 ongoing jobs, $380.64 M in labor income, $657.18 M in value added, and $1,199.31 M in industry output. The combined total included employment impacts of 2,873 direct job-years, indirect multiplier effects of 1,083 job-years, and induced effects of 3,998 job-years.

As an annual average, these impacts represent 3,043 jobs, $148.84 M in labor income, $310.53 M in value added, and $575.56 M in industry output, that constitute 0.4 percent of total regional employment and GRP, respectively, in 2016.

Economic impacts by major industry group in the region from phosphate mine development and ongoing operations are summarized in Tables 3.6 and 3.7, respectively. The largest impacts for mine development will be in the construction sector with 2,053 job-years and $140.02 M in value added, followed by professional-scientific-technical services (1,105 job-years, $73.88 M), retail trade (452 job-years, $21.80 M), and health and social services (432 job-years, $28.95 M), as well as several other major sectors with employment impacts of over 100 job-years (Table 3.6). For ongoing mining operations, the largest impacts in the region will be in the mining sector with 218 jobs and $102.23 M in value added, followed by retail trade (194 jobs, $9.39 M), health and social services (193 jobs, $12.84 M), and construction (162 jobs, $11.61 M) (Table 3.7).

Mining operations will generate annual state and local government tax revenues in the region of $25.75 M and federal government taxes of $26.41 M (Table 3.8). The largest state-local operating impacts will be to severance taxes ($10.80 M), sales tax ($6.96 M) and personal and other property tax ($4.58 M), while the largest federal tax impacts are to payroll taxes (social insurance taxes or Social Security) for both employer and employee portions ($11.45 M), and personal income tax ($8.00 M). Mine development over the six year development period will generate state and local government tax

revenues in the region of $24.83 M, including $11.22 M in sales tax and $7.39 M in property tax, plus $68.27 M in federal tax revenues, including payroll taxes ($34.91 M) and personal income tax ($25.40 M).

Table 3.5. Summary of economic impacts of the Mosaic phosphate mine in the five-county region in central Florida

Project Activity	Impact Type	Employment (Job-Years)	Labor Income (M$)	Value Added-GDP (M$)	Industry Output-Revenues (M$)
Development Spending	Direct Effect	2,687	$141.05	$187.29	$360.80
	Indirect Effect	757	$35.21	$52.19	$92.71
	Induced Effect	2,695	$113.50	$193.83	$326.17
	Total Effect	6,138	$289.76	$433.32	$779.68
Annual Operations Revenues	Direct Effect	200	$16.70	$100.83	$207.22
	Indirect Effect	331	$18.61	$29.60	$55.85
	Induced Effect	1,310	$56.36	$94.54	$158.54
	Total Effect	1,841	$91.67	$224.98	$421.61
Agricultural Production Loss, annual	Direct Effect	-14	-$0.35	-$0.43	-$0.83
	Indirect Effect	-4	-$0.15	-$0.19	-$0.31
	Induced Effect	-7	-$0.29	-$0.50	-$0.85
	Total Effect	-25	-$0.79	-$1.12	-$1.98
Total All Activities Net of Ag Production Loss	Direct Effect	2,873	$157.41	$287.69	$567.19
	Indirect Effect	1,083	$53.67	$81.61	$148.26
	Induced Effect	3,998	$169.56	$287.87	$483.86
	Total Effect	7,954	$380.64	$657.18	$1,199.31
Annual average all activities		3,043	$148.84	$310.53	$575.56
Percent of region in 2016		0.4%	0.5%	0.6%	0.6%
Operations and ag loss as percent of region in 2016		0.3%	0.3%	0.4%	0.4%

Values in 2018 dollars.
Operations revenues reflect incremental annual amounts.
Employment includes fulltime and part-time workers.
Labor income includes employee wages, benefits, and proprietor income.
Source: *IMPLAN* model for Desoto, Hardee, Polk, Manatee and Sarasota Counties, FL, 2016

Table 3.6. Economic impacts by major industry group for development spending on the Mosaic phosphate mine in the five-county region in central Florida

NAICS Industry Group	Employment (Job-Years)	Labor Income ($1000)	Value Added ($1000)	Industry Output ($1000)
11 Agriculture, Forestry, Fishing & Hunting	5	$189	$239	$404
21 Mining	12	$840	$4,897	$10,240
22 Utilities	5	$544	$2,457	$4,940
23 Construction	2,053	$94,573	$140,021	$255,433
31-33 Manufacturing	58	$5,297	$7,247	$20,539
42 Wholesale Trade	119	$8,033	$16,610	$26,209
44-45 Retail trade	452	$13,764	$21,802	$34,958
48-49 Transportation & Warehousing	96	$4,971	$6,146	$12,452
51 Information	39	$2,708	$6,090	$15,992
52 Finance & insurance	161	$7,114	$11,594	$30,833
53 Real estate & rental	238	$4,486	$46,542	$74,221
54 Professional- scientific & tech services	1,105	$70,352	$73,882	$150,359
55 Management of companies	30	$2,988	$3,766	$6,602
56 Administrative & waste services	352	$11,460	$15,128	$23,201
61 Educational services	67	$2,292	$2,430	$3,691
62 Health & social services	432	$24,995	$28,954	$46,750
71 Arts- entertainment & recreation	75	$1,683	$2,997	$5,385
72 Accommodation & food services	320	$7,302	$11,310	$20,255
81 Other services	262	$9,842	$10,825	$16,261
92 Government & non NAICs	257	$16,324	$20,379	$20,958
Total	6,138	$289,760	$433,317	$779,684

Estimates include direct, indirect, and induced multiplier effects.
Source: *IMPLAN* model for Desoto, Hardee, Polk, Manatee, and Sarasota Counties, FL, 2016

Table 3.7. Economic impacts by major industry group for annual operations revenues for the Mosaic phosphate mine in the five-county region in central Florida

NAICS Industry Group	Employment (Jobs)	Labor Income ($1000)	Value Added ($1000)	Industry Output ($1000)
11 Agriculture, Forestry, Fishing & Hunting	3	$91	$113	$195
21 Mining	218	$17,310	$102,231	$210,222
22 Utilities	6	$696	$3,075	$6,484
23 Construction	162	$7,284	$11,610	$24,622
31-33 Manufacturing	7	$414	$842	$2,693
42 Wholesale Trade	52	$3,497	$7,231	$11,410
44-45 Retail trade	194	$5,913	$9,391	$15,016
48-49 Transportation & Warehousing	43	$2,276	$2,831	$5,807
51 Information	18	$1,259	$2,804	$7,237
52 Finance & insurance	89	$4,141	$6,545	$16,876
53 Real estate & rental	103	$2,098	$20,640	$32,937
54 Professional- scientific & tech services	136	$8,495	$10,374	$17,602
55 Management of companies	47	$4,784	$6,030	$10,571
56 Administrative & waste services	121	$3,817	$4,916	$7,996
61 Educational services	30	$1,008	$1,068	$1,624
62 Health & social services	193	$11,083	$12,838	$20,739
71 Arts- entertainment & recreation	31	$715	$1,288	$2,306
72 Accommodation & food services	125	$2,839	$4,467	$7,986
81 Other services	112	$4,168	$4,532	$6,811
92 Government & non NAICs	154	$9,787	$12,152	$12,473
Total	1,841	$91,674	$224,980	$421,608

Estimates include direct, indirect, and induced multiplier effects.
Source: *IMPLAN* model for Desoto, Hardee, Polk, Manatee, and Sarasota Counties, FL, 2016

Table 3.8. State-local and federal government tax impacts of the Mosaic phosphate mine in the five-county region in central Florida

Tax Item	Development Spending ($1000)	Annual Operations Revenues ($1000)	Annual Agriculture Production Loss ($1000)
Dividends	$86	$85	-0.2
Social Ins Tax- Employee Contribution	$0	$0	0.0
Social Ins Tax- Employer Contribution	$0	$0	0.0
TOPI: Sales Tax	$11,223	$6,963	-24.5
TOPI: Property Tax	$7,386	$4,583	-16.1
TOPI: Motor Vehicle License	$205	$127	-0.4
TOPI: Severance Tax	$13	$10,800	0.0
TOPI: Other Taxes	$1,665	$1,033	-3.6
TOPI: S/L Non-Taxes	$1,214	$753	-2.6
Corporate Profits Tax	$659	$654	-1.5
Personal Tax: Income Tax	$0	$0	0.0
Personal Tax: Non-Taxes (Fines-Fees)	$1,996	$628	-5.5
Personal Tax: Motor Vehicle License	$266	$84	-0.7
Personal Tax: Property Taxes	$94	$30	-0.3
Personal Tax: Other Tax (Fish/Hunt)	$22	$7	-0.1
Total State and Local Tax	$24,829	$25,746	-55.6
Social Ins Tax- Employee Contribution	$18,584	$5,983	-47.3
Social Ins Tax- Employer Contribution	$16,329	$5,462	-34.9
TOPI: Excise Taxes	$1,732	$1,075	-3.8
TOPI: Custom Duty	$654	$406	-1.4
TOPI: Fed Non-Taxes	$82	$51	-0.2
Corporate Profits Tax	$5,491	$5,442	-12.6
Personal Tax: Income Tax	$25,397	$7,995	-70.6
Total Federal Tax	$68,270	$26,413	-170.8

Estimates include direct, indirect, and induced multiplier effects.
Source: *IMPLAN* model for Desoto, Hardee, Polk, Manatee, and Sarasota Counties, FL, 2016

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Appendix: Glossary of Economic Impact Analysis Terms

Contribution (economic) represents the gross change in economic activity associated with an industry, event, or policy in an existing regional economy.

Employee compensation is comprised of wages, salaries, commissions, and benefits such as health and life insurance, retirement and other forms of cash or non-cash compensation.

Employment is a measure of the number of jobs involved, including full-time, part-time, and seasonal positions. It is not a measure of full-time equivalents (FTE).

Exports are sales of goods to customers outside the region in which they are produced, which represents a net inflow of money to the region. This also applies to sales of goods and services to customers visiting from other regions.

Final Demand represents sales to final consumers, including households, governments, and exports from the region.

Gross Regional Product is a measure of total economic activity in a region, or total income generated by all goods and services. It equals the total value added by all industries in that region, and is equivalent to Gross Domestic Product for the nation.

IMPLAN is a computer-based input-output modeling system that enables users to create regional economic models and multipliers for any region consisting of one or more counties or states in the United States. The current version of the *IMPLAN* software, version 3, accounts for commodity production and consumption for 536 industry sectors, 10 household income levels, taxes to local/state and federal governments, capital investment, imports and exports, transfer payments, and business inventories. Regional datasets for individual counties or states are purchased separately.

Impact or total impact is the net change in total regional economic activity (e.g., output or employment) resulting from a change in final demand, direct industry output, or direct employment, estimated based on regional economic multipliers.

Imports are purchases of goods and services originating outside the region of analysis.

Income is the money earned within the region from production and sales. Total income includes labor income such as wages, salaries, employee benefits, and business proprietor income, plus other property income.

Taxes on Production and Imports are taxes paid to governments by individuals or businesses for property, excise, and sales taxes, but do not include income taxes.

Input-Output (I-O) model and Social Accounting Matrix (SAM) is a representation of the transactions between industry sectors within a regional economy that captures what each sector purchases from every other sector to produce its output of goods or services. Using such a model, flows of economic activity associated with any change in spending or employment may be traced backwards through the supply chain.

Local refers to goods and services that are sourced from within the region, which may be defined as a county, multi-county cluster, or state. Non-local refers to economic activity originating outside the region.

Margins represent the portion of the purchaser price accruing to the retailer, wholesaler, and producer/manufacturer in the supply chain. Typically, only the retail margins of many goods purchased by consumers accrue to the local region, as the wholesaler, shipper, and manufacturer often lie outside the local area.

Multipliers capture the total effects, both direct and secondary, in a given region, generally as a ratio of the total change in economic activity in the region relative to the direct change**.** Multipliers are derived from an I-O model of the regional economy. Multipliers may be expressed as ratios of sales, income, or employment, or as ratios of total income or employment changes relative to direct sales. Multipliers express the degree of interdependency between sectors in a region's economy and therefore vary considerably across regions and sectors. A **sector-specific multiplier** gives the total changes to the economy associated with a unit change in output or employment in a given sector (i.e., the **direct or initial economic effect)** being evaluated. **Indirect effects multipliers** represent the changes in sales, income, or employment within the region in backward-linked industries supplying goods and services to businesses (e.g., increased sales in input supply firms resulting from more nursery industry sales). **Induced effects multipliers** represent the increased sales within the region from household spending of the income earned in the direct and supporting industries for housing, utilities, food, etc. An **imputed multiplier** is calculated as the ratio of the total impact divided by direct effect for any given measure (e.g., output, employment).

Other property income represents income received from investments such as corporate dividends, royalties, property rentals, or interest on loans.

Output is the dollar value of a good or service produced or sold, and is equivalent to sales revenues plus changes in business inventories.

Producer prices are the prices paid for goods at the factory or point of production. For manufactured goods, the purchaser price equals the producer price plus a retail margin, a wholesale margin, and a transportation margin. For services, the producer and purchaser prices are equivalent.

Proprietor income is income received by non-incorporated private business owners or self-employed individuals.

Purchaser prices are the prices paid by the final consumer of a good or service.

Region or Regional Economy is the geographic area and the economic activity it contains for which impacts are estimated. It may consist of an individual county, an aggregation of several counties, a state, or aggregation of states. These aggregations are sometimes defined on the basis of worker commuting patterns.

Sector is an individual industry or group of industries that produce similar products or services, or have similar production processes. Sectors are classified according to the North American Industrial Classification System (NAICS).

Value Added is a broad measure of income, representing the sum of employee compensation, proprietor income, other property income, indirect business taxes and capital consumption (depreciation). Value added is a commonly used measure of the contribution of an industry to a regional economy because it avoids double counting of intermediate sales.