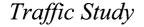
Traffic Study: Levy County Advanced Reactor Site Levy County, Florida Kimley-Horn and Associates, Inc. March 2009



Levy County Advanced Reactor Site

Levy County, Florida

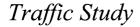
Prepared for:

The Shaw Group, Inc. Inglis, Florida

Prepared by:

Kimley-Horn and Associates, Inc. Tampa, Florida

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Levy County Advanced Reactor Site

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INTRODUCTION

Kimley-Horn and Associates, Inc. has been retained by The Shaw Group, Inc. to conduct a transportation impact analysis to evaluate the anticipated operation and construction activities of Progress Energy's proposed Levy County Advanced Reactor Site in Levy County, Florida. This study focused on project traffic impacts at project driveways and adjacent public intersections during the peak of construction (anticipated to be between 2014 and 2015) and at buildout of the development (anticipated to be 2017). Findings of this analysis will be used to support the driveway permit applications required for the project driveways.

The proposed project site is located on the east side of US 19, approximately 5.5 miles south of the US 19 & SR 121 intersection and approximately 4.0 miles north of the US 19 & CR 40 intersection, in Levy County, Florida. The facility will primarily consist of two (2) nuclear reactors and required ancillary buildings to support the training and operation of these reactors. The Levy County Advanced Reactor project will be designed and constructed as a "third-generation" nuclear facility; which requires fewer workers than older nuclear facilities.

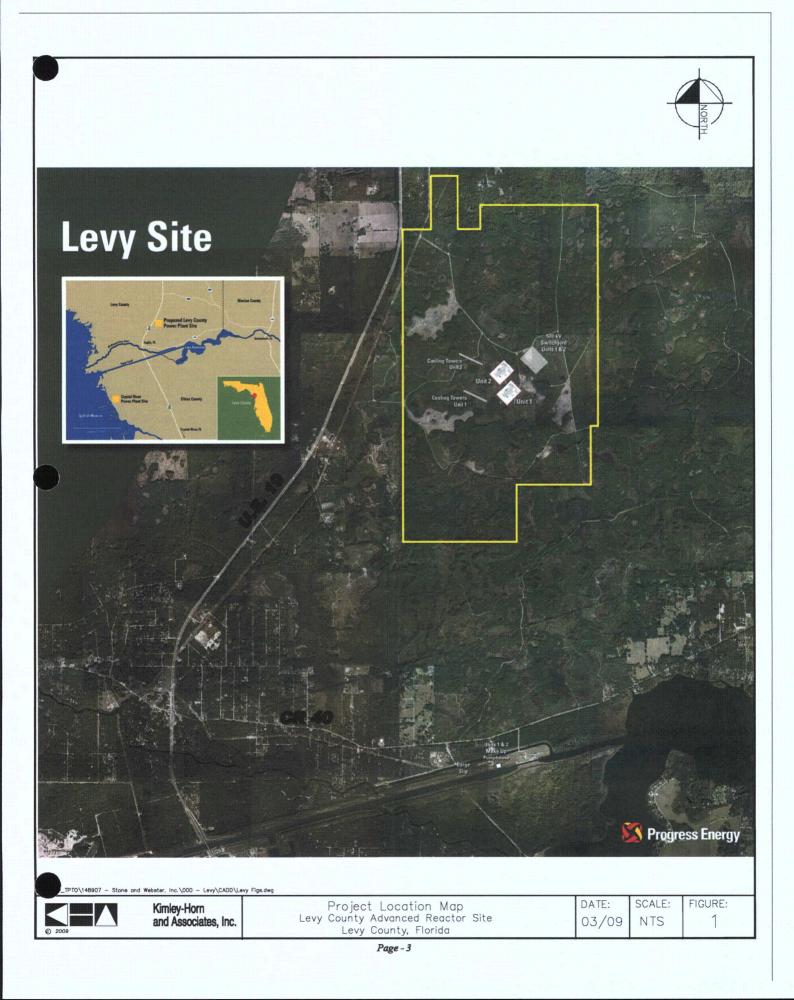
Access to the site is proposed through two driveways on US 19, and a heavy haul road intersection crossing CR 40. The northern US 19 driveway is proposed as a "construction only" driveway, while the southern US 19 driveway is proposed as the main site access upon completion of construction. During construction of the facility, no rail access was assumed and transport of bulk commodities to the site were defined consistent with the anticipated Barge/Truck shipment schedule. Based upon discussions with The Shaw Group, Inc., during the peak of construction a total of up to 3,300 construction workers may be required. In addition to the construction workers, up to 500 operational employees will be trained during the peak of construction, which coincides with the construction of Unit 1.



After construction is completed on Unit 1 and Unit 2, it was assumed that the site will be served by up to 800 full-time operational employees. Also as required, a refueling outage is periodically planned every 18 months for the site. During this time, 800 additional workers will be on-site to assist with this periodic maintenance (refueling). These 800 workers are anticipated to access the site via the Construction Driveway.

Construction on the first reactor is planned to be completed by 2016, and the second reactor is anticipated to be completed by 2017. Figure 1 illustrates the location of the project site, including the adjacent public roadway network.

Prior to conducting this analysis, an initial transportation methodology meeting was conducted for the study on November 25, 2008, with Levy County transportation staff and the Florida Department of Transportation (FDOT) District Two staff. As discussed at the methodology meeting, the intent of this study was to analyze the operational conditions at the proposed project driveway locations so that intersection improvements can be designed to accommodate the anticipated transportation impacts during and after construction of the proposed nuclear facility.



PROJECT TRAFFIC

Project traffic used in this analysis is defined as the vehicle trips expected to be generated in association with the construction and operation of the advanced reactor site. These trips were distributed and assigned throughout the study roadway network.

Existing and Proposed Land Uses

The proposed advanced reactor site is currently vacant and is expected to consist of two (2) "third-generation" nuclear reactors. Access to the proposed site is expected to be provided to US 19 through one northern driveway (Construction Driveway) and one southern driveway (Operations "Main" Driveway), and to CR 40 through the Heavy Haul Road crossing.

Trip Generation

The a.m. and p.m. peak hour trip generation potential of the proposed advanced reactor site was estimated based upon data collected at a similar, existing nuclear facility (i.e., Shearon Harris site in New Hill, North Carolina) and information provided by The Shaw Group, Inc. The trip generation for the proposed advanced reactor site was broken down into three categories: construction workforce, commodities delivery, and operational workforce.

For the purposes of this analysis, two trip generation estimates were conducted. The first estimate was based upon the "Peak Construction Workforce" scenario, which included construction workforce traffic, commodities delivery (truck) traffic, and operational workforce traffic. The following assumptions were considered as part of the "Peak Construction Workforce" traffic estimates:

- 3,300 construction workers at the peak of construction (year 2014-2015);
- Two shifts one large (70% of construction workers) and one small (30% of construction workers);
- Construction workers of the large shift enter the site during the a.m. peak hour and exit the site during the p.m. peak hour;

- Vehicle occupancy rate of 1.8 construction workers per vehicle;
- 150 vehicles and trucks associated with construction were assumed in the off-peak direction during the peak hours;
- The 500 operational employees that will be trained on-site during the peak of construction enter and exit the site during the a.m. and p.m. peak hours consistent with the directional split determined at the existing Shearon Harris Nuclear Plant; and
- 20% of daily vendor trucks (5 trucks) and 100% of the commodity delivery truck fleet (15 trucks) traveling in the peak direction during the a.m. and p.m. peak hours.

The second estimate was based upon the "Peak Operational Workforce" scenario, which included only operational workforce traffic at buildout of the facility. The following assumptions were considered as part of the "Peak Operational Workforce" traffic estimates:

- 800 operational employees at buildout of the nuclear facility (year 2017);
- Operational employees entering and exiting the site during the a.m. and p.m. peak hours were defined based upon the directional split at the existing Shearon Harris Nuclear Plant; and
- Peak hour trip rates based upon trip generation survey conducted at the existing Shearon Harris Nuclear Plant.

The daily, a.m. peak-hour and p.m. peak-hour trip generation potential for the two scenarios described above are summarized in Table 1 and documented in Appendix A.

Traffic Study

TABLE 1 Project Trip Generation Estimates								
Daily A.M. Peak Hour P.M. Peak Hour						ak Hour		
Scenario	Entering Exiting Entering Exiting Entering Exit					Exiting		
Peak Construction Workforce (3,300 construction workers and 500 operational employees)	2,262	2,262	1,433	163	163	1,415		
Peak Operational Workforce (800 operational employees)	531	531	212	20	20	185		

It should be noted that during the study methodology meeting on November 25, 2008, FDOT staff recommended conducting a trip generation study at the existing Crystal River nuclear facility to estimate the trip generation potential of the proposed Levy County Advanced Reactor site. However, the Crystal River facility is not a "third-generation" nuclear power facility and includes several coal burning power plants. Based upon this information, the Crystal River facility has different traffic generating characteristics than the proposed "third-generation" nuclear facility in Levy County. Therefore, the operational trip generation estimates collected from a similar nuclear facility (i.e. Shearon Harris Nuclear Plant with approximately 800 operational employees) was used in this analysis.

Trip Distribution and Trip Assignment

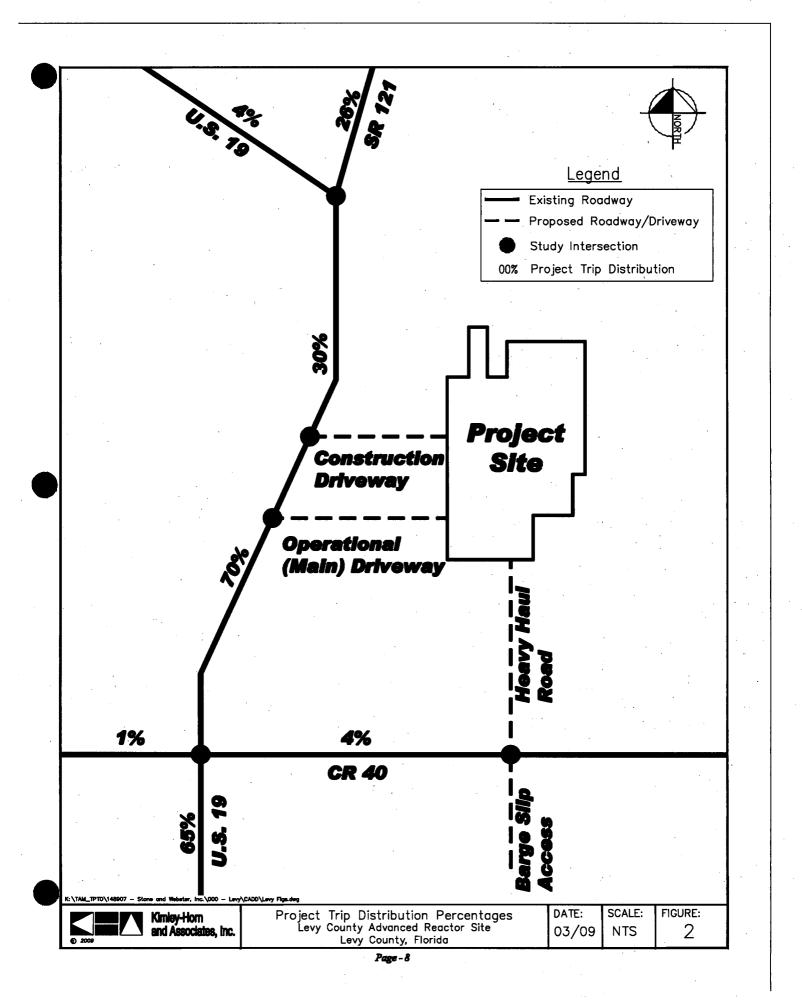
The trip distribution and trip assignment of project traffic was based upon a manual gravity model and supplemented with engineering judgment. The manual gravity model was based upon population estimates within a 35-mile radius from the proposed project site. The population data was published by the U.S. Census Bureau and the Bureau of Economic and Business Research (BEBR), including 2000 Census data and 2007 population estimates. It should be noted that a manual gravity model was used in place of a travel demand forecasting model (i.e., FSUTMS model) because no such model currently exists for Levy County.



The population estimates of each of the incorporated, and unincorporated, cities and towns documented by the U.S. Census Bureau, within a 35-mile radius of the project site, were included in the manual gravity model calculations. In addition, the manual gravity model also included the travel distance from each of these cities and towns to the project site.

The results of the manual gravity model calculation are provided in Table A of Appendix A. The results of the gravity model calculation indicated 30% of project traffic is expected to travel to/from north of the project site on US 19 and 70% is expected to travel to/from south of the project site on US 19, which was consistent with previous traffic studies completed for this site.

The resulting percentages were applied to the trip generation estimates shown in Table 1 above to estimate project trips within the vicinity of the project site. The distribution of project traffic, in terms of percentages, is shown in Figure 2.



SCHEDULED IMPROVEMENTS

A review of the Work Programs for Levy County and FDOT District 2 revealed no improvements are currently under construction or scheduled for construction within the next several years near the project site. Currently, FDOT District 7 is widening the US 19 bridge crossing the Florida Bypass Canal from the existing two-lanes to four-lanes. Based upon this information, existing lane geometry and traffic controls were used in the analysis of existing and future conditions for all intersections and roadways evaluated.

STUDY AREA

The extent of the roadway network to be studied was based upon all roadway segments for which project traffic is expected to consume at least five percent (5%) of the two-way, peak-hour LOS standard service volume for each specific segment. Based upon the low number of p.m. peak-hour trips expected to be generated during the Peak Operational Workforce traffic conditions (205 trips), only three (3) segments meet this criteria:

- US 19 from the Project Site to CR 40;
- SR 121 from US 19 to SE 80th Street/NW 27th Street; and
- US 41 from SE 80th Street/NW 27th Street to CR 328.

In addition to these impacted roadway segments, the first directly accessed roadway segments of US 19 from SR 121 to the project site and CR 40 from US 19 to Heavy Haul Road Access were evaluated in this analysis. It should be noted that no other segments of US 41 are significantly impacted by project traffic. The results of the study area determination are shown in Appendix A.

In addition to the above study roadway segments, the following intersections were evaluated:

- US 19 & SR 121;
- US 19 & CR 40;
- the two (2) proposed project access locations along US 19; and
- the one (1) proposed project access location along CR 40 (Heavy Haul Road Access).

US 19 is a four-lane, divided highway classified as an emerging Strategic Intermodal System (SIS) facility, with a level of service (LOS) standard of 'B'. SR 121 is a two-lane, undivided highway, with a LOS standard of 'C'. US 41 is a two-lane, undivided highway, with a LOS standard of 'C'. CR 40 is a two-lane, undivided major collector facility, with a LOS standard of 'C'. In addition, it should be noted that CR 40 currently has a 10 ton truck limit.

The existing US 19 & SR 121 study intersection is currently an unsignalized T-intersection with left-turn and/or right-turn lanes on each approach. The existing US 19 & CR 40 study intersection is currently signalized with left-turn and/or right-turn lanes on each approach. It should be noted that the adopted LOS performance standard for both of these study intersections is LOS C. This performance standard was compared to the existing and future operating conditions shown in later sections of this report to determine the traffic impacts of this development on these two intersections.

The northernmost project access location (i.e., Construction Driveway) along US 19 is proposed to be full-access, with an exclusive northbound right-turn lane, dual southbound left-turn lanes, dual westbound left-turn lanes, an exclusive westbound right-turn lane, and a traffic signal. The adopted LOS performance standard for the US 19 & Construction Driveway intersection is LOS B.

As previously mentioned, a periodic refueling outage is planned for the site every 18 months. During this time, an additional 800 workers (in addition to the 800 full-time operations workers) will be on-site assisting with the refueling process. It is planned that the additional 800 part-time workers will access the facility through the signalized construction driveway. After construction of the site, the existing traffic signal should operate in flashing mode, with periodic use during the refueling outage. Since the traffic signal is planned for flashing mode after construction, one of the southbound left-turn lanes should be restriped so that it is not used during the "flashing" signal intersection control. It is anticipated that the second southbound left-turn lane will not be required during the refueling. In addition, in the event that an Emergency Response/Fire Rescue facility is constructed on-site, the traffic signal could be modified for emergency signal use.

The southernmost project access location (i.e., Operations (Main) Driveway) along US 19 is proposed to be a full-access, unsignalized driveway with an exclusive northbound right-turn lane, an exclusive southbound left-turn lane, an exclusive westbound left-turn lane, and an exclusive westbound right-turn lane. The Operations (Main) Driveway is expected to remain unsignalized

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at buildout of the nuclear facility. The adopted LOS performance standard for the US 19 & Operations (Main) Driveway intersection is LOS B.

It should be noted that, as currently planned, the proposed project access locations will not align with existing full-access median openings along US 19. Median modifications, including closing and relocating existing median openings, are anticipated to be required. Further discussions with the FDOT are planned in regards to the driveway access locations.

The proposed "Heavy Haul Road" is a private road planned to connect the Florida Bypass Canal with the proposed site. This road will allow for the hauling of commodities required during construction of the site. This private road will intersect CR 40. Full access will be required at the crossing with CR 40, and an eastbound right turn-lane is proposed for truck use from CR 40. Although many of the commodities will be transported through standard 15 ton trucks, periodic modules to be delivered to the site will require a special heavy haul crawler that travels 3 to 5 miles per hour. Due to the unique characteristics of the crawler, it is recommended that right-of-way be granted to the crawler across CR 40 during the times of transport of periodic modules. In an effort to facilitate a safe crossing for these modules, it is recommended that, at a minimum, two (2) trained/certified flagmen direct traffic during the time the heavy hauler is crossing CR 40. Depending upon the outcome of discussions with the appropriate public agencies, other special traffic control methods may be required. The adopted LOS performance standard for the CR 40 & Heavy Haul Road intersection is LOS C.

It should be noted that the project access locations along US 19 and CR 40 were evaluated for both the a.m. and p.m. peak hours. However, the off-site study intersections and roadways were evaluated for the p.m. peak-hour, peak-season condition only because, typically, this is the time when the highest amount of background traffic occurs.

EXISTING TRAFFIC CONDITIONS

Existing traffic conditions were evaluated for the study roadway segments and study intersections previously identified. The procedures used in this analysis are discussed below.

Vehicle turning movement volume counts were obtained by KHA at the two (2) existing study intersections, as identified in the previous section of this report, during the p.m. peak period (4:00 P.M. to 6:00 P.M.) to quantify existing p.m. peak-hour conditions near the proposed project site. The counts were conducted in November and December 2008, and the raw counts are provided in Appendix B. Existing a.m. and p.m. peak-hour traffic volumes near the proposed project access locations were estimated based upon the average of a three-day, 24-hour machine count (converted to a.m. and p.m. peak-hour volumes) along both US 19 and CR 40. The 24-hour machine count data, which was collected in July 2008, was obtained from a traffic study (*Levy County Nuclear Power Plant*, July 2008 – Lincks and Associates) previously submitted to Levy County and is included in Appendix B. Existing p.m. peak-hour traffic volumes along US 41, from SE 80th Street/NW 27th Street to CR 328, were estimated based upon the average of a two-day, 24-hour machine count (converted to a.m. peak-hour volumes) conducted by the FDOT and documented in the *2007 Florida Traffic Information DVD*.

The vehicle counts at the two (2) existing study intersections and the 24-hour machine counts were adjusted to reflect peak-season conditions. This modification was performed using the FDOT seasonal adjustment factors for Levy County. The appropriate factors used, including the existing peak-season traffic volumes, are provided in Appendix C.

Using the existing peak-season traffic volumes identified in Appendix C, an intersection analysis was conducted for the two (2) existing study intersections during the p.m. peak hour. The intersection analysis was performed using the HCS+ (Release 5.21) program for signalized and unsignalized intersections. As part of this analysis, existing lane geometry and traffic controls were used for the study intersections.

The results of this analysis are summarized in Table 2 and indicate that both study intersections are currently operating at an acceptable LOS performance standard during the p.m. peak hour. Summary worksheets of the intersection analysis are provided in Appendix D.

TABLE 2 2008 P.M. Peak-Hour Existing Intersection Conditions							
	Overall Intersection LOS Approach LOS					DS	
Intersection	Standard	Existing Traffic	NB	SB	EB	WB	
US 19 & SR 121 (unsignalized)	С	A*				A	
US 19 & CR 40 (signalized)	С	В	В	В	C	C	

*LOS on cross-street approach for the unsignalized intersection.

In addition to the intersection analysis, a roadway analysis was conducted for the study roadway segments of US 19 (from SR 121 to CR 40), SR 121 (from US 19 to SE 80th Street/NW 27th Street), US 41 (from SE 80th Street/NW 27th Street to CR 328), and CR 40 (from US 19 to the proposed Heavy Haul Road) for the p.m. peak hour. Service volumes were defined using the FDOT's *2007 Quality/Level of Service Tables* and accompanying FDOT *LOSPlan 2007* software based upon the existing roadway characteristics. The use of the service volumes found in the FDOT *2007 Quality/Level of Service Tables* provided a conservative (worst-case) estimate of operating conditions along the study roadway segments.

The results of the roadway analysis, which are summarized in Table 3, indicated that the study roadway segments along US 19, SR 121, US 41, and CR 40 are currently operating at an acceptable LOS performance standard during the p.m. peak hour. Worksheets documenting the roadway analysis are provided in Appendix D.



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TABLE 3 2008 P.M. Peak-Hour Existing Roadway Conditions						
Roadway	LOS Standard	Roadway LOS (Two-Way)				
US 19 SR 121 to Project Site	В	A				
US 19 Project Site to CR 40	В	A				
SR 121 US 19 to NW 27 th Street	С	A				
US 41 SE 80 th Street/NW 27 th Street to CR 328	С	В				
CR 40 US 19 to Heavy Haul Driveway	С	С				

Traffic Study

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FUTURE TRAFFIC VOLUMES

Future traffic volumes consist of two components: project traffic and background (non-project) traffic estimates. Project traffic volumes have been previously identified in this report. Future background traffic volumes, including the procedures used to develop these estimates, are provided below.

Future background traffic is defined as expected traffic on the roadway network in the future year for specific development levels of the proposed project. For the purposes of this analysis, two "future" year scenarios were evaluated: the "Peak Construction Workforce" scenario (anticipated to be between years 2014 and 2015) and the "Peak Operational Workforce" scenario (anticipated being year 2017). The following procedure was undertaken to develop the future 2015 (representing the worst-case construction year) and 2017 background traffic volumes. These volumes considered existing traffic volumes adjusted by an annual growth rate and estimated volumes from other approved and/or planned developments in the area.

To develop the future background volumes, the existing 2008 peak-season volumes, as previously identified in Appendix C, were first adjusted by an annual growth rate of 2.2% to reflect 2015 and 2017 conditions. The determination of this percentage was based upon historical traffic data in the area, as documented by the FDOT. The growth rate, as documented in Appendix C, was also applied to the existing traffic counts at the study intersections.

In addition to the annual growth rate, traffic volumes associated with approved and/or planned developments in the area were added to the adjusted existing traffic volumes to determine background traffic estimates. Based upon discussions with Levy County and FDOT staff, only one proposed development (Tarmac Lime-Rock Mine) was provided. It is understood that, based upon these discussions with Levy County and FDOT staff, the Tarmac Lime-Rock Mine is currently not approved but may be approved in 2009. In an effort to provide a conservative analysis, the trip generation potential of this development was included in the analysis as if it has

been approved based on the TIA performed by Grimail Crawford and submitted in November 2007.

The traffic volumes from the Tarmac Lime-Rock Mine development were added to the adjusted (to year 2015 and 2017) peak-season existing traffic volumes to produce both future 2015 and 2017 a.m. and p.m. peak-hour background traffic volume estimates.

The future background traffic volumes, including the Tarmac Lime-Rock Mine development traffic, are documented in Appendix C. The project traffic volumes, as previously shown, were then added to these background traffic volumes to determine 2015 and 2017 total traffic volumes for both peak hours. The total traffic volumes for both the a.m. and p.m. peak hours are documented in Appendix C.

PEAK CONSTRUCTION WORKFORCE TRAFFIC CONDITIONS

The Peak Construction Workforce traffic scenario was evaluated for year 2015 conditions of the development during both the a.m. and p.m. peak-hour scenarios. It should be noted that the Peak Construction Workforce scenario includes two (2) separate commodity delivery routes planned for truck commodity deliveries. It should also be noted that regardless of the truck commodity deliveries (accessing the site via the crawler). In the preferred route, deliveries from the barge slip will access the site using the Heavy Haul Road with a return ("unloaded truck") trip to the barge slip along US 19 and CR 40. An alternative route is provided if the preferred route cannot be used. The alternative route proposes loaded truck commodity deliveries access the site by traversing west on CR 40, then north on US 19, and enter the site via the Construction Driveway, with a similar return ("unloaded truck") route to the preferred route. For the purpose of this analysis, both routes were analyzed separately. For these analyses, Peak Construction Workforce traffic estimates and existing/proposed traffic controls and lane geometry, as previously discussed, were considered.

A determination of the impact of the Peak Construction Workforce traffic volumes, as documented in Appendix C, on the roadway network was made, including LOS conditions for the intersections and roadway segments within the study area. The analysis procedures used in this evaluation were similar to those used to evaluate existing traffic conditions. As previously mentioned, the proposed project access locations along US 19 and CR 40 were evaluated for both the a.m. and p.m. peak hours. However, the off-site study intersections and roadways were evaluated for the p.m. peak-hour, peak-season condition only.

The results of the a.m. peak-hour intersection analysis conducted for both of the heavy haul truck routes are summarized in Table 4 and indicate that each of the proposed project access locations are expected to operate at an acceptable LOS performance standard with the proposed traffic controls and lane geometry identified in the "Study Area" section of this report. Summary worksheets of the intersection analysis are provided in Appendix E.



TABLE 42015 A.M. Peak-HourPeak Construction Workforce Traffic Intersection Conditions								
	Overall Intersection LOS			Approach LOS				
Intersection	Standard	Construction Traffic	NB	SB	EB	WB		
Preferred Commodity Delivery Route								
US 19 & Construction Driveway (signalized)	В	B*	В	С		D		
US 19 & Operations (Main) Driveway (unsignalized)	В	C**				С		
CR 40 & Heavy Haul Driveway (unsignalized)	С	B**	В	В				
Alternati	ve Commodity	y Delivery Route						
US 19 & Construction Driveway (signalized)	В	B*	В	C		D		
US 19 & Operations (Main) Driveway (unsignalized)	В	C**				C		
CR 40 & Heavy Haul Driveway (unsignalized)	С	B**	В	В				

* LOS based upon proposed lane geometry and traffic controls.

**LOS on cross-street approach for the unsignalized intersection, including the proposed lane geometry and traffic controls.

In addition to the intersection analysis performed during the a.m. peak hour, an intersection analysis was conducted at the two (2) existing study intersections and at the proposed project access locations along US 19 and CR 40 during the p.m. peak hour, for both of the heavy haul truck routes. The analysis procedures used in this evaluation were similar to those used to evaluate existing traffic conditions.

The results of the p.m. peak-hour intersection analysis conducted for both of the commodity delivery routes plans are summarized in Table 5 and indicated that the study intersections and two (2) of the proposed access locations are expected to operate at an acceptable LOS performance standard without any additional improvements, beyond those previously identified in the "Study Area" section of this report.



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Peak Construction V	TABLE2015 P.M. PealWorkforce Tra	k-Hour	Condit	ions		
	Overall Intersection LOS					
Intersection	Standard	Construction Traffic	NB	SB	EB	WB
Preferre	ed Commodity	Delivery Route	4		•	
US 19 & SR 121 (unsignalized)	C	B*				В
US 19 & CR 40 (signalized)	C	В	В	В	С	C
US 19 & Construction Driveway (signalized)	В	C**	В	В		D
US 19 & Operations (Main) Driveway (unsignalized)	В	B***				В
CR 40 & Heavy Haul Driveway (unsignalized)	С	B***	В	В		
Alternati	ve Commodity	Delivery Route	d <u></u>		•	
US 19 & SR 121 (unsignalized)	С	B*				В
US 19 & CR 40 (signalized)	С	В	В	В	С	C
US 19 & Construction Driveway (signalized)	В	C**	В	В		D
US 19 & Operations (Main) Driveway (unsignalized)	В	B***				В
CR 40 & Heavy Haul Driveway (unsignalized)	C	B***	В	В		

*LOS on cross-street approach for the unsignalized intersection. **LOS based upon proposed lane geometry and traffic controls. ***LOS on cross-street approach for the unsignalized intersection, including the proposed lane geometry and traffic controls.

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The one exception is the US 19 & Construction Driveway access location. This intersection is expected to operate at an overall LOS C. However, the US 19 mainline approaches are expected to operate at an acceptable LOS. Considering the fact that the traffic signal at the Construction Driveway will only operate periodically during construction and refueling, and that the mainline approaches are both operating at an acceptable LOS, no additional improvements, beyond those previously identified in the "Study Area" section of this report, are recommended.

In addition to the intersection analyses, a p.m. peak-hour roadway analysis was conducted for the previously identified study roadway segments within the study area, for both of the commodity delivery route plans. The analysis procedures for this evaluation were similar to those used to evaluate existing traffic conditions.

The results of the p.m. peak-hour roadway analysis are summarized in Table 6 and indicate that the study roadway segments along US 19, SR 121, US 41, and CR 40 have adequate capacity and are expected to operate at an acceptable LOS with Peak Construction Workforce traffic, without any roadway improvements required. Worksheets documenting the intersection and roadway analyses are provided in Appendix E.



TABLE 6 2015 P.M. Peak-Hour Peak Construction Workforce Traffic Roadway Conditions							
Roadway	LOS Standard	Roadway LOS					
Preferred Commodi	ty Delivery Route						
US 19: SR 121 to Project Site B A							
US 19: Project Site to CR 40	В	В					
SR 121: US 19 to NW 27 th Street	С	С					
US 41: SE 80 th Street/NW 27 th Street to CR 328	С	C*					
CR 40: US 19 to Heavy Haul Driveway	С	С					
Alternative Commod	ity Delivery Route						
US 19: SR 121 to Project Site	B	А					
US 19: Project Site to CR 40	В	В					
SR 121: US 19 to NW 27 th Street	С	С					
US 41: SE 80 th Street/NW 27 th Street to CR 328	С	C*					
CR 40: US 19 to Heavy Haul Driveway	С	С					

*LOS based upon a detailed HIGHPLAN analysis of the segment.

PEAK OPERATIONAL WORKFORCE TRAFFIC CONDITIONS

The Peak Operational Workforce traffic scenario was evaluated for the 2017 buildout year of the site during the both the a.m. and p.m. peak hour scenarios. For this analysis, Peak Operational Workforce traffic estimates and existing/proposed traffic controls and lane geometry, as previously discussed, were considered.

A determination of the impact of the Peak Operational Workforce traffic volumes, as documented in Appendix C, on the roadway network was made, including LOS conditions for the intersections and roadway segments within the study area. The analysis procedures used in this evaluation were similar to those used to evaluate existing traffic conditions. As previously mentioned, the proposed project access locations along US 19 and CR 40 were evaluated for both the a.m. and p.m. peak hours. However, the off-site study intersections and roadways were evaluated for the p.m. peak-hour, peak-season condition only. It should be noted that at the completion of construction, the Construction Driveway and Heavy Haul Driveway are expected to have minimal, if any, traffic. Therefore, for the 2017 buildout conditions, these two project access locations were not evaluated.

The results of the a.m. peak-hour intersection analysis for the US 19 & Operations (Main) Driveway project access location are summarized in Table 7 and indicate that this project access location is expected to operate at an acceptable LOS with no additional intersection improvements, beyond those previously identified in the "Study Area" section of this report, required. Summary worksheets of the intersection analysis are provided in Appendix E.

TABLE 7 2017 A.M. Peak-Hour Peak Operational Workforce Traffic Intersection Conditions							
Overall Intersection LOS Approach LOS						os	
Intersection	Standard	Total Traffic	NB	SB	EB	WB	
US 19 & Operations (Main) Driveway (unsignalized)	В	B*				В	

* LOS on cross-street approach for the unsignalized intersection.

During the time of a periodic refueling outage planned every 18 months, an additional 800 workers (in addition to the 800 full-time operations workers) will be on-site to assist with the refueling outage. It is planned that the additional 800 workers will access the facility through the Construction Driveway. Impacts associated with the refueling are less than those evaluated during the Peak Construction Workforce scenario. Therefore, the improvements described in the "Study Area" section of this report are anticipated to be sufficient to serve the additional traffic associated with the refueling outage.

In addition to the intersection analysis performed for the a.m. peak hour, an intersection analysis was conducted at the two (2) existing study intersections and the Operations (Main) Driveway during the p.m. peak hour. The analysis procedures used in this evaluation were similar to those used to evaluate existing traffic conditions.

The results of the p.m. peak-hour intersection analysis are summarized in Table 8 and indicate that both study intersections and the Operations (Main) Driveway are expected to operate at an acceptable LOS without any additional improvements, beyond those previously identified in the "Study Area" section of this report. Summary worksheets of the intersection analysis are provided in Appendix E.



TABLE 8 2017 P.M. Peak-Hour Peak Operational Workforce Traffic Intersection Conditions									
Overall Intersection LO				pproa	oach LOS				
Intersection	Standard	Total Traffic	NB	SB	EB	WB			
US 19 & SR 121 (unsignalized)	С	B*				В			
US 19 & CR 40 (signalized)	С	В	В	В	С	С			
US 19 & Operations (Main) Driveway (unsignalized)	В	B*				В			

*LOS on cross-street approach for the unsignalized intersection.

In addition to the intersection analyses, a p.m. peak-hour roadway analysis was undertaken on the previously identified study roadway segments within the study area. The analysis procedures for this evaluation were similar to those used to evaluate existing and background traffic conditions.

The results of the p.m. peak-hour roadway analysis are summarized in Table 9 and indicate that the study roadway segments along US 19, SR 121, US 41, and CR 40 have adequate capacity and are expected to operate at an acceptable LOS with Peak Operational Workforce traffic, without any required roadway improvements. Worksheets documenting the roadway analyses are provided in Appendix E.

.



TABLE 9 2017 P.M. Peak-Hour Peak Operational Workforce Traffic Roadway Conditions								
Roadway LOS Standard Roadway LOS								
US 19: SR 121 to Project Site	В	А						
US 19: Project Site to CR 40	В	А						
SR 121: US 19 to NW 27 th Street	С	· A						
US 41: SE 80 th Street/NW 27 th Street to CR 328	С	С						
CR 40: US 19 to Heavy Haul Driveway	С	С						

TURN LANE ANALYSIS

In addition to the analyses contained in earlier sections of this report, a turn-lane analysis was conducted to determine anticipated turn-lane length requirements for the proposed intersection improvements (i.e. left-turn lanes and right-turn lanes) into the project site at the project access locations on US 19 and CR 40. As previously indicated, these turn lanes are required to support the construction and operation of the site.

In addition, at the US 19 & CR 40 intersection, the southbound left-turn lane and the westbound right-turn lane were also reviewed for turn-lane length requirements because a significant number of project-related trips are anticipated to utilize these movements.

The procedures used for this evaluation follow FDOT plans preparation design guidelines for turn lanes at signalized and unsignalized intersections to determine the appropriate deceleration length and queue length requirements. The results of this evaluation are provided in Table 10 and the worksheets summarizing the turn-lane calculations are documented in Appendix F.

The total turn-lane length requirements for turn lanes into the project site at each of the three project driveways along US 19 (Construction Driveway and Operations (Main) Driveway) and CR 40 (Heavy Haul Road) are shown in Table 10.

In addition, for the intersection of US 19 & CR 40, the total turn-lane length (requirement) for the southbound left-turn lane needs to be lengthened from 340 feet to 450 feet, and the westbound right-turn lane needs to be lengthened from 195 feet to 340 feet.

Driveway

TABLE 10 Turn Lane Length Requirements (Worst-Case Traffic Scenario) Turn Lane Length per Lane Movement and (Includes deceleration and Intersection (Worst-Case Traffic Scenario) queue length) Lane(s) 1,610 feet (new construction) US 19 & Construction Driveway NB Right-Turn (Peak Construction Workforce) 785 feet (new construction) Dual SB Left-Turn US 19 & Operations (Main) NB Right-Turn 460 feet (new construction) SR Left_Turn 510 feet (new construction)

(Peak Operational Workforce)	SD Lett-Tum	510 leet (new construction)
US 19 & CR 40 (Peak Construction Workforce)	SB Left-Turn WB Right-Turn	Lengthen from 340 feet to 450 feet Lengthen from 195 feet to 340 feet
CR 40 & Heavy Haul Driveway (Peak Construction Workforce)	EB Right-Turn	405 feet (new construction)

Traffic Study

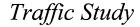
CONCLUSION

Evaluating the existing transportation network based upon the anticipated traffic impacts from the proposed Levy County Advanced Reactor during the Peak Construction Workforce Traffic and Peak Operational Workforce Traffic conditions, the following recommended intersection improvements were determined to be necessary to accommodate the anticipated impacts. The recommended improvements, based upon the worst-case traffic conditions at each intersection, are as follows:

• US 19 & CR 40 (Peak Construction Workforce)

-Extend existing southbound left-turn lane from 340 feet to 450 feet.-Extend existing westbound right-turn lane from 195 feet to 340 feet.

- US 19 & Construction Driveway (Peak Construction Workforce) -Installation of a traffic signal.
 - -Construct one (1) northbound right-turn lane approximately 1,610 feet.
 - -Construct two (2) southbound left-turn lanes approximately 785 feet each.
 - -Construct two (2) westbound left-turn lanes exiting the site.
 - -Construct one (1) westbound right-turn lane exiting the site.
- US 19 & Operations (Main) Driveway (Peak Operational Workforce)
 - -Construct one (1) northbound right-turn lane approximately 460 feet.
 - -Construct one (1) southbound left-turn lane approximately 510 feet.
 - -Construct one (1) westbound left-turn lane exiting the site.
 - -Construct one (1) westbound right-turn lane exiting the site.
- CR 40 & Heavy Haul Driveway (Peak Construction Workforce)
 - -Construct one (1) northbound approach lane.
 - -Construct one (1) eastbound right-turn lane approximately 405 feet.
 - -At a minimum, provide two (2) trained/certified flagmen to direct traffic during the time the heavy hauler is crossing the roadway.



Levy County Advanced Reactor Site

Levy County, Florida

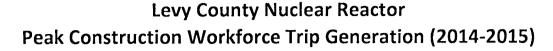
Prepared for:

The Shaw Group, Inc. Inglis, Florida

Prepared by:

Kimley-Horn and Associates, Inc. Tampa, Florida

©Kimley-Horn and Associates, Inc. March 2009 148907000 APPENDIX A: Project Trip Generation, Trip Distribution, and Study Area Worksheets



		Daily		AM Peak Hour		PM Peak Hour		ur	
	In	Out	Total	In	Out	Total	In	Out	Total
Construction Workforce	1,830	1,830	3,660	1,280	150	1,430	150	1,280	1,430
Commodity Deliveries (Trucks)	100	100	200	20	0*	20	0*	20	20
Operational Employees	332	332	664	133	13	146	13	115	128
Total Trips	2,262	2,262	4,524	1,433	163	1,596	163	1,415	1,578

Notes: 1. Assumes 500 operational employees during the peak of construction.

2. Assumes a construction workforce of 3,300 employees at the peak of construction.

- 3. Assumes a maximum impact of 15 truck fleet during peak hour and 5 vendor trucks (20% of daily vendor trucks) during peak hour.
- * Truck traffic included in off-peak workforce assumptions.

Levy County Nuclear Reactor Peak Operational Workforce Trip Generation (2017 Buildout)

		Daily		A	AM Peak Hour			PM Peak Hour		
	ln	Out	Total	In	Out	Total	In	Out	Total	
Construction Workforce	-	-	-		-	-	-	-	-	
Commodity Deliveries (Trucks)	-	-	-	-	-	-	-	-	-	
Operational Employees	531	531	1,062	212	20	232	20	185	205	
Total Trips	531	531	1,062	212	20	232	20	185	205	

Notes: 1. Assumes 800 operational employees upon construction completion.

2011 through 2016 Peak Construction Workforce Traffic

Levy County Advanced Reactor Construction Trip Generation

Construction Workforce Assumptions

Peak construction workforce:	3,300 workers
Number of shifts per day:	2
Percent of workforce during largest shift:	70%
Vehicle occupancy rate:	1.8 workers per vehicle
Off-peak construction traffic:	150 vehicles (including trucks in off-peak)
Anticpated vendor trucks per day:	25 vehicles per day

Construction Workforce Calculations (Peak Hour)

1. Determine peak construction workforce for largest shift.

Anticipated construction workforce:	3,300 workers	
Percent of workforce during large shift:	70%	
Construction workforce (large shift):	2,310 workers	· · · · · ·
Construction workforce (small shift):	990 workers	

2. Determine anticipated peak demand for construction workforce during largest shift.

Total vehicle demand:	1,830 vehicles per day	
Peak vehicle demand (small shift):	550 peak hour vehicles (rounded)	
Peak vehicle demand (large shift):	1,280 peak hour vehicles (rounded)	
Vehicle occupancy rate:	1.8 workers per vehicle	
Construction workforce (small shift):	990 workers	
Construction workforce (large shift):	2,310 workers	

3. Add anticipated truck traffic to construction workforce peak demand.

Commodity peak truck traffic:	15 (based upon a 15 truck fleet size)
Vendor trucks:	5 assume 20% vender trucks during peak hour
Total truck traffic:	20 trucks during peak traffic

4. Peak hour traffic conditions at peak of construction.

Peak construction shift vehicles:	1,280 peak hour vehicles (rounded)
Anticipated peak trucks during construction:	20 trucks during peak traffic
Total peak traffic:	1,300 vehicles and truck peak demands

2009 through 2016 Anticipated Construction Truck Traffic

Commodity	Monday	Tuesday	Wednesday	Thursday	Friday	Total
Rebar	2				2	4
Cement	6	6	6	6	6	30
Vendors	25	25	25	25	25	125
Aggregate		39	39	39		117
Total	33	70	70	70	33	276

Site Preparation Anticipated Truck Schedule (2nd Quarter 2009 to 3rd Quarter 2012)

Note: Reactor Module shipments, one every 2 weeks for 216 weeks, starting on 1/1/2011.

Reactor Construction Truck Delivery Schedule (3rd Quarter 2012 to 2nd Quarter 2016)

	Commodity	Monday	Tuesday	Wednesday	Thursday	Friday	Total
	Rebar	2				2	4
	Cement	9	9	9	9	9	45
	Vendors	25	25	25	25	25	125
	Aggregate		66	66	66		198
• —	Total	36	100	100	100	36	372

Note: Reactor Module shipments, one every 2 weeks for 216 weeks, starting on 1/1/2011.



Operational Workforce Traffic (Based upon Existing Harris Advanced Reactor Trip Generation)

Existing Harris Advanced Reactor Trip Generation (Operational employee traffic at existing facility)

				Trip Genera	tion Summary
Daily Trips	In	Out	Total	D	aily
Trip Ends (Estimated)	500	500	1000	Rate	Unit
Directional Distribution	50%	50%	100%	1.33	Employee
AM Peak Hour Trips	In	Out	Total	AM P	eak Hour
Trip Ends	200	19	219	Rate	Unit
Directional Distribution	91%	9%	100%	0.29	Employee
PM Peak Hour Trips	In .	Out	Total	PM Pe	eak Hour
Trip Ends	19	174	193	Rate	Unit
Directional Distribution	10%	90%	100%	0.26	Employee
				••••••••••••••••••••••••••••••••••••••	

Harris Advanced Reactor: 754 Existing Employees

Levy County Advanced Reactor Trip Generation (Peak operational employee traffic during construction)

Operational employees during construction:						
Daily Trips	In	Out	Total			
Trip Ends	332	332	664			
Directional Distribution	50%	50%	100%			
AM Peak Hour Trips	In	Out	Total			
Trip Ends	133	13	146			
Directional Distribution	91%	9%	100%			
PM Peak Hour Trips	In	Out	Total			
Trip Ends	13	115	128			
Directional Distribution	10%	90%	100%			

Levy County Advanced Reactor Trip Generation (Operational employee traffic in 2017 after the completion of construction of both reactors)

Operational employe	800		
Daily Trips	In	Out	Total
Trip Ends	531	531	1062
Directional Distribution	50%	50%	100%
AM Peak Hour Trips	In	Out	Total
Trip Ends	212	20	232
Directional Distribution	91%	9%	100%
PM Peak Hour Trips	In	Out	Total
Trip Ends	20	185	205
Directional Distribution	10%	90%	100%

		12,	/04/08			
OUTE	COUNTY	CITY	DISTRIBUTION	POPULATION	DISTANCE	GRAVIT
e Maps	ALACHUA	Alachua		7,854	61.2	
		Archer	0.41%	1,229	38.4	0.833
		Gainsville	1	122,671	49.4	
		Hawthorne		1,401	60,5	
		High-Springs		4,739	65,3	
		LaCrosse		195	62.5	
		Micanopy		637	46.0	
		Newberry Waldo		4,787	47.6	
	1	Waldo	L	831	61.9	
	CITRUS	Crystal River	8.68%	3,737	14.5	17.774
		Inverness	3.45%	7,286		7.071
		Beverly Hills	8.96%	9,959	23.3	
		Black Diamond	0.75%	831	23.3	
	1	Citrus Hills	3.65%	4,825	25.4	
		Pine Ridge	4.86%	6,574	25.7	9.953
		Citrus Springs	5.02%	4,978	22.0	10.28
	1	Floral City	1.93%	5,974	38.9	3.948
		Homosassa	2.22%	2,747	24,6	4.539
		Homosassa Springs	15.91%			
		Sugarmill Woods	3.78%	· · · · · · · · · · · · · · · · · · ·	<u>.</u>	
		Hernando	6.07%	9,883	28.2	12.42
	CILCUPICT	lo-u		1	E	
	GILCHRIST	Bell Copping Springs	+	452 350		
		Fanning Springs Trenton		330 1,690		
					,	
	HERNANDO	Brooksville	1.82%	1		
	1	Weeki-Washee		8	43.1	1
	LEVY	Bronson	0.56%	1,143	31.6	1.145
		Cedar Key	0.27%			
		Chiefland	1.14%			
		Fanning Springs		596		
		Inglis	*	1,731		
		Otter Creek	0.18%			0.37
		Williston	1.68%			
		Yankeetown	*	760	5.6	*
	1	Andrews	0.30%	822	2 36.6	0.614
		East Bronson	0.50%	1,248	3 34.9	1.02
		East Williston	0.67%			
	1	Manatee Road	0.80%	2,249	37.0	1.64
		Williston Highlands	1.62%			3.32
		Dellastan	1	1 0.000		1 6 65
	MARION	Belleview	0.91%		and the second se	
		Dunnellon	3.06%			
		Meintosh Ocala		45:		
		Reddick	20.679			
		Silver Springs Shores	0,147	8,54		
		L				• <u>•</u>
	SUMTER	Bushnell		2,33	8 54.	2
		Center Hill		91	2 61.	2
		Coleman		64	7 59.4	₹
				64 77		

* - Excluded from distribution calculation due to abnormally high gravity factor.

TABLE A

% Distribution North 28.94% -> 30.0%

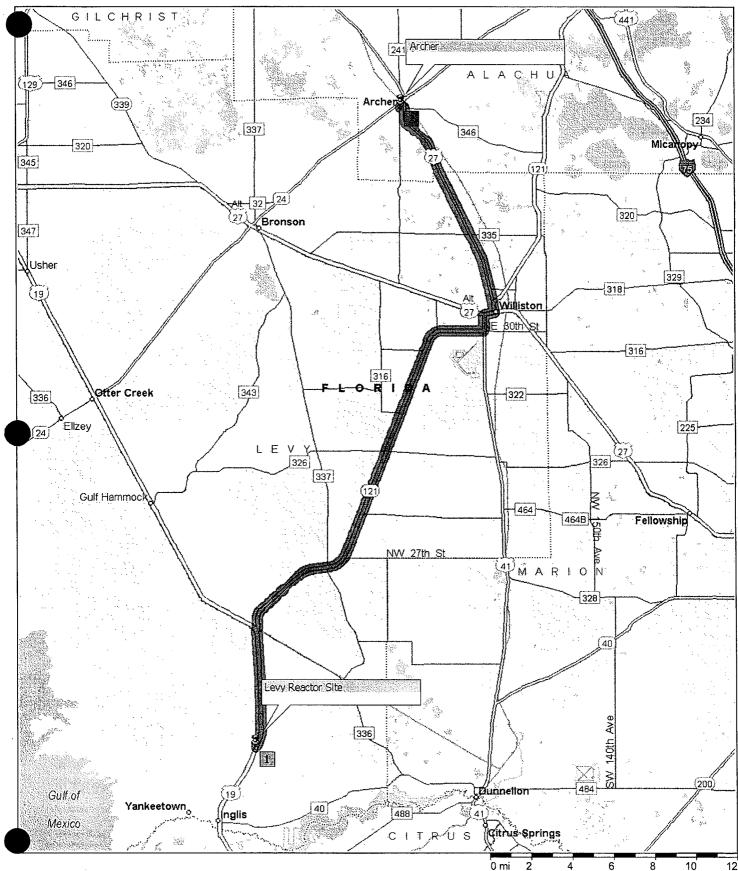
% Distribution South 71.06% -> 70.0%

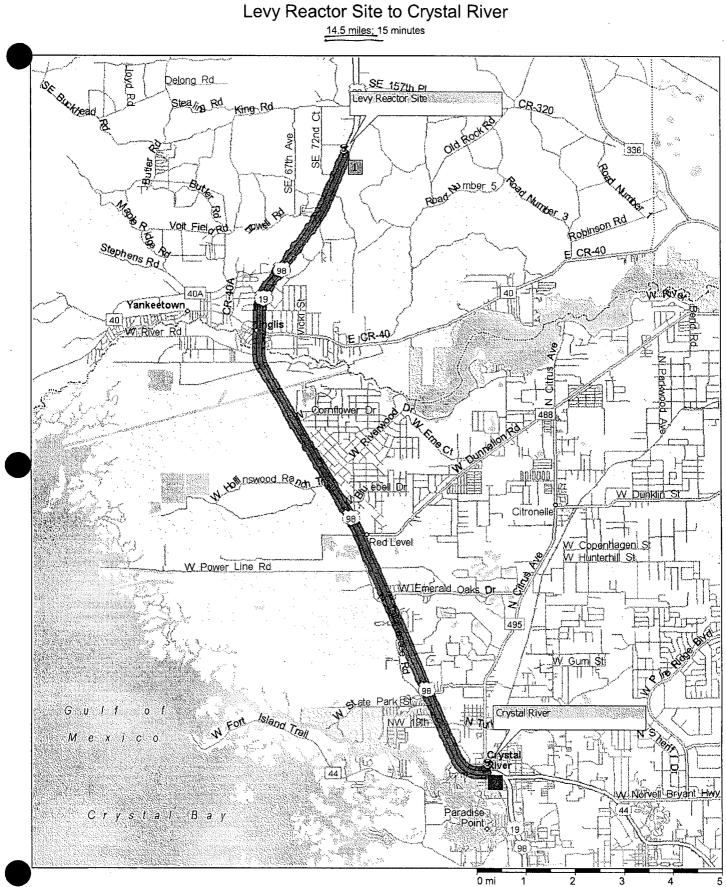
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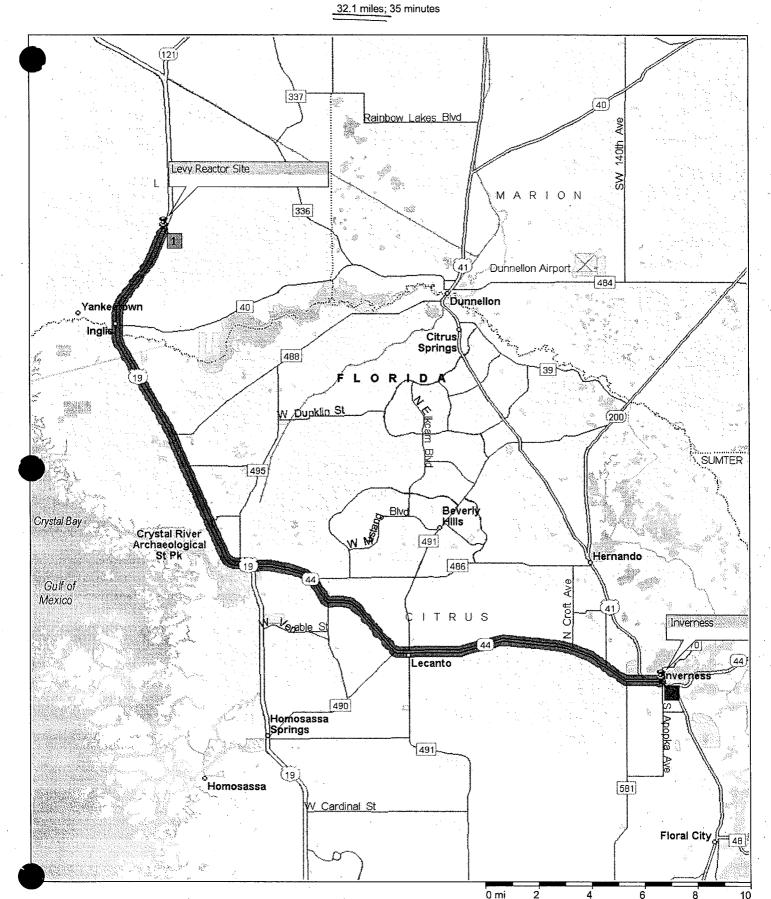
Levy Reactor Site to Archer

38.4 miles; 42 minutes





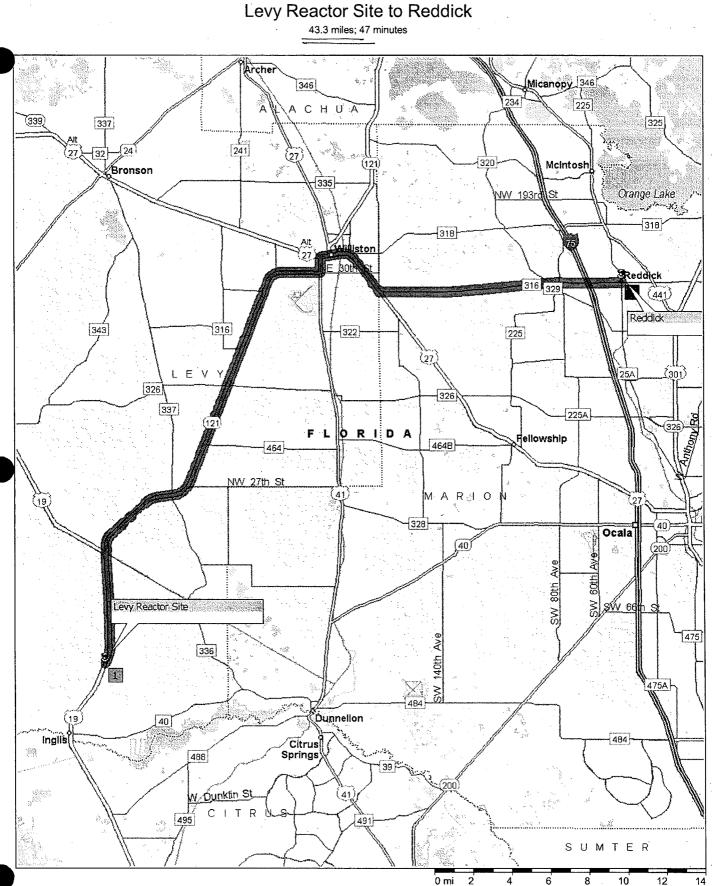
Levy Reactor Site to Inverness



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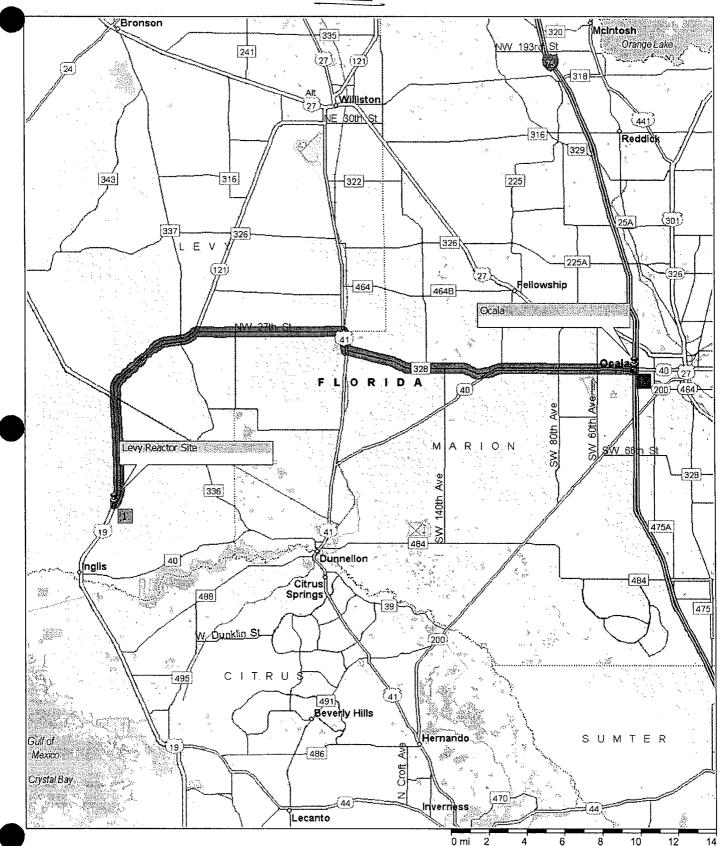
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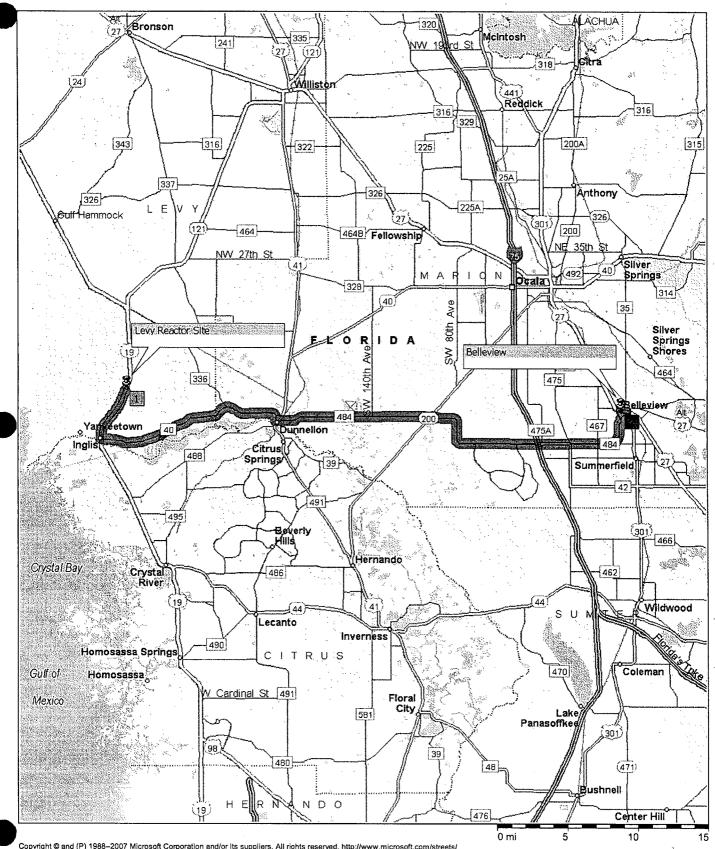
Levy Reactor Site to Ocala

35.8 miles; 45 minutes



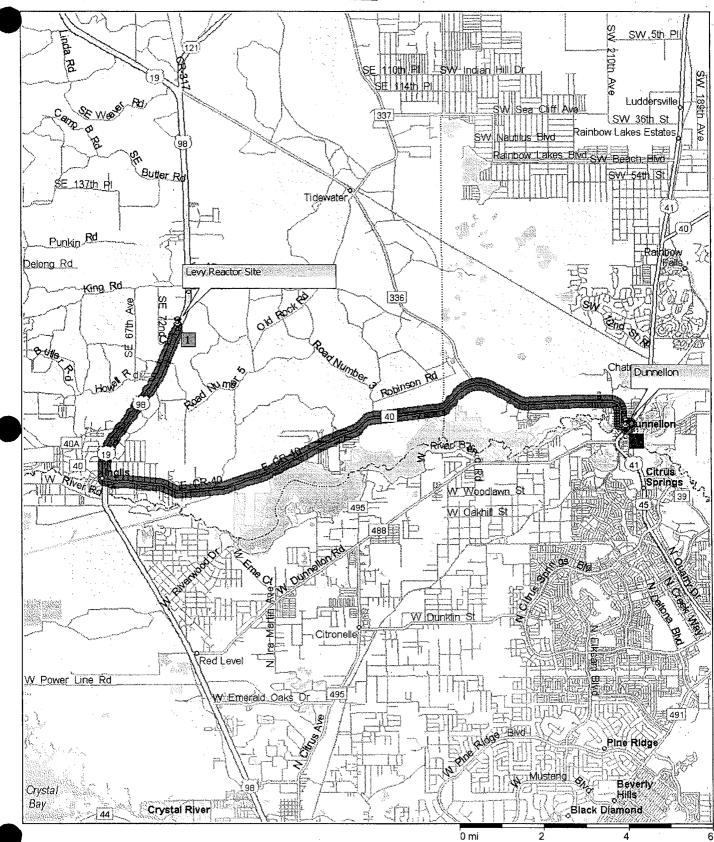
Levy Reactor Site to Belleview

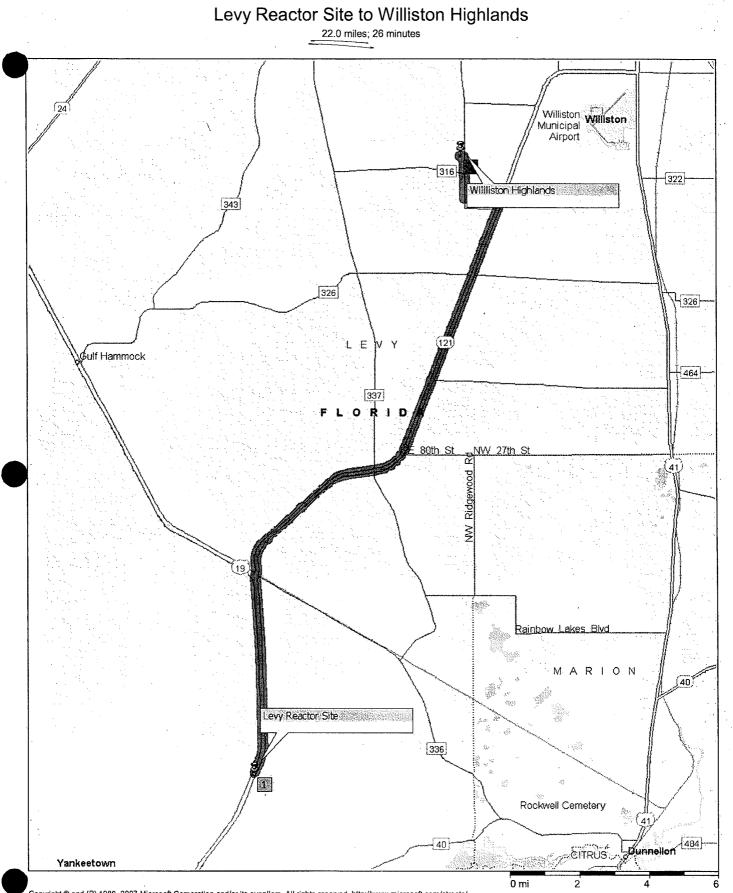
46.3 miles; 57 minutes

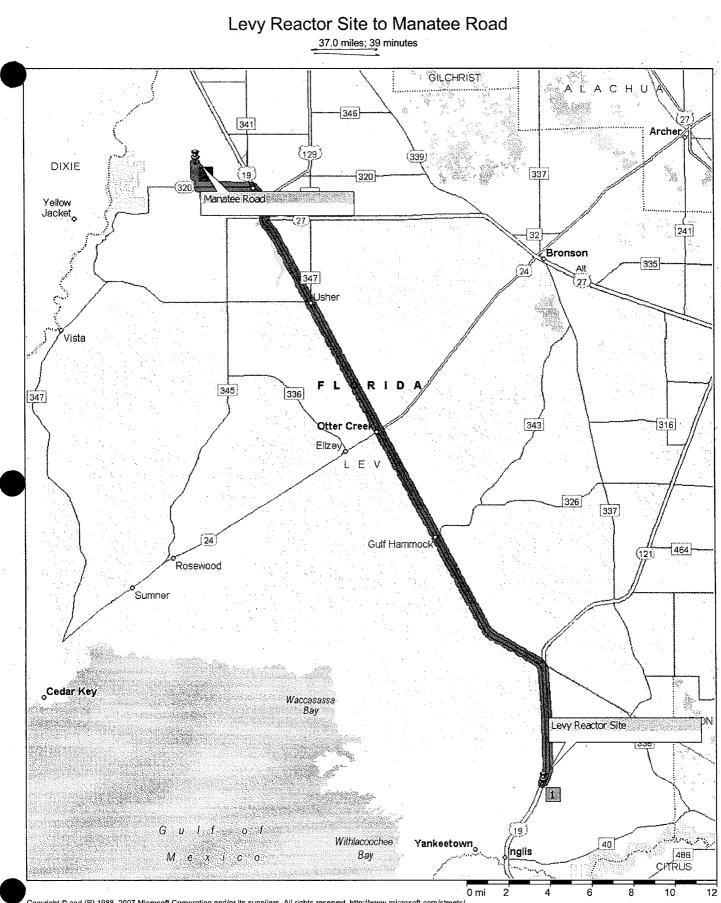


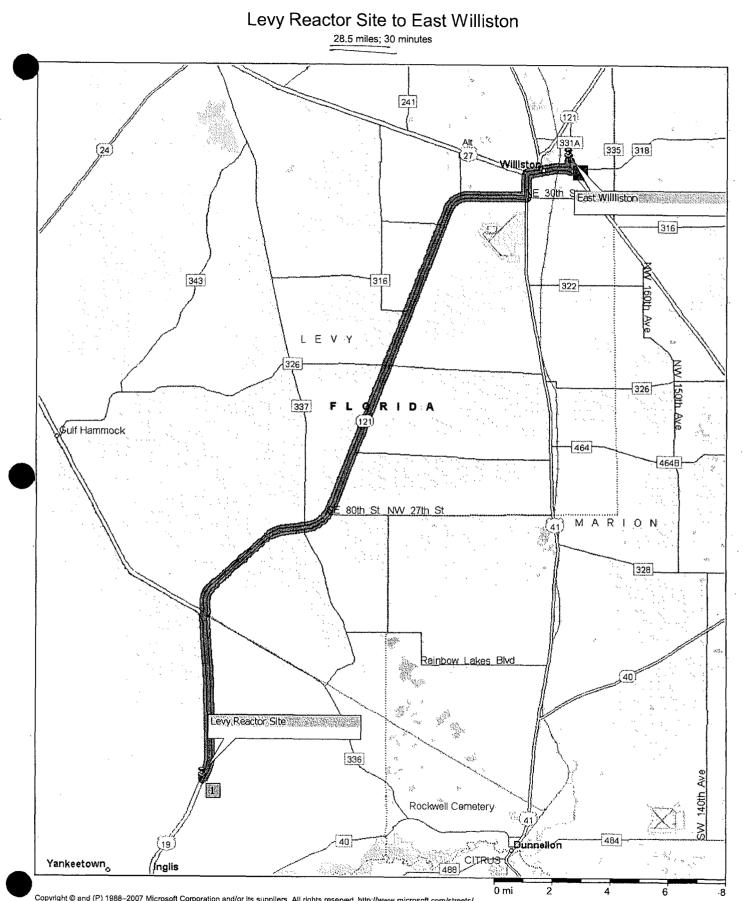
Levy Reactor Site to Dunnellon

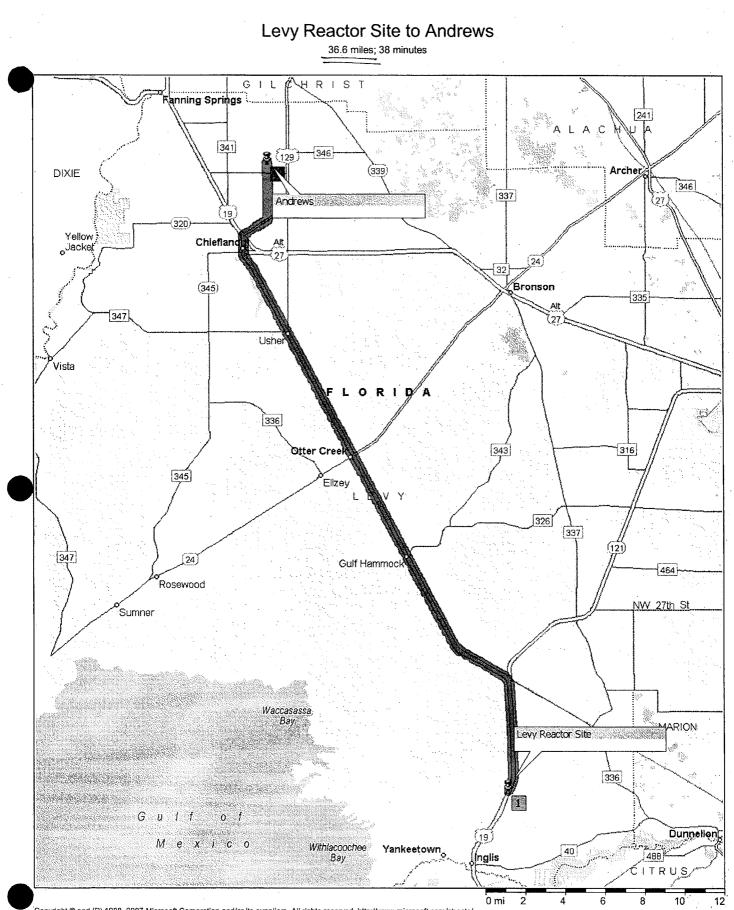
18.0 miles; 24 minutes

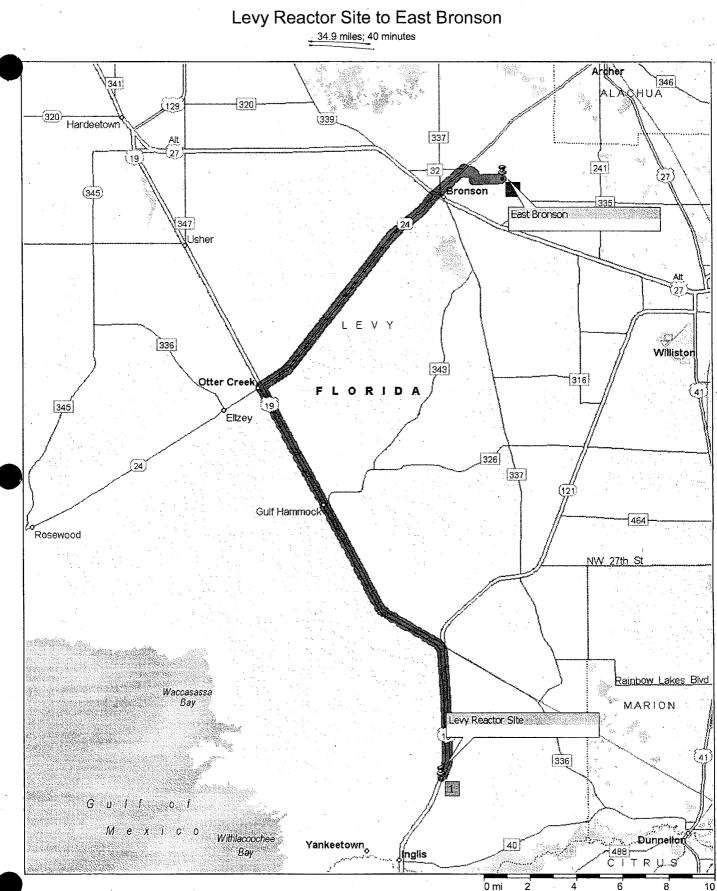






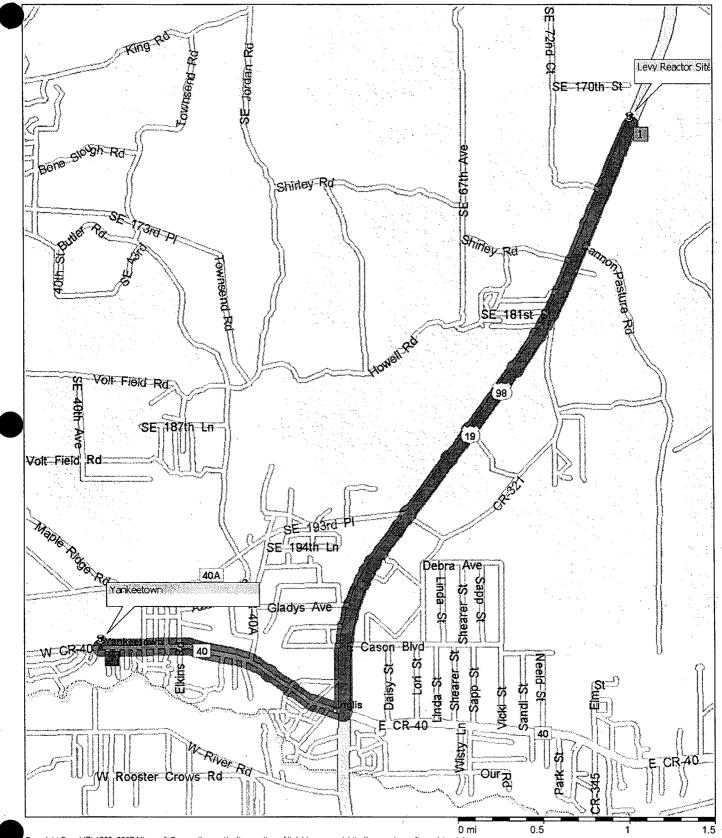


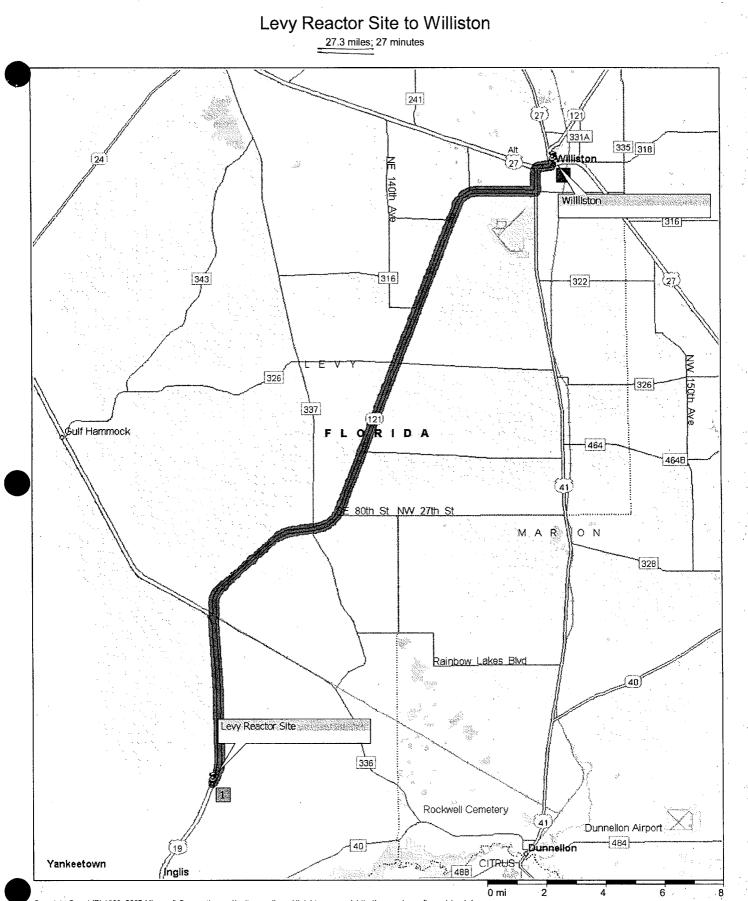


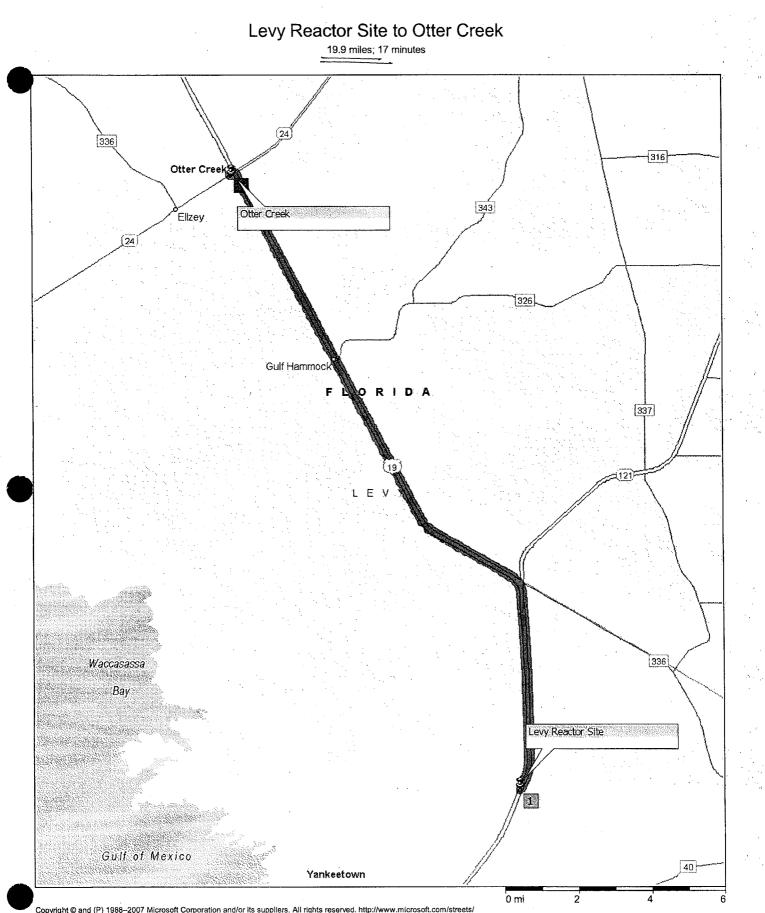


Levy Reactor Site to Yankeetown

5.6 miles; 6 minutes

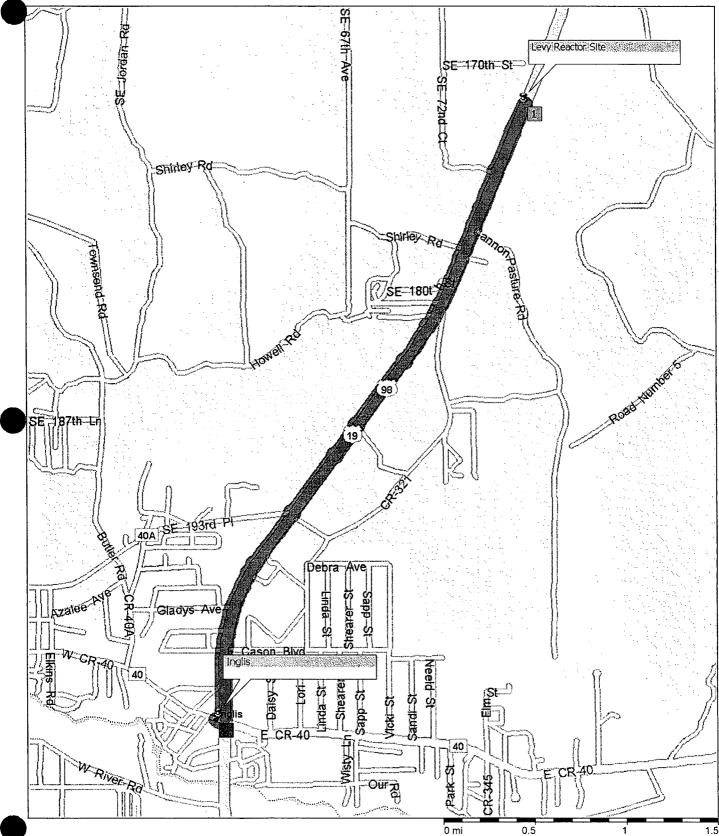






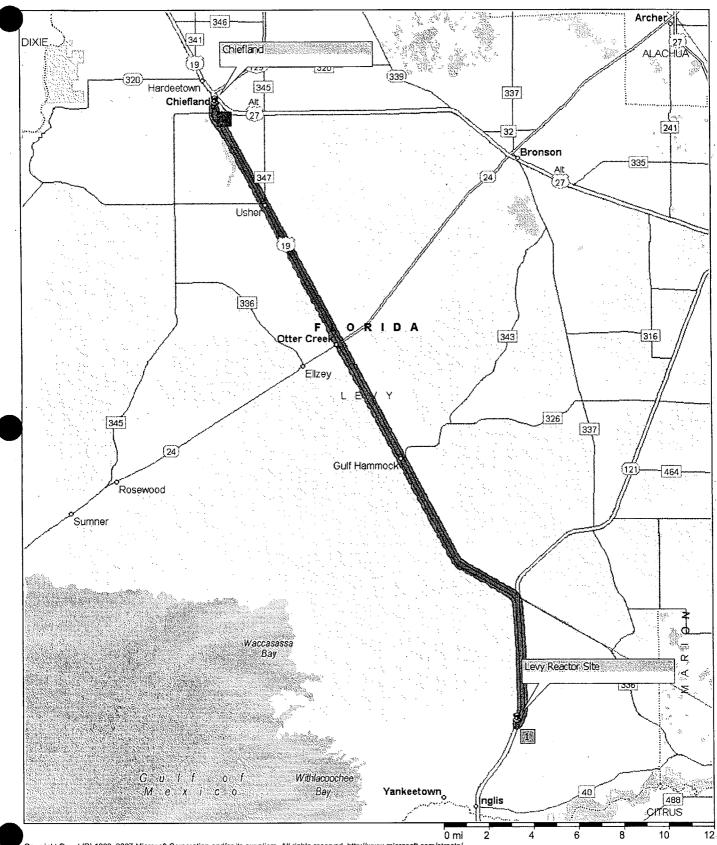
Levy Reactor Site to Inglis

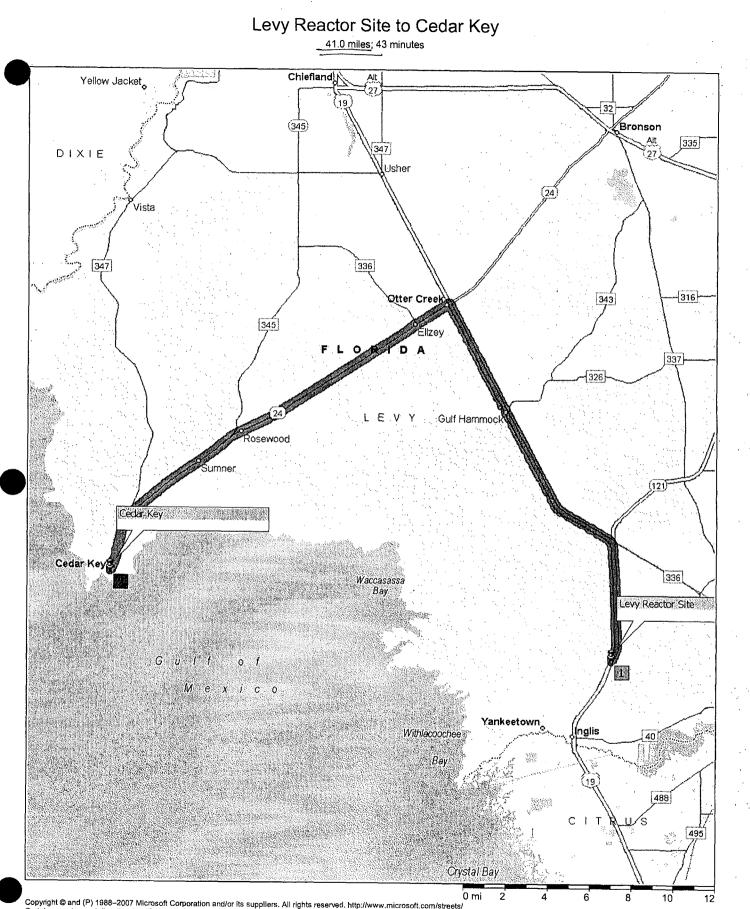
4.1 miles; 4 minutes

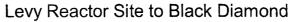


Levy Reactor Site to Chiefland

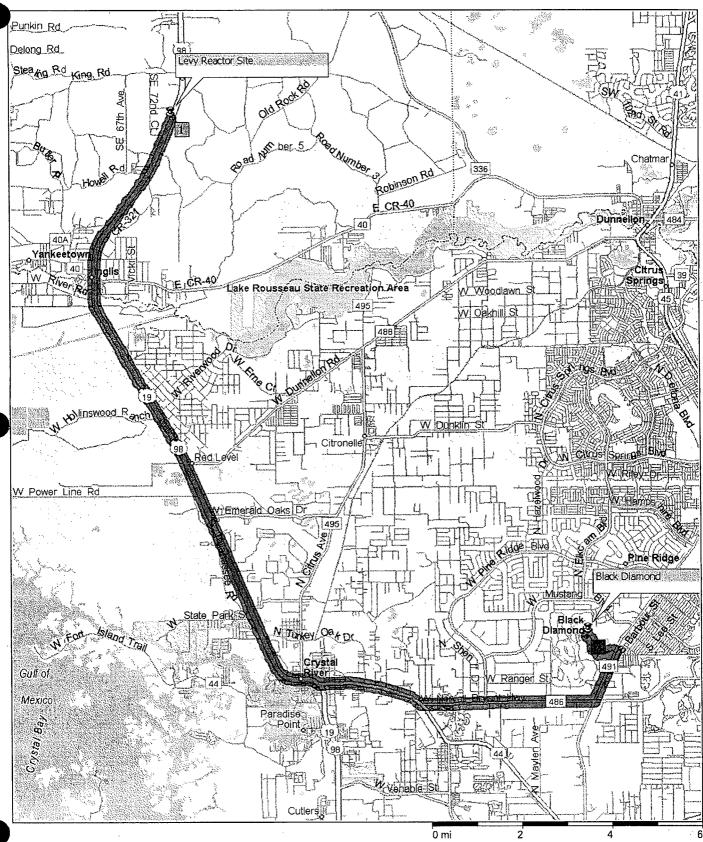
31.6 miles; 27 minutes





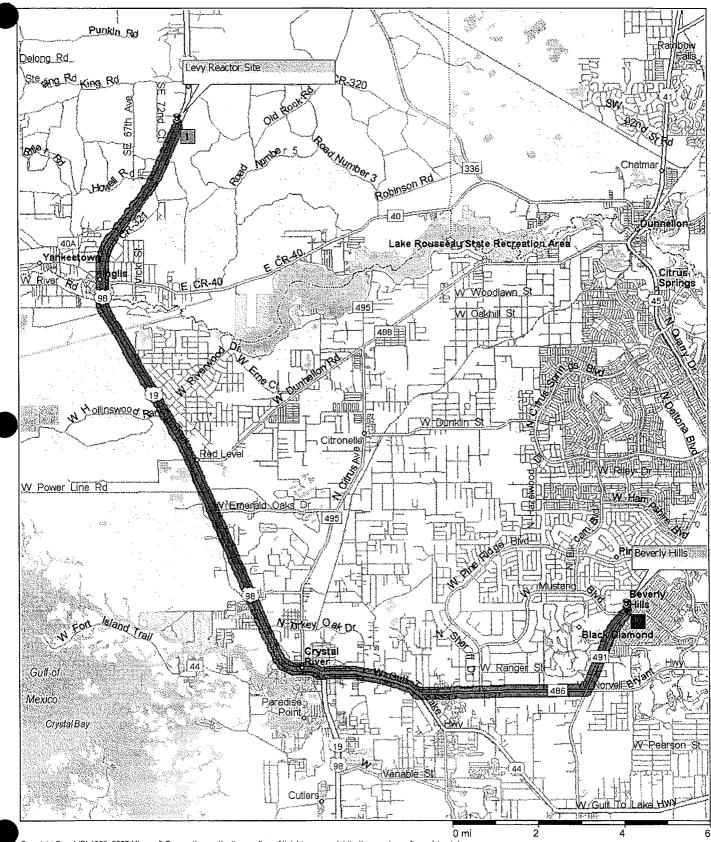


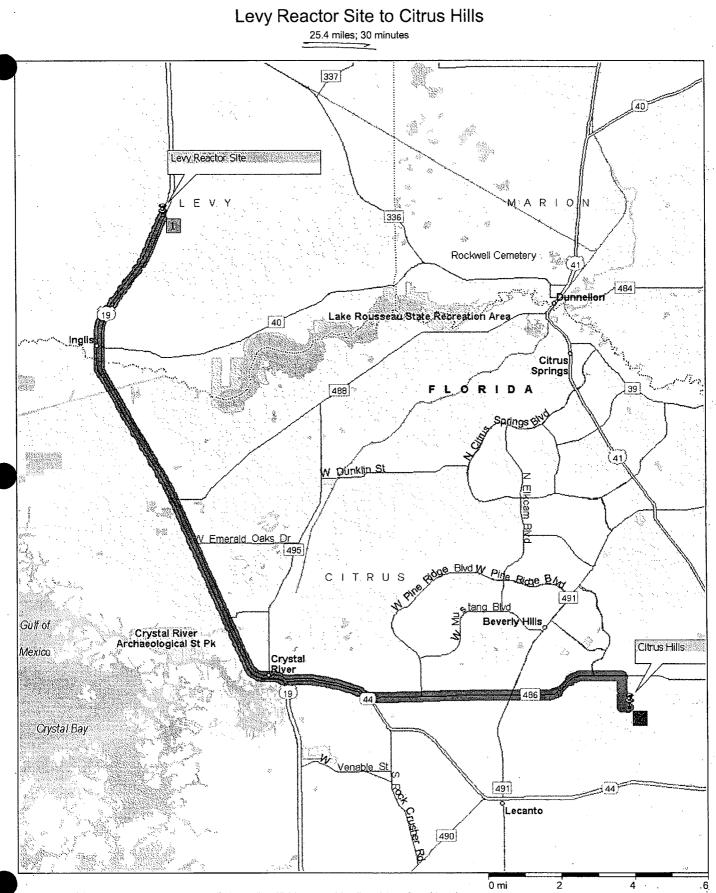
23.3 miles; 27 minutes



Levy Reactor Site to Beverly Hills

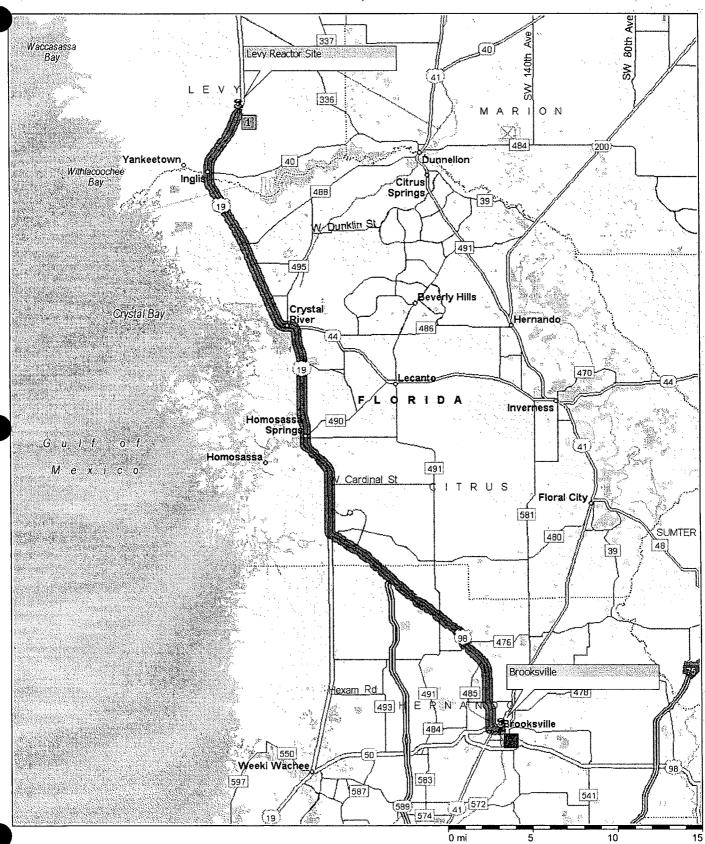
23.3 miles; 26 minutes

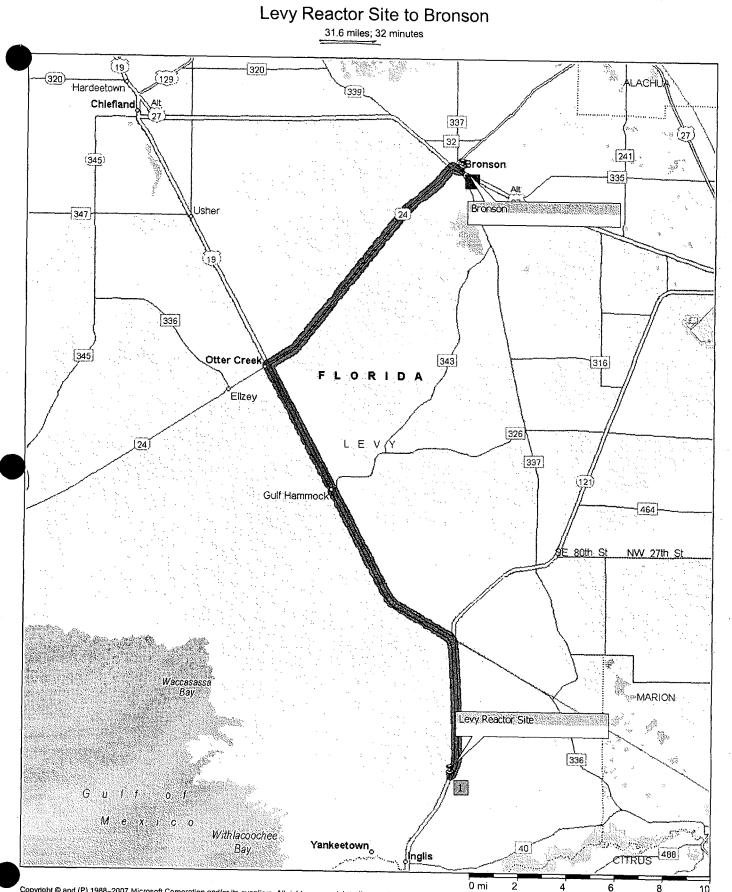




Levy Reactor Site to Brooksville

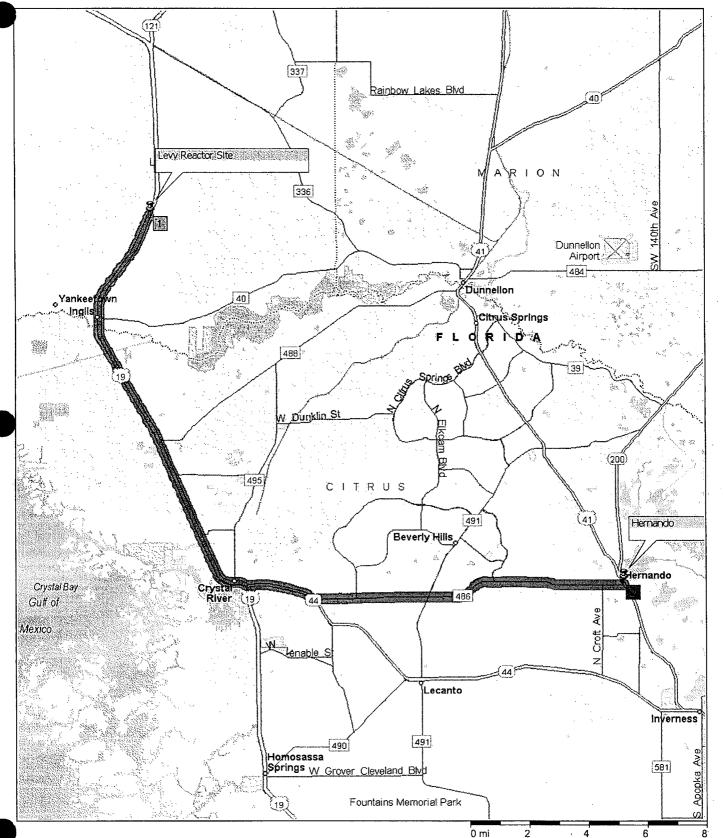
44.3 miles; 48 minutes





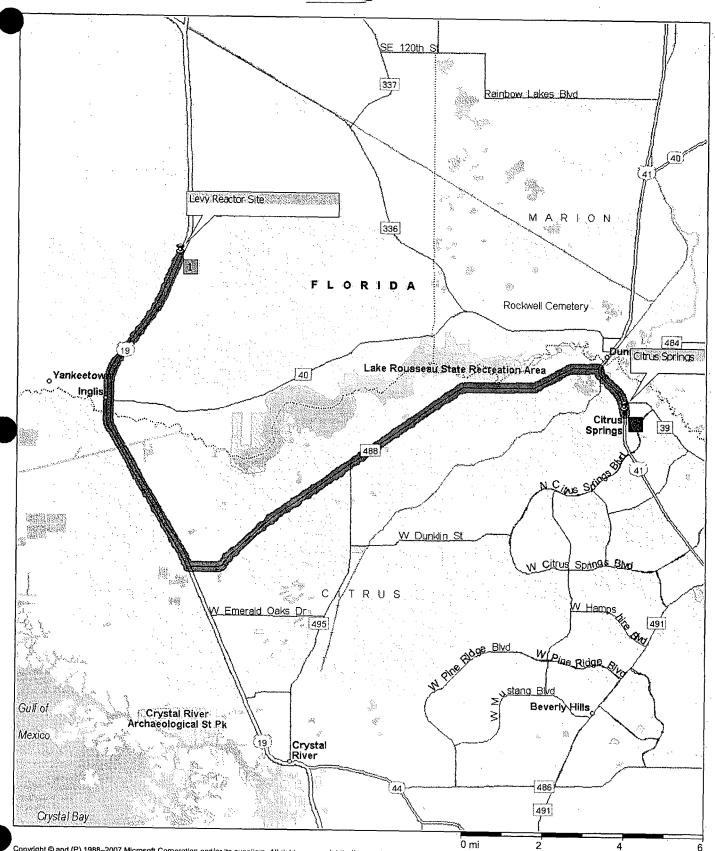
Levy Reactor Site to Hernando

28.2 miles; 32 minutes

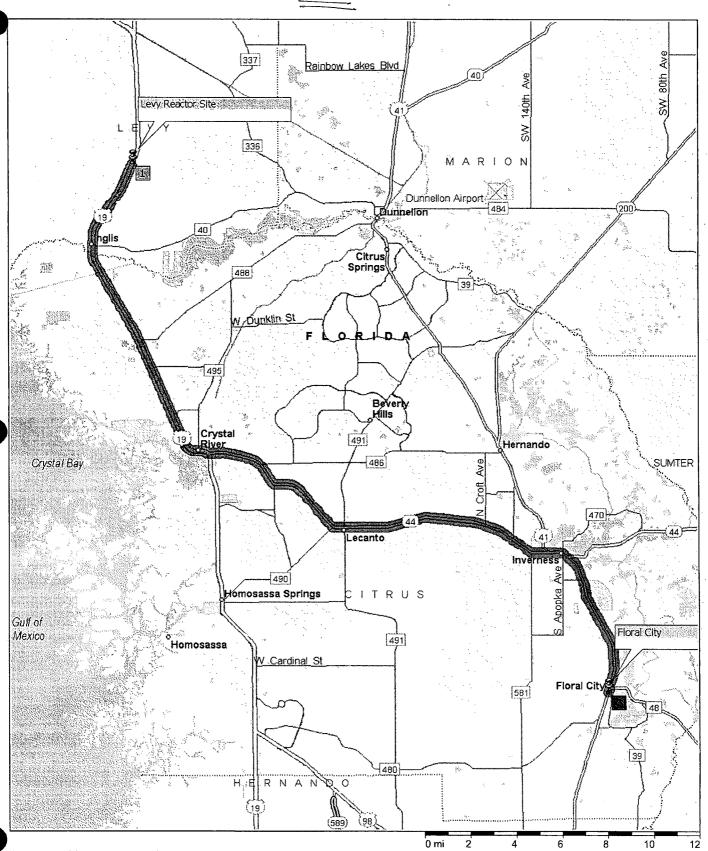


Levy Reactor Site to Citrus Springs

22.0 miles; 25 minutes

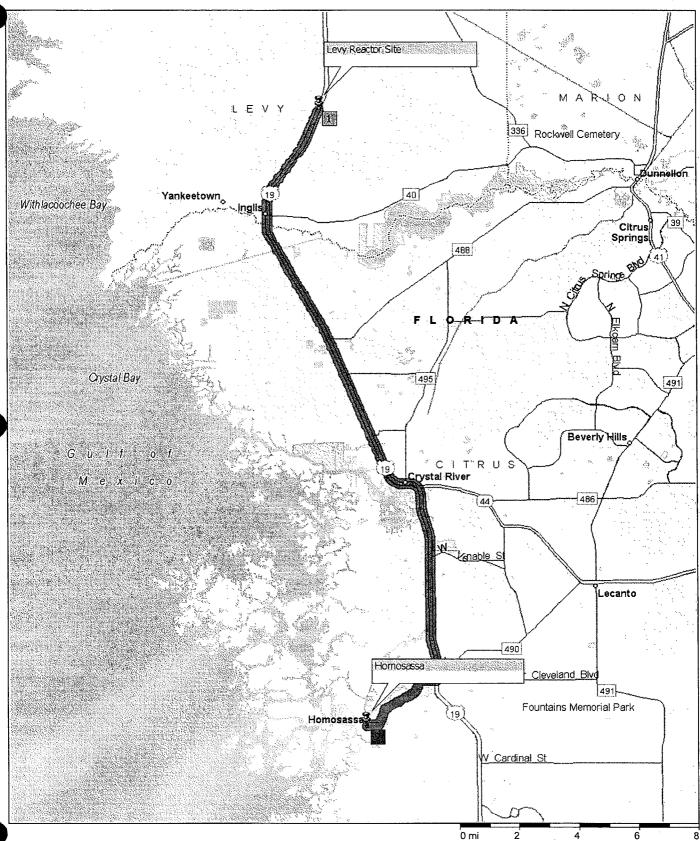


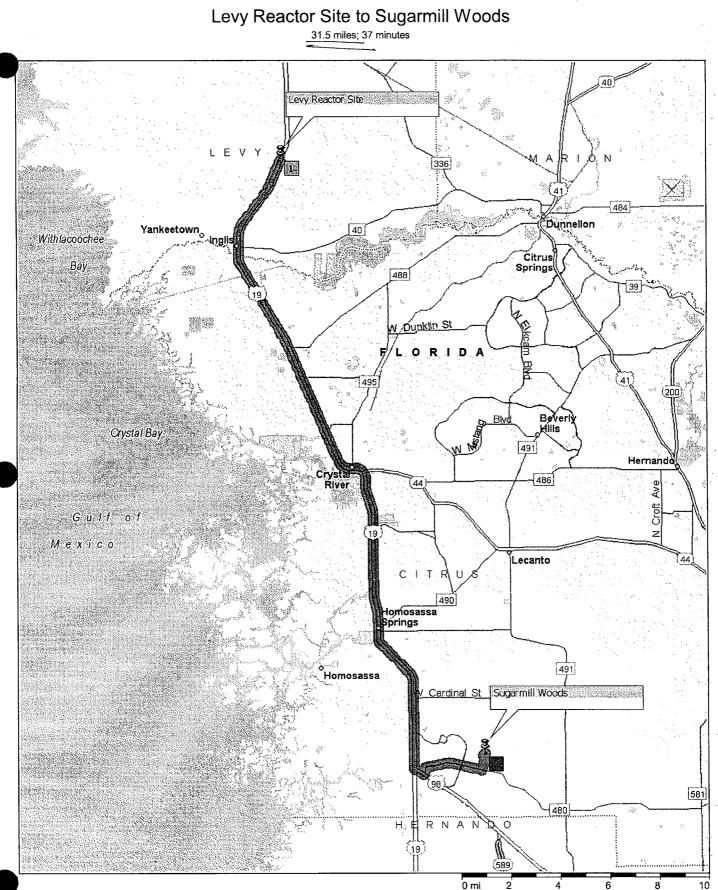
Levy Reactor Site to Floral City 38.9 miles; 44 minutes



Levy Reactor Site to Homosassa

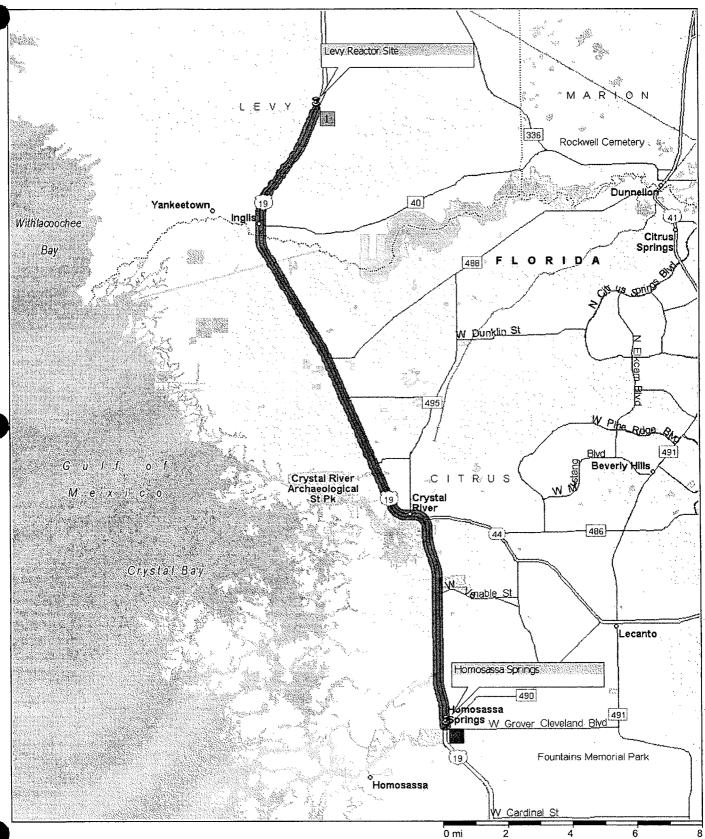
24.6 miles; 30 minutes

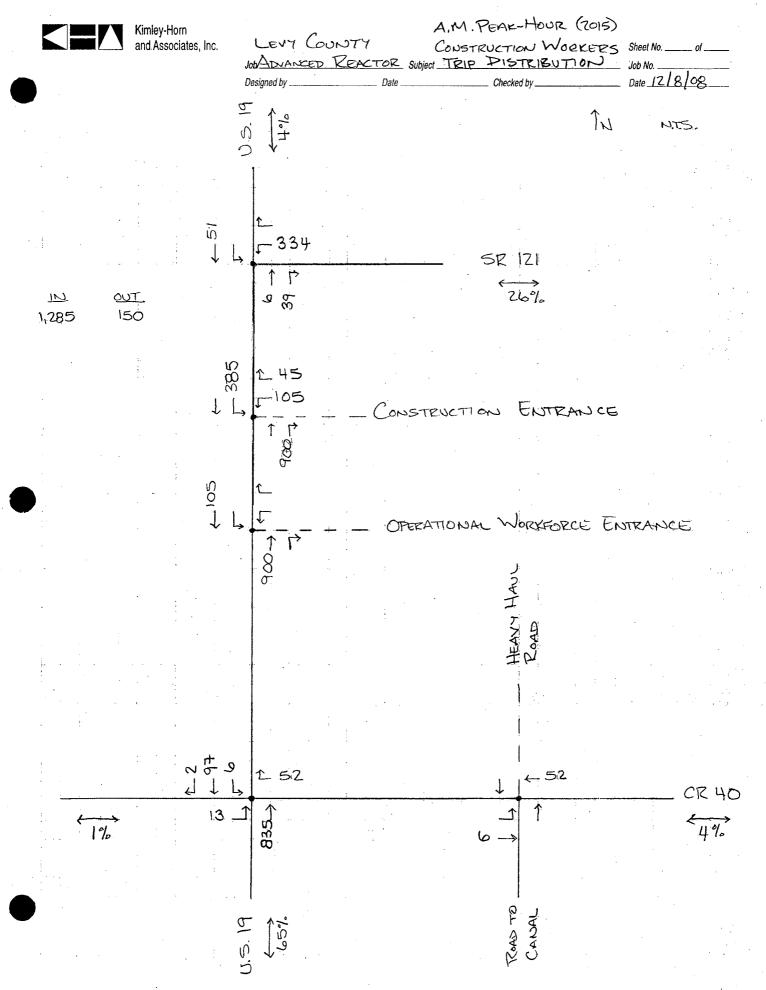


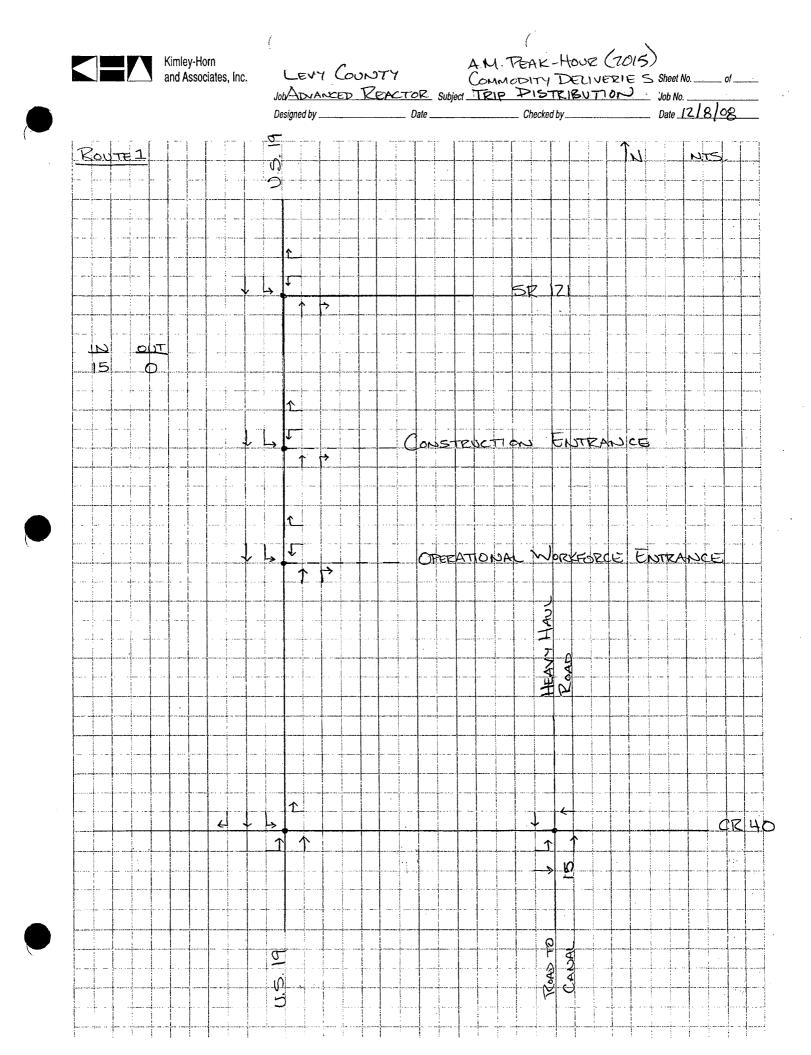


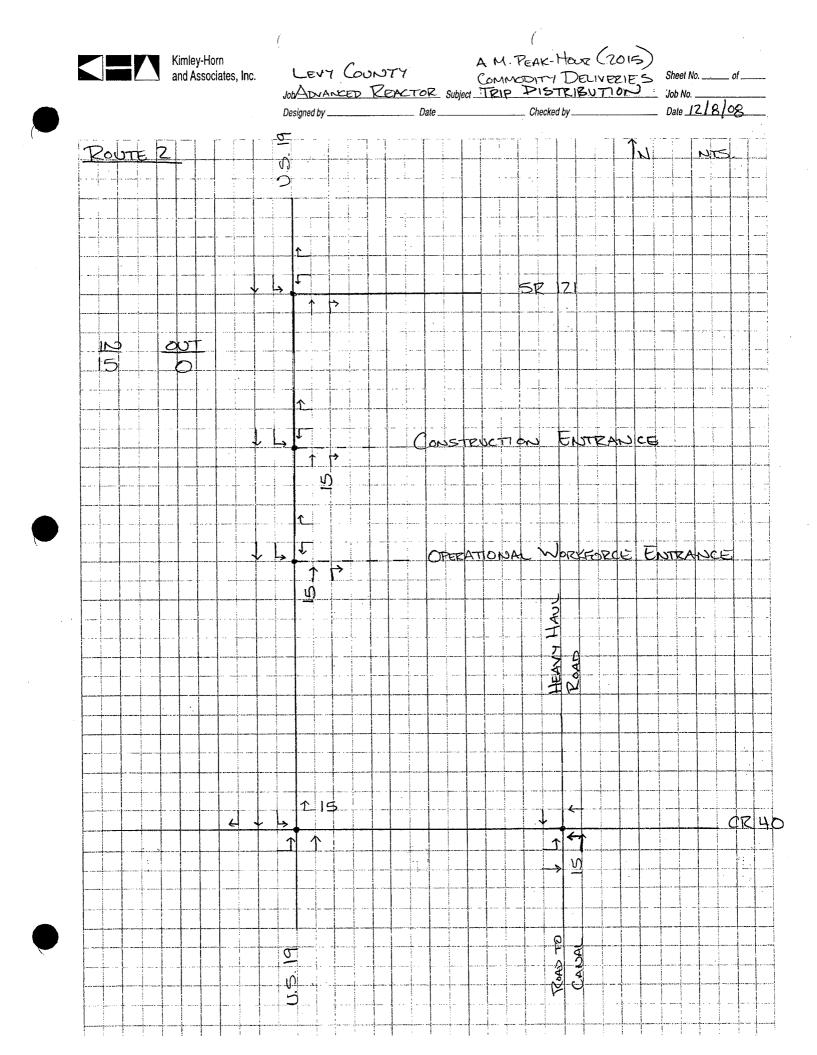
Levy Reactor Site to Homosassa Springs

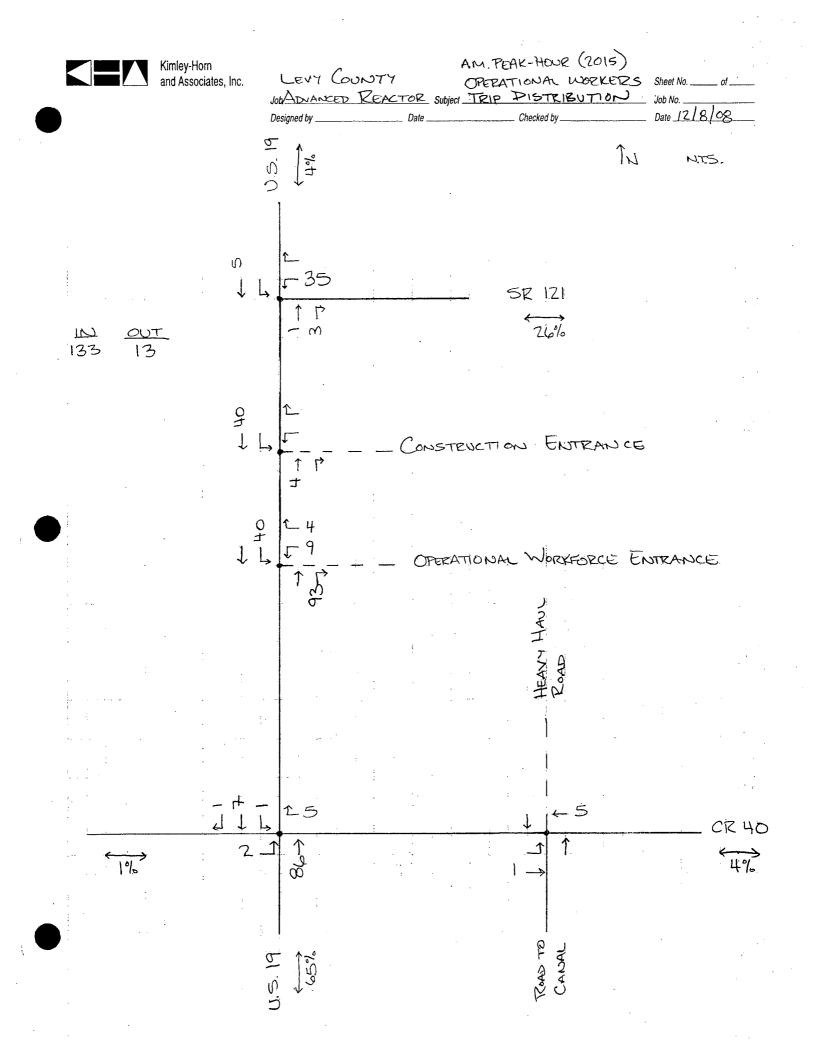
21.4 miles; 23 minutes

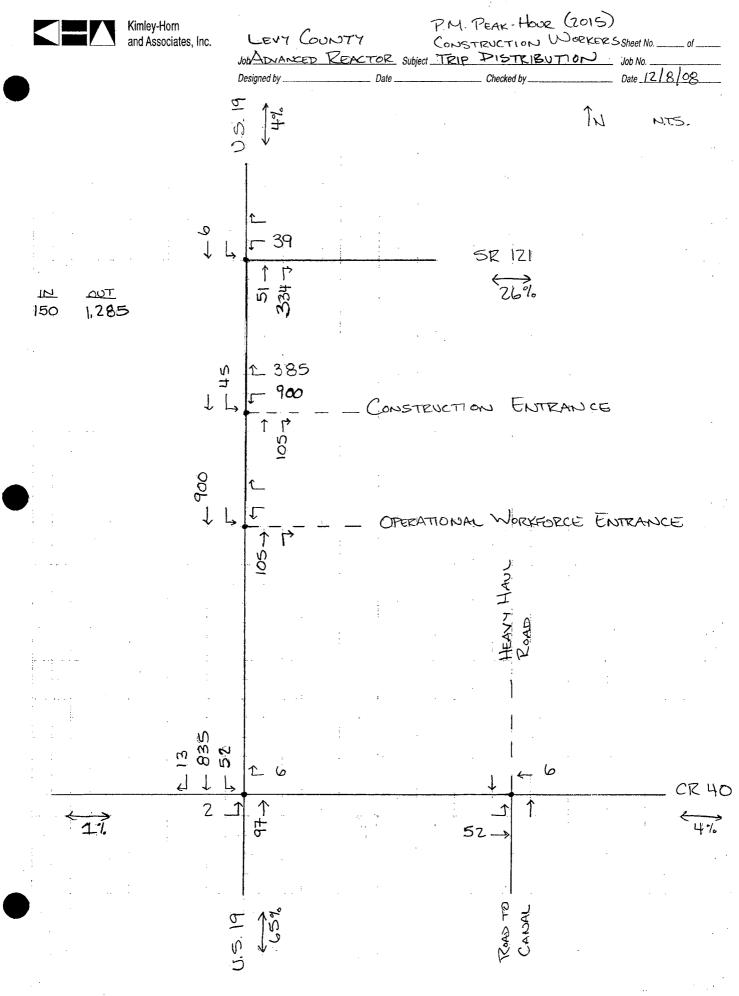


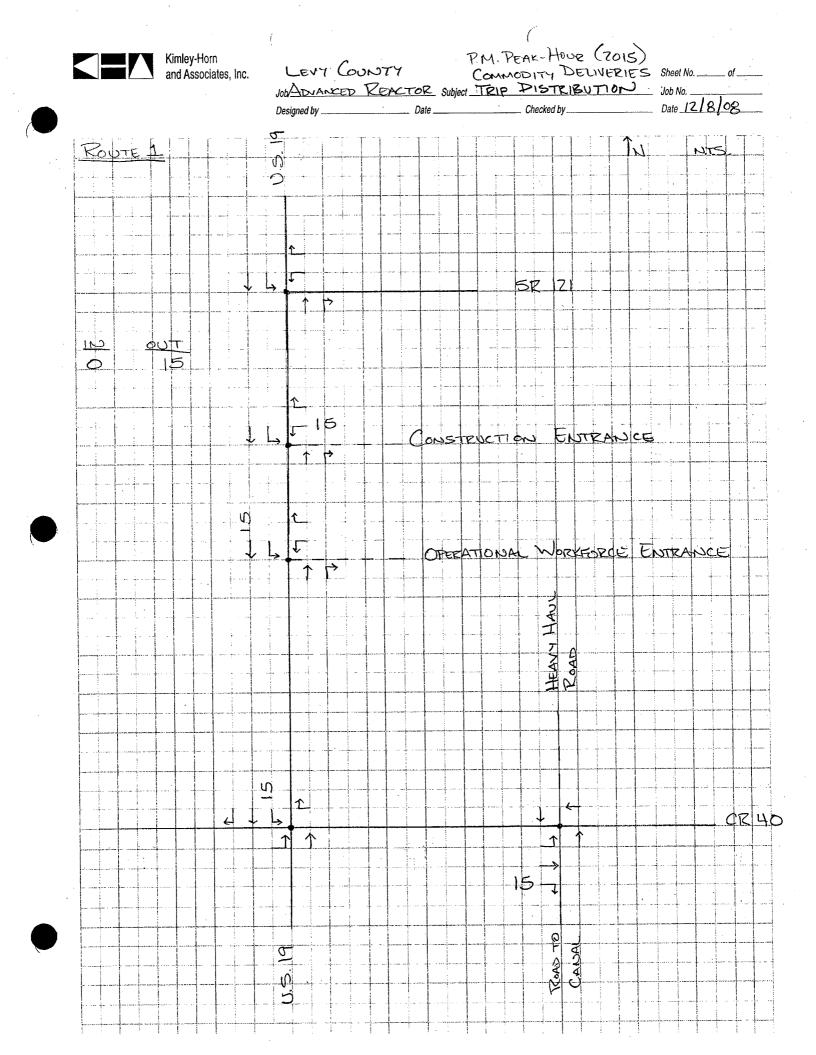


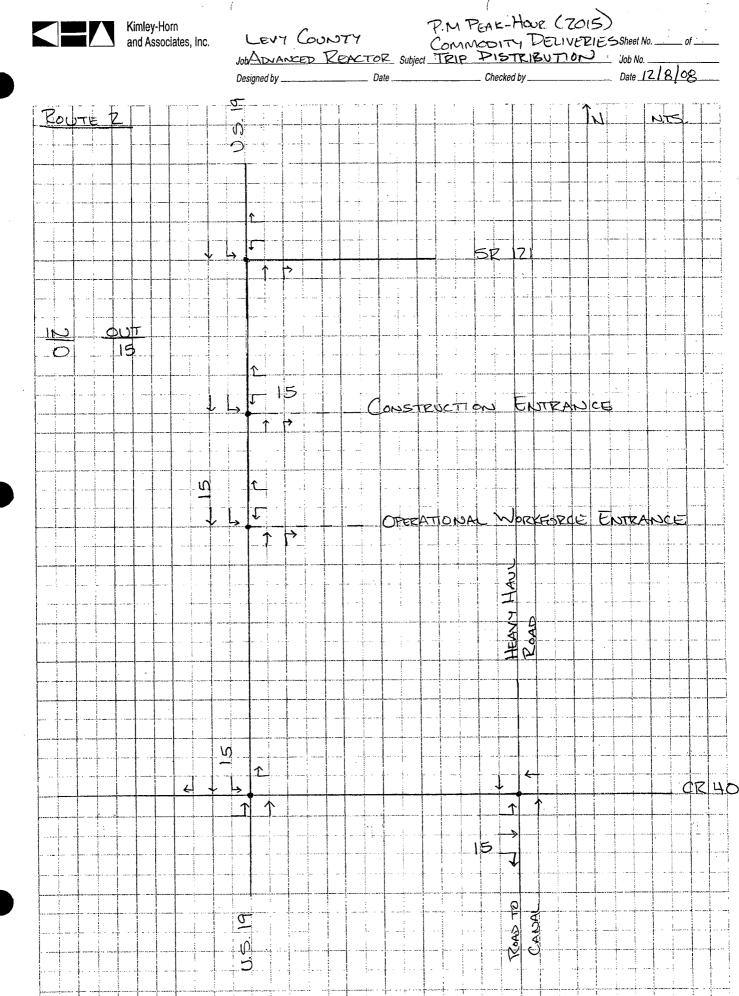


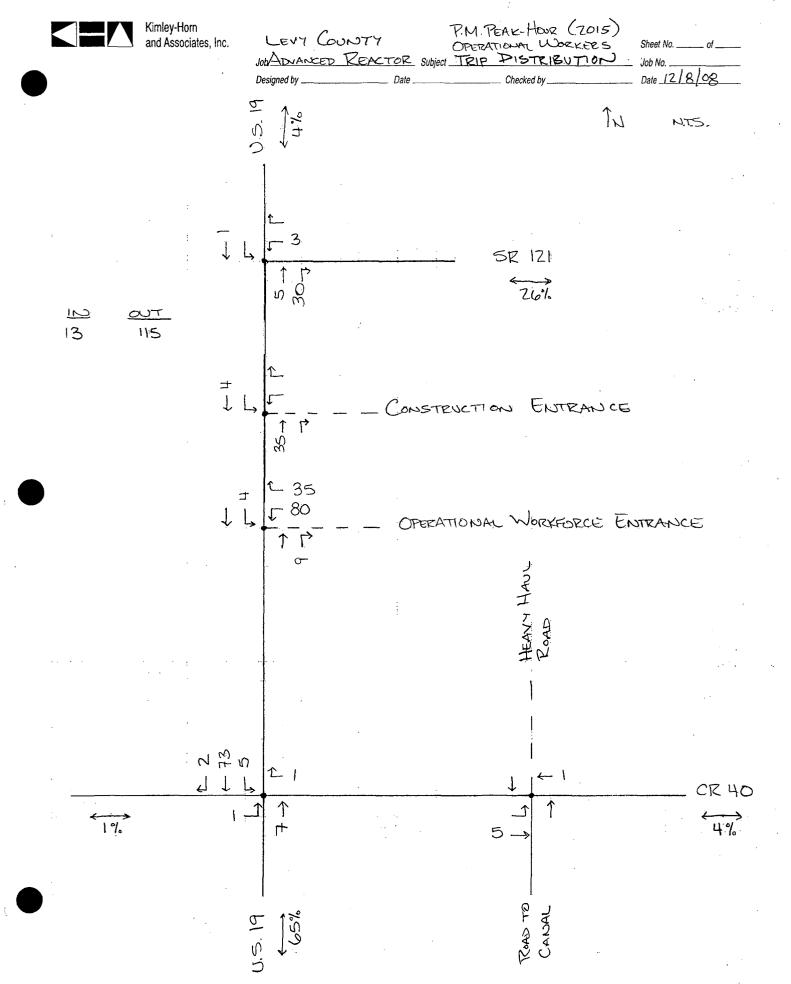


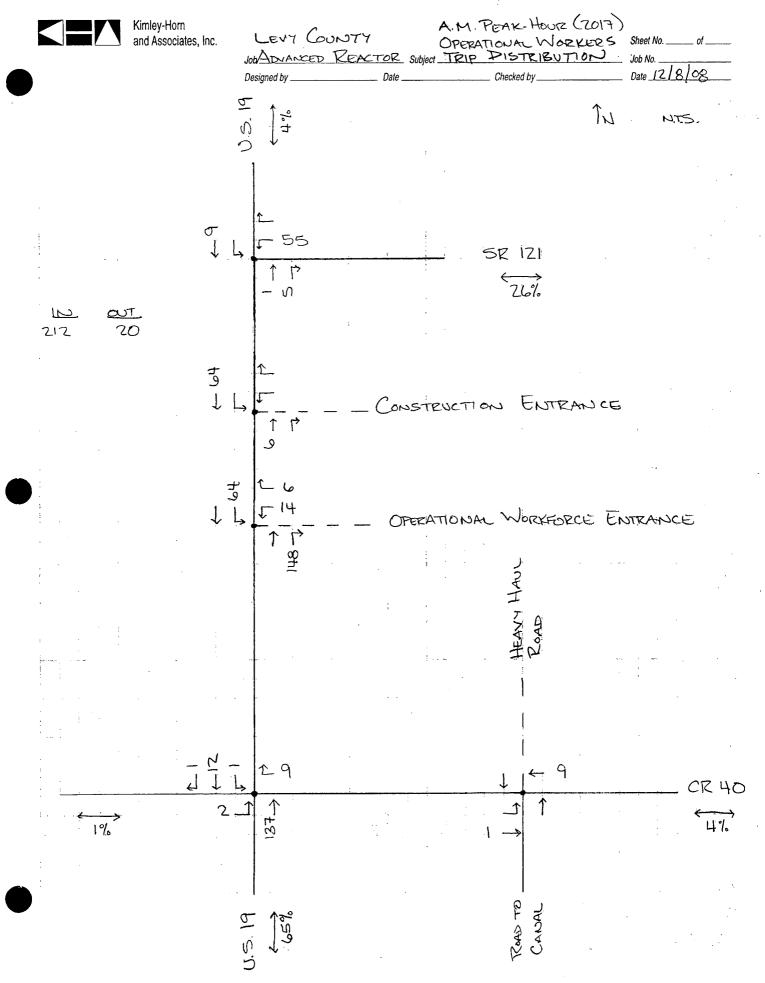


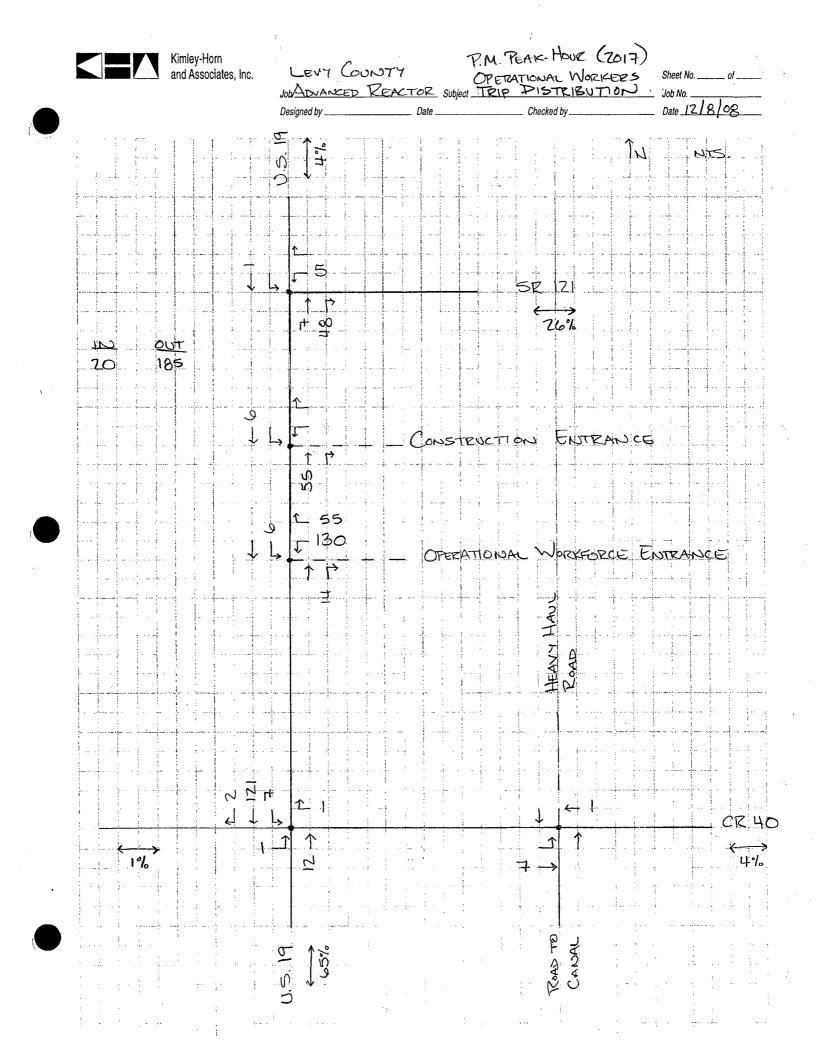












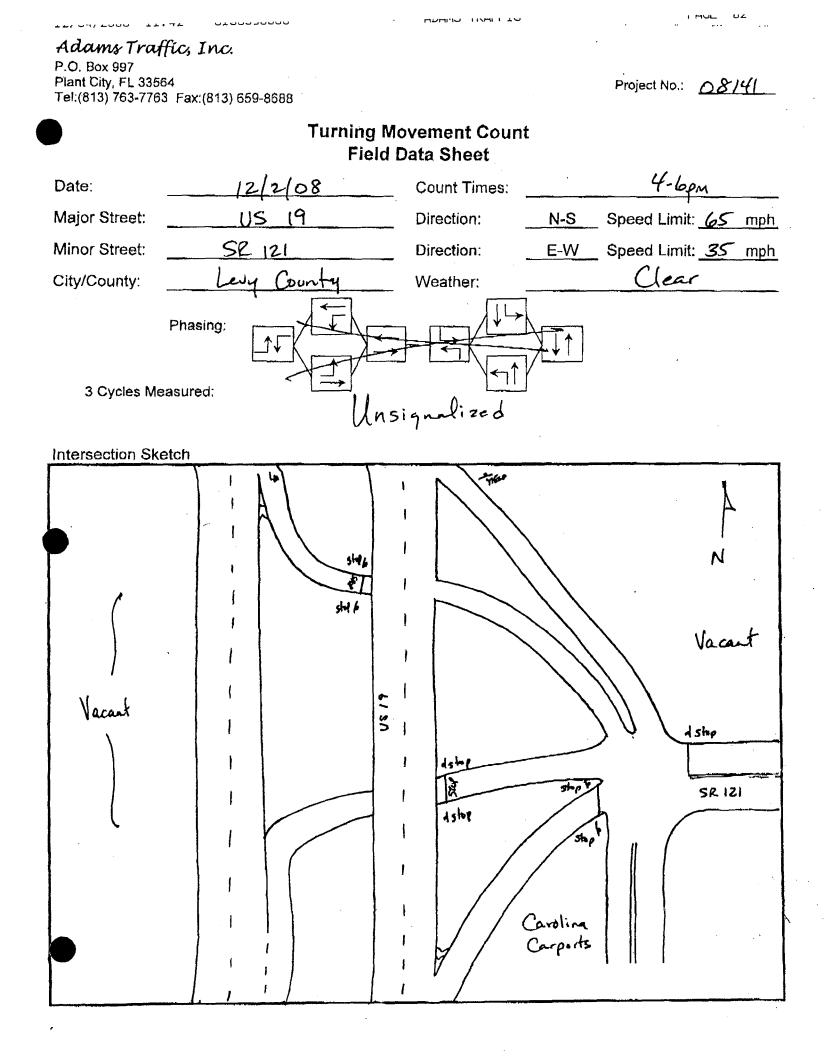


P.M. PEAK HOUR SIGNIFICANCE TEST

Scenario: Operational Workforce Traffic

		No. 2-Way	Service Volume	LOS	Project Traffic	Project	Significant
From	То	Lanes	Capacity	Std	Volume	Impact	(Yes/No)
CR 488	CR 40	4	2,800	B	133	4.75%	
CR 40	Project Site	4	2,800	В	144	5.14%	Yes
Project Site	SR 121	4	2,800	В	62	2.21%	
SR 121	CR 326	4	2,800	В	8	0.29%	
US 19	NW 27th Street	2	770	С	53	6.88%	Yes
NW 27th Street	US 41	2	770	С	9	1.17%	
CR 328	SE 80th Street/NW 27th Street	2	770	С	42	5.45%	Yes
SE 80th Street/NW 27th Street	SR 121	2	770	C	0	0.00%	
SR 121	S.C.L. of Williston	2	770	C	6	0.78%	[
S.C.L. of Williston	SR 500	2	1,070	C	6	0.56%	
SR 121	US 41	2	1,340	D	42	3.13%	
US 19	CR 336	2	770	С	8	1.04%	
CR 336	US 41	2	770	С	8	1.04%	
US 41	SR 40	2	1,340	D	42	3.13%	
	CR 40 Project Site SR 121 US 19 NW 27th Street CR 328 SE 80th Street/NW 27th Street SR 121 S.C.L. of Williston SR 121 US 19 CR 336	CR 488CR 40CR 40Project SiteProject SiteSR 121SR 121CR 326US 19NW 27th StreetNW 27th StreetUS 41CR 328SE 80th Street/NW 27th StreetSR 121SR 121SR 121S.C.L. of WillistonS.C.L. of WillistonSR 500SR 121US 41US 19CR 336US 19CR 336US 19CR 336US 41	From To Lanes CR 488 CR 40 4 CR 40 Project Site 4 Project Site SR 121 4 SR 121 CR 326 4 US 19 NW 27th Street 2 NW 27th Street US 41 2 CR 328 SE 80th Street/NW 27th Street 2 SR 121 SR 121 2 CR 328 SE 80th Street/NW 27th Street 2 SR 121 SR 121 2 SR 121 SR 500 2 SR 121 US 41 2 US 19 CR 336 2 US 19 CR 336 2 CR 336 US 41 2	From To 2-Way Lanes Volume Capacity CR 488 CR 40 4 2,800 CR 40 Project Site 4 2,800 Project Site SR 121 4 2,800 SR 121 CR 326 4 2,800 US 19 NW 27th Street 2 770 NW 27th Street US 41 2 770 CR 328 SE 80th Street/NW 27th Street 2 770 SR 121 SR 121 2 770 SR 121 SR 58 00h Street/NW 27th Street 2 770 SR 121 SR 500 2 1,070 SR 121 US 41 2 1,340 US 19 CR 336 US 41 2 770 SR 121 US 41 2 1,340 2	From To 2-Way Lanes Volume Capacity LOS Std CR 488 CR 40 4 2,800 B CR 40 Project Site 4 2,800 B Project Site SR 121 4 2,800 B SR 121 CR 326 4 2,800 B US 19 NW 27th Street 2 770 C NW 27th Street US 41 2 770 C CR 328 SE 80th Street/NW 27th Street 2 770 C SR 121 SR 121 SR 121 2 770 C SR 328 SE 80th Street/NW 27th Street 2 770 C SR 121 SC.L. of Williston 2 770 C SR 121 US 41 2 1,070 C SR 121 US 41 2 1,340 D US 19 CR 336 US 41 2 770 C CR 336 US 41 2 770 C	From To Lanes Z-Way Volume LOS Traffic CR 488 CR 40 4 2,800 B 133 CR 40 Project Site 4 2,800 B 144 Project Site SR 121 4 2,800 B 62 SR 121 CR 326 4 2,800 B 62 SR 121 CR 326 4 2,800 B 62 SR 121 CR 326 4 2,800 B 8 US 19 NW 27th Street 2 770 C 53 NW 27th Street US 41 2 770 C 9 CR 328 SE 80th Street/NW 27th Street SR 121 2 770 C 0 SR 121 S.C.L. of Williston 2 770 C 6 SR 121 US 41 2 1,070 C 6 SR 121 US 41 2 770 C 6 SR	From To Lanes Volume LOS Traffic Project CR 488 CR 40 4 2,800 B 133 4.75% CR 40 Project Site 4 2,800 B 144 5.14% Project Site SR 121 4 2,800 B 62 2.21% SR 121 CR 326 4 2,800 B 62 2.21% US 19 NW 27th Street 2 770 C 53 6.88% NW 27th Street US 41 2 770 C 9 1.17% CR 328 SE 80th Street/NW 27th Street SR 121 2 770 C 42 5.45% SE 80th Street/NW 27th Street SR 121 2 770 C 6 0.78% S.C.L. of Williston SR 500 2 1,070 C 6 0.56% SR 121 US 41 2 1,340 D 42 3.13% US 19 CR 336

APPENDIX B: Existing Traffic Count Data





Comments:

City/County: Levy County Weather: Clear

Kimley-Horn and Associates, Inc. 10117 Princess Palm Ave, Suite 300 Tampa, FL 33610 813-620-1460

File Name : US19SR~1 Site Code : 0000000 Start Date : 12/2/2008 Page No : 1

			·	Groups Print	ted-Passeng			icles - U-Turns					
		SR 1	21			US	19			US	19		
		Westbo	ound	(Northb	ound			Southb	ound	1	
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	12	0	2	14	0	25	3	28	3	26	0	29	71
04:15 PM	17	0	1	18	0	23	12	35	6	44	0	50	103
04:30 PM	12	0	2	14	0	19	6	25	3	22	0	25	64
04:45 PM	16	0	1	17	0	19	12	31	4	36	0	4Ó	88
Total	57	0	6	63	0	86	33	119	16	128	0	144	326
05:00 PM	17	0	3	20	0	17	11	28	4	26	0	30	78
05:15 PM	14	0	2	16	0	25	10	35	4	33	0	37	88
05:30 PM	15	0	1	16	0	34	8	42	4	26	0	30	88
05:45 PM	8	0	0	8	0	28	14	42	4	24	0	28	78
Total	54	0	6	60	0	104	43	147	16	109	Ő	125	332
Grand Total Apprch %	111 90.2	0 0.0	12 9.8	123	0 0.0	190 71.4	76 28.6	266	32 11.9	237 88.1	0 0.0	269	658
Total %	16.9	0.0	1.8	18.7	0.0	28.9	11.6	40.4	4.9	36.0	0.0	40.9	

		SR 1 Westbo			4	US 1 Northbo				US 1 Southb			
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 04:00 PM to 0	05:45 PM - Peak 1 (of 1											
Intersection	04:45 PM												
Volume	62	0	7	69	0	95	41	136	16	121	0	137	342
Percent	89.9	0.0	10.1		0.0	69.9	30.1		11.7	88.3	0.0		
05:30 Volume	15	0	1	16	0	34	8	42	4	26	0	30	88
Peak Factor				Í								1	0.972
High Int.	05:00 PM				05:30 PM				04:45 PM				
Volume	17	0	3	20	0	34	8	42	4	36	0	40	
Peak Factor				0.863				0.810				0.856	

Kimley-Horn and Associates, Inc. 10117 Princess Palm Ave, Suite 300 Tampa, FL 33610 813-620-1460

City/County: Levy County Weather: Clear Comments:

File Name : US19SR~1 Site Code : 00000000 Start Date : 12/2/2008 Page No : 1

						Groups F	Printed-Hear	vy Vehicles						
			SR 12	21			US	19			US 1	9		
			Westbo	und			Northb	ound			Southb	ound		
	Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
<u> </u>	04:00 PM	1	0	0	1	0	2	0	2	0	· · 1	0	1	4
	04:15 PM	2	0	0	2	0	0	1	1	0	4	0	4	7
	04:30 PM	0	0	0	0	0	1	2	3	0	1	0	1	4
	04:45 PM	0	0	0	0	0	0	1	1	0	1	0	1	2
	Total	3	0	0	3	0	3	4	7	0	7	0	7	17
	05:00 PM	1	0	0	1	0	0	2	2	0	1	0	1	4
	05:15 PM	0	0	0	0	0	1	0	1	0	3	0	3	4
	05:30 PM	0	0	0	0	0	0	0	0	0	2	0	2	2
	05:45 PM	0	0	0	0	0	2	0	2	0	5	0	5	7
	Total	1	0	0	1	0	3	2	5	Ö	11	0	11	17
	Grand Total Apprch %	4 100.0	0 0.0	0 0.0	4	0 0.0	6 50.0	6 50.0	12	0 0.0	18 100.0	0 0.0	18	34
	Total %	11.8	0.0	0.0	11.8	0.0	17.6	17.6	35.3	0.0	52.9	0.0	52.9	

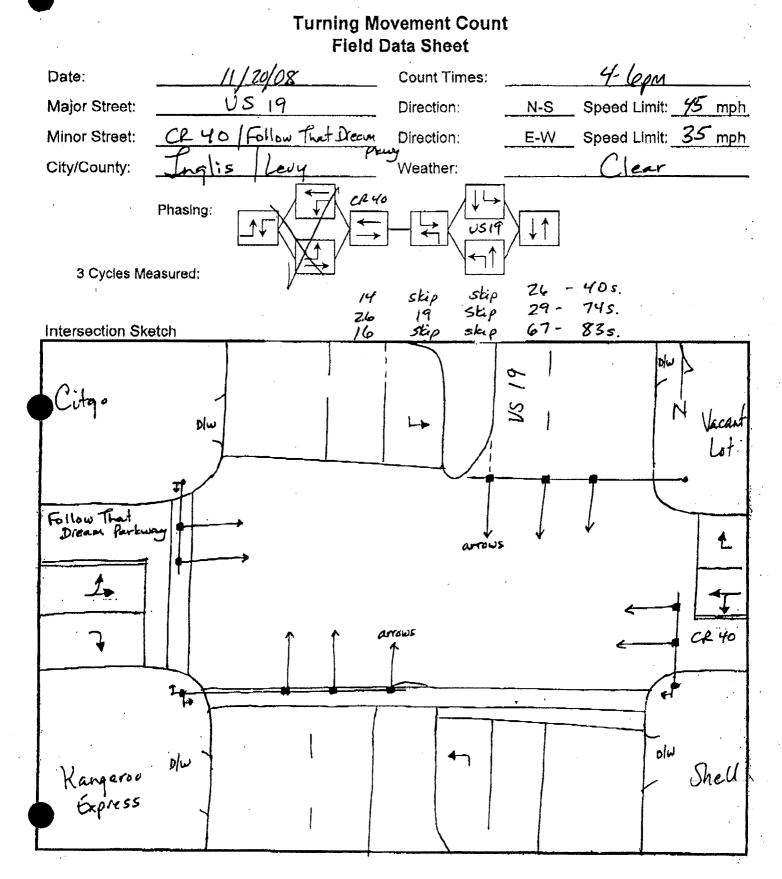
		SR 12 Westbo				US ⁻ Northb				US 1 Southbe			
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 04:00 PM to 0	05:45 PM - Peak 1 o	f1											
Intersection	04:00 PM												
Volume	3	0	0	3	0	3	4	7	0	7	0	7	17
Percent	100.0	0.0	0.0		0.0	42.9	57.1		0.0	100.0	0.0		
04:15 Volume	2	0	0	2	0	0	1	1	0	4	0	4	7
Peak Factor												1	0.607
High Int.	04:15 PM				04:30 PM				04:15 PM			l l	
Volume	2	0	0	2	0	1	2	3	0	4	0	4	
Peak Factor				0.375				0.583				0.438	

HV %

 $N|S; (11) \rightarrow 4\%$ $E/w; (1) \rightarrow 1\%$

Adams Traffic, Inc. P.O. Box 997 Plant City, FL 33564 el:(813) 763-7763 Fax:(813) 659-8688

Project No.: 08/4/





Kimley-Horn and Associates, Inc. 10117 Princess Palm Ave, Suite 300 Tampa, FL 33610 813-620-1460

City/County: Inglis/Levy Weather: Clear Comments:

File Name	: US19&C~1
Site Code	: 00000000
Start Date	: 11/20/2008
Page No	: 1

																				,	•••	
								Groups I	Printed-	Passeng	ger Vehicle	es - Heav	y Vehicle	es - U-Ti	urns				-			
Г		FOLL	OW THA	T DRE	AM PARK	WAY			CR 40					US 19		1			US 19			
			E	astbour	nd	· · ·		W	/estbou	nd			N	orthbou	nd			S	outhbou	nd		
	Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
L.,	04:00 PM	2	13	13	7	35	7	16	2	4	29	19	54	11	4	88	12	45	2	2	61	213
	04:15 PM	3	12	8	4	27	15	13	8	4	40	19	49	7	4	79	8	56	3	3	70	216
	04:30 PM	3	18	13	1	35	12	15	4	4	35	22	59	11	5	97	9	48	1	ō	58	225
	04:45 PM	3	14	12	7	36	14	10	4	6	34	13	52	11	8	84	9	45	1	1	56	210
_	Total	11	57	46	19	133	48	54	18	18	138	73	214	40	21	348	38	194	7	6	245	864
																1	• -			-		
	05:00 PM	6	14	10	5	35	16	9	10	6	41	22	43	13	7	85	11	55	1	1	68]	229
	05:15 PM	7	9	9	5	30	15	11	4	2	32	37	61	13	11	122	13	52	1	2	68	252
	05:30 PM	4	20	11	7	42	12	19	4	5	40	27	65	15	7	114	9	42	4	1	56	252
	05:45 PM	4	10	3	7	24	12	9	5	9	35	26	52	8	2	88	10	41	1	Ó	52	199
_	Total	21	53	33	24	131	55	48	23	22	148	112	221	49	27	409	43	190	7	4	244	932
				•••																•		
	Grand Total	32	110	79	43	264	103	102	41	40	286	185	435	89	48	757	81	384	14	10	489	1796
	Apprch %	12.1	41.7	29.9	16.3		36.0	35.7	14.3	14.0		24.4	57.5	11.8	6.3		16.6	78.5	2.9	2.0		
	Total %	1.8	6.1	4.4	2.4	14.7	5.7	5.7	2.3	2.2	15.9	10.3	24.2	5.0	2.7	42.1	4.5	21.4	0.8	0.6	27.2	
															=			=				

	FOLLO	DW TH	AT DRE	AM PAR	KWAY			CR 40			1	-	US 19			[US 19			
	1	I	Eastbour	nd			N	/estbour	nd		1	N	orthbour	nd			S	outhbou	nd	[
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 04:	00 PM to 05	:45 PM •	Peak 1 of	1																	
Intersection	04:45 PN	1																		1	
Volume	20	57	42	24	143	57	49	22	19	147	99	221	52	33	405	42	194	7	5	248	943
Percent	14.0	39.9	29.4	16.8		38.8	33.3	15.0	12.9		24.4	54.6	12.8	8.1		16.9	78.2	2.8	2.0		
05:30 Volume	4	20	11	7	42	12	19	4	5	40	27	65	15	7	114	9	42	4	1	56	252
Peak Factor																					0.936
High Int.	05:30 PM	1				05:00 PI	N				05:15 PI	N				05:00 PN	1				
Volume	4	20	11	7	42	16	9	10	6	41	37	61	13	11	122	11	55	1	1	68	
Peak Factor					0.851					0.896					0.830					0.912	

Kimley-Horn and Associates, Inc. 10117 Princess Palm Ave, Suite 300 Tampa, FL 33610 813-620-1460

City/County: Inglis/Levy Weather: Clear Comments:

File Name : US19&C~1 Site Code : 00000000 Start Date : 11/20/2008 Page No : 1

_										Groups P	rinted- Hea	avy Veh	icles									
		FOLLO	OW THA	T DREA	M PARK	NAY			CR 40					US 19					US 19			
			E	astboun				N	/estbour	nd			N	orthbour				Se	outhbour	าd		
	Start Time	Left	Thru	Right	RTOR A	pp. Total	Left	Thru	Right	RTOR A	pp. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR A	op. Total	Int. Total
•	04:00 PM	0	0	0	. 0	0	0	0	0	0	0	0	7	0	0	7	0	3	0	0	3	10
	04:15 PM	0	0	0	0	0	• 0	1	0	0	1 [2	0	0	0	2	1	2	0	0	3	6
	04:30 PM	0	1	0	0	1	0	0	0	0	0	1	5	1	0	7	0	1	0	0	1	9
	04:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	D	1	0	0	1	3
	Total	0	2	0	0	2	0	1	0	0	1	3	13	1	Ō	17	1	7	0	0	8	28
	05:00 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	2	0	0	2	5
	05:15 PM	0	0	0	0	0	0	1	0	0	1	0	4	0	0	4	0	2	0	0	2	7
	05:30 PM	1	1	0	0	2	1	0	0	0	1 (0	4	2	0	6	0	2	0	0	2	11
	05:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	3
	Total	1	2	0	Ó	3	1	1	0	0	2	0	12	2	0	14	Ò	7	0	0	7	26
																					·	
	Grand Total	1	4	0	0	5	1	2	0	0	3	3	25	3	0	31	1	14	0	0	15	54
	Apprch %	20.0	80.0	0.0	0.0		33.3	66.7	0.0	0.0		9.7	80.6	9.7	0.0		6.7	93.3	0.0	0.0		
	Total %	1.9	7.4	0.0	0.0	9.3	1.9	3.7	0.0	0.0	5.6	5.6	46.3	5.6	0.0	57.4	1.9	25.9	0.0	0.0	27.8	
											-											

	FOLL	OW THA	T DREA	M PARI	KWAY			CR 40					US 19	•••••••				US 19			
		E	astboun	d			V	Vestbou	nd			N	orthbour				S	puthbou	nd		•
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left.	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 04:	00 PM to 0	5:45 PM -	Peak 1 of	1									_								
Intersection	04:00 PI	M													•					.	
Volume	0	2	0	0	2	0	1	0	0	1	3	13	1	0	· 17	1	7	0	0	8	28
Percent	0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		17.6	76.5	5.9	0.0		12.5	87.5	0.0	0.0	1	
04:00 Volume	0	0	0	0	0	0	0	0	0	0	0	7	0	- 0	7	0	3	0	0	3	10
Peak Factor																					0.700
High Int.	04:30 PI	N				04:15 PI	M				04:00 PN	Λ		-		04:00 PN	Λ				
Volume	0	1	0	0	1	0	1	0	0	1	0	7	0	0	7	0	3	0	0	3	
Peak Factor					0.500					0.250					0.607					0.667	

 $HV''_{6} \quad NIS: (20) \rightarrow 3'_{6}$ $E/w: (6) \rightarrow 2'_{6}$

TABLE A-2

•							FDOT			
							Peak Season	F	Peak Seaso	n
		Count	Count	P	M Peak Hou	ur .	Adjustment	Pea	ak Hour Vol	ume
Roadway	Location	<u>Date</u>	Time	<u>NB/EB</u>	SB/WB	Total	Factor	NB/EB	SB/WB	Total
US 19	Between SR 336 and project access	7/22/2008	4:00 PM	182	198	380				
		7/23/2008	4:00 PM	209	194	403				
		7/24/2008	4:45 PM	210	<u>203</u>	<u>413</u>	· ·			· · · · · · · · · · · · · · · · · · ·
	· · · · ·			200	198	398	1.10%	220	218	438
US 19	Project access and CR 40	7/22/2008	4:00 PM	189	194	383				
		7/23/2008	4:00 PM	221	201	422				•
		7/24/2008	4:00 PM	<u>222</u>	<u>194</u>					
		•		211	196	<u>416</u> 407	1.10%	232	216	448
CR 40	US 19 and CR 40A	7/22/2008	4:00 PM	64	80	144				
		7/23/2008	4:00 PM	78	77	155				
· .		7/24/2008	4:00 PM			<u>140</u>				
	· · ·			67 70	73 77	147	1.10%	77	85	162
CR 40	US 19 to Marion County	7/22/2008	5:00 PM	82	79	161	2			
•		7/23/2008	4:00 PM	80	71	151				
		7/24/2008	5:00 PM	90		<u>155</u>				
	· · · · · · · · · · · · · · · · · · ·	· •	1 a	84	<u>65</u> 72	156	1.10%	92	79	171

LINCKS & ASSOCIATES, INC.



FLORIDA DEPARTMENT OF PORTATION 2007 Annual Average Daily Paffic Report - Report Type: ALL

County: 34 LEVY

	Site						AADT	" K "	Demand	" D "	"T"
Site	Type	Description	Direct:	ion 1	Directi	on 2	Two-Way	Fctr	K100	Fctr	Fctr
====	====		======		=======	====	=======	=====	====	=====	=====
0039		SR 45 150' S OF CR 326	N	0	S	0	4400 C	12.52F	11.10	59.16F	5.99F

Site Type : P= Portable; T= Telemetered
AADT Flags : C= Computed; E= Manual Est; F= First Yr Est P= Prior Year; S= Second Yr Est; T= Third Yr Est; X= Unknown
"K/D" Flags : A= Actual; F= Volume Fctr Catg; D= Dist/Func. Class; P= Prior Year; S= State-wide Default; W= One-Way Road
"T" Flags : A= Actual; F= Axle Fctr Catg; D= Dist/Func. Class; P= Prior Year; S= State-wide Default; X= Cross-Reference

18-Mar-2008 11:26:26

Page 1 of 1 ·

622UPD [1,0,0,2] 2_34_CAADT.txt

ort: 340039-20070807.syn Synopsis Page: 1 1

County: Station Descrip Start I Start I	tion: Date:	34 0039 SR 45 1 08/07/2 0000	.50' S C 2007)F CR 3	26
		Dire	ection:	в	
Time	1st	2nd	3rd	4th	Total
0000	10	5	5	4	24
0100	2	2	1	3	8
0200	2	2	2	4	10
0300	6	1	5	10	22
0400	8	9	14	10	41
0500	21	19	50	55	145
0600	71	70	68	72	281
0700	77	76	77	67	297
0800	69	51	70	61	251
0900	59	60	57	55	231
1000	55	70	60	69	254
1100	62	71	64	77	274
1200	75	57	66	74	272
1300	73	72	57	53	255
1400	83	73	76	54	286
1500	71	87	89	100	347
1600	86	99	80	75	340
1700	91	81	67	69	308
1800	77	64	43	61	245
1900	45	41	49	48	183
2000	35	33	35	28	131
2100	30	18	23	19	90
2200	13	9	15	9	46
2300	11	6	11	8	36
24-Hour	Totals	5:			4377

24-Hour Totals:

Peak Volume Information

	Hour	Volume	
A.M.	0645	302	
P.M.	1530	374	
Daily	1530	374	

Synopsis ort: 340039-20070808.syn Page: 2

	n: ption: Date:	34 0039 SR 45 1 08/08/2 0000		FCR 3	26
			ection:		
Time	1st	2nd	3rd		Total
0000	9	5	- 4	2	20
0100	1	4	0	5	10
0200	5	2	2	5	. 14
0300	3	2	2	12	19
0400	8	8	12	16	44
0500	19	38	31	56	144
0600	64	51	63	71	249
0700	66	68	98	61	293
0800	80	75	67	66	288
0900	51	47	58	60	216
1000	65	61	68	61	255
1100	78	67	59	55	259
1200	70	65	65	79	279
1300	76	54	69	57	256
1400	79	73	66	83	301
1500	55	· 76	82	93	306
1600	99	89	91	82	361
1700	70	96	90	102	358
1800	59	63	57	50	229
1900	46	49	40	34	169
2000	46	47	38΄	39	170
2100	29	26	24	22	101
2200	20	22	13	12	67
2300	15	4	5	5	29
24-Hour	Totals	:			4437

4-Hour Totals:

Peak Volume Information

	Hour	Volume	
A.M.	0730	314	
P.M.	1545	372	
Daily	1545	372	

APPENDIX C: Existing and Future Traffic Volume Worksheets

.007 Weekly Axle Factor Category Report - Report Type: ALL

.

County: 34 - LEVY

Weel	c Dates	3401		3403		an f 0.0
-	01 (01 (0007 01 (00))	US27A	SR121, SR55 - SR		SR55, CR347 -	
	01/01/2007 - 01/06/			0.95		
2	01/07/2007 - 01/13/			0.95		
3	01/14/2007 - 01/20/			0.95		
4	01/21/2007 - 01/27/			0.95		
5	01/28/2007 - 02/03/			0.95		
6	02/04/2007 - 02/10/3			0.95		
7	02/11/2007 - 02/17/			0.95		
8	02/18/2007 - 02/24/			0.95		
9	02/25/2007 - 03/03/			0.95		
10	03/04/2007 - 03/10/2	-		0.95		
11	03/11/2007 - 03/17/2			0.95		
12	03/18/2007 - 03/24/3			0.95		
13	03/25/2007 - 03/31/2			0.95		
14	04/01/2007 - 04/07/2			0.95		
15	04/08/2007 - 04/14/3			0.95		
16	04/15/2007 - 04/21/2			. 0.95		
17	04/22/2007 - 04/28/2			0.95		
18	04/29/2007 - 05/05/3			0.95		
	05/06/2007 - 05/12/3			0.95		
	05/13/2007 - 05/19/3			0.95		
	05/20/2007 - 05/26/3			0.95		
	05/27/2007 - 06/02/2			0.95		
23	06/03/2007 - 06/09/3			0.95		
	06/10/2007 - 06/16/3			0.95		
	06/17/2007 - 06/23/3			0.95		
26	06/24/2007 - 06/30/3			0.95		
27	07/01/2007 - 07/07/3			0.95		
	07/08/2007 - 07/14/2			0.95		
29	07/15/2007 - 07/21/3			0.95		
	07/22/2007 - 07/28/3			0.95		
	07/29/2007 - 08/04/3			0.95		
	08/05/2007 - 08/11/2			0.95		
	08/12/2007 - 08/18/2			0.95		
	08/19/2007 - 08/25/2			0.95		
35	08/26/2007 - 09/01/2			0.95		
	09/02/2007 - 09/08/2			0.95		
	09/09/2007 - 09/15/2			0.95		
	09/16/2007 - 09/22/2			0.95		
	09/23/2007 - 09/29/2			0.95		
	09/30/2007 - 10/06/2			0.95		
	10/07/2007 - 10/13/2			0.95		
	10/14/2007 - 10/20/2			0.95		
	10/21/2007 - 10/27/2			0.95		
	10/28/2007 - 11/03/2			0.95		-
	11/04/2007 - 11/10/2			0.95		
	11/11/2007 - 11/17/2			0.95		
	11/18/2007 - 11/24/2			0.95		
	11/25/2007 - 12/01/2			0.95		
	12/02/2007 - 12/08/2			0.95		
	12/09/2007 - 12/15/2			0.95		
	12/16/2007 - 12/22/2			0.95	0.96	
	12/23/2007 - 12/29/2			0.95	0.96	
53	12/30/2007 - 12/31/2	2007 0.92	0.95	0.95	0.96	
				•	•	

INTERSECTION: U.S. 19 & Construction Driveway PEAK HOUR FACTOR: 0.95

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2008 EXISTING	CONDITIONS								180			132	
"BACKGROU	ND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	ED" TRAFFIC								79			92	
Years To	Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Gro	owth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND T	RAFFIC GROWTH								30			22	
2015 NON-PRO	JECT TRAFFIC								289			246	
"PROJECT LAND USE	TRAFFIC" TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By												
Trips	Net New				105		45		4	900	385	40	
TOTAL PROJ	ECT TRAFFIC				105		45		4	900	385	40	
2015 TOTA	L TRAFFIC				105		45		293	900	385	286	

INTERSECTION: U.S. 19 & Operations Driveway PEAK HOUR FACTOR: 0.95

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2008 EXISTING	CONDITIONS								180			132	
"BACKGROUI		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	ED" TRAFFIC	<u> </u>							79	L		92	
Years To	Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Gro	owth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND TH	RAFFIC GROWTH								30			22	
2015 NON-PRO		I							289			246	
LAND USE	TYPE	EBL	EBT	EBR	WBL	wвт	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By												
Trips	Net New				9		4		900	93	40	105	
TOTAL PROJE	CT TRAFFIC				9		4		900	93	40	105	
2015 TOTAI	TRAFFIC	[9		4		1,189	93	40	351	

INTERSECTION: CR 40 & Heavy Haul Driveway PEAK HOUR FACTOR: 0.95

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL.	NBT	NBR	SBL	SBT	SBR
2008 EXISTING	CONDITIONS		56			53							
"BACKGROU	ND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	ED" TRAFFIC		0			0	[
Years To	Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Gro	owth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND TI	RAFFIC GROWTH		9			9							
2015 NON-PRO	JECT TRAFFIC		65		I	62	[
"PROJECT	TRAFFIC"												
LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By												
Trips	Net New		7			57			15				
TOTAL PROJ	ECT TRAFFIC		7			57			15				
2015 TOTA	L TRAFFIC		72	r		119		·······	15				

INTERSECTION: U.S. 19 & SR 121 COUNT DATE: December 2, 2008 TIME PERIOD: 4:45 p.m. - 5:45 p.m. PEAK HOUR FACTOR: 0.97

"EXISTING	TRAFFIC"	EBL	ЕΒТ	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning	Movements				62		7		95	41	16	121	
Peak Season Co	rrection Factor	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090
2008 EXISTING	CONDITIONS		·		68		8		104	45	17	132	
"BACKGROUN	ND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	ED" TRAFFIC				0		0		15	0	0	9	
				·			r <u></u>			.		· · ·	
Years To	Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Gro	wth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND TR	RAFFIC GROWTH				11		1		17	7	3	22	
2015 NON-PRO.	JECT TRAFFIC				79		9		136	52	20	163	
"PROJECT	TRAFFIC"												
LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By												
Trips	Net New				42				56	364		7	
TOTAL PROJE	CT TRAFFIC				42		0		56	364	0.	7	
2015 TOTAL		1			121		9		192	416	20	170	

INTERSECTION: U.S. 19 & CR 40 COUNT DATE: November 20, 2008 TIME PERIOD: 4:45 p.m. - 5:45 p.m. PEAK HOUR FACTOR: 0.94

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning	Movements	20	57	66	57	49	41	99	221	85	42	194	12
Peak Season Co	rrection Factor	1.070	1.070	1.070	1.070	1.070	1.070	1.070	1.070	1.070	1.070	1.070	1.070
2008 EXISTING	CONDITIONS	21	61	71	61	52	44	106	236	91	45	208	13
"BACKGROU	ND TRAFFIC"	EBL	EBT	EBR	WBL	wвт	WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	ED" TRAFFIC	0	0	0	0	0	0	0	35	0	0	59	0
Years To	Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Gro	wth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND TH	RAFFIC GROWTH	3	10	12	10	9	7	17	39	15	7	34	2
2015 NON-PRO	JECT TRAFFIC	24	71	83	71	61	51	123	310	106	52	301	15
"PROJECT	TRAFFIC"												
LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By	<u> </u>											
Trips	Net New	3					7		104		72	908	15
TOTAL PROJE	CT TRAFFIC	3	0	0	0	0	7	0	104	0	72	908	15
2015 TOTAI	TRAFFIC	27	71	83	71	61	58	123	414	106	124	1,209	30

> INTERSECTION: U.S. 19 & Construction Driveway PEAK HOUR FACTOR: 0.95

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2008 EXISTING	G CONDITIONS		[]				216			232	
"BACKGROU	ND TRAFFIC"	EBL	EBT	EBR	WBL		WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	ED" TRAFFIC								35			59	
Years To	Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Gro	owth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND T	RAFFIC GROWTH								36			38	
2015 NON-PRO	JECT TRAFFIC					[287			329	
"PROJECT	TRAFFIC"												
LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By									-			
Trips	Net New				900	·	385		35	105	45	4	
TOTAL PROJ	ECT TRAFFIC				900		385		35	105	45	4	
2015 TOTA	L TRAFFIC				900		385		322	105	45	333	

> INTERSECTION: U.S. 19 & Operations Driveway PEAK HOUR FACTOR: 0.95

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	ŞBL	SBT	SBR
2008 EXISTING	CONDITIONS								216			232	
"BACKGROU	ND TRAFFIC"	EBL	EBT	EBR	WBL	wвт	WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	ED" TRAFFIC		ſ						35			59	
Years To	Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Gro	owth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND TH	RAFFIC GROWTH								36			38	
2015 NON-PRO		<u> </u>	[<u> </u>		[]		287			329	
LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By	T											
Trips	Net New				80		35		105	9	4	900	
TOTAL PROJ	ECT TRAFFIC	1			80		35		105	9	4	900	
2015 TOTA					80		35		392	9	4	1,229	

INTERSECTION: CR 40 & Heavy Haul Driveway PEAK HOUR FACTOR: 0.95

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2008 EXISTING	G CONDITIONS		77			85						·	
"BACKGROU	ND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	ED" TRAFFIC		0			0				·			
		· · · · · · · · · · · · · · · · · · ·	r		· · · · ·								
Years To	Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Gr	owth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND T	RAFFIC GROWTH		13			14							
		· · ·	r				·			r			
2015 NON-PRO	JECT TRAFFIC		90	L		99							
"PROJECT									•				
LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By												
Trips	Net New		57	15		7							
TOTAL PROJ	ECT TRAFFIC		57	15		7	•						
2015 TOTA	L TRAFFIC		147	15		106							

> INTERSECTION: U.S. 19 & Construction Driveway PEAK HOUR FACTOR: 0.95

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2008 EXISTING	CONDITIONS								180			132	
BACKGROUN	ID TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VESTI	ED" TRAFFIC			l					79			92	
Years To	Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Gro	wth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND TR	AFFIC GROWTH								30			22	
2015 NON-PRO.									289			246	
LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By												·
Trips	Net New				105		45	_	4	900	385	40	
TOTAL PROJE	CT TRAFFIC				105		45		4	900	385	40	
2015 TOTAL	. TRAFFIC				105		45		293	900	385	286	

INTERSECTION: U.S. 19 & Operations Driveway PEAK HOUR FACTOR: 0.95

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2008 EXISTING	CONDITIONS								180			132	
"BACKGROUI	ND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VESTED" TRAFFIC		T							79			92	
· · · · · · · · · · · · · · · · · · ·										•			
Years To	Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Gro	wth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND TF	RAFFIC GROWTH					_			30			22	
2015 NON-PRO	JECT TRAFFIC								289			246	
"PROJECT	TRAFFIC"												
LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By												
Trips	Net New				9		4		900	93	40	105	
TOTAL PROJE	CT TRAFFIC				9		4		900	93	40	105	
2015 TOTAI	TRAFFIC				9		4		1,189	93	40	351	

> INTERSECTION: CR 40 & Heavy Haul Driveway PEAK HOUR FACTOR: 0.95

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2008 EXISTING	CONDITIONS		56			53							
"BACKGROUN	ND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL.	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	ED" TRAFFIC		0			0							
Years To	Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Gro	Yearly Growth Rate		2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND TR	RAFFIC GROWTH		9			9							
2015 NON-PRO.	JECT TRAFFIC		65	[62							
"PROJECT	TRAFFIC"												
LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By												
Trips	Net New		7			57		15					
TOTAL PROJE	CT TRAFFIC		7			57		15					
2015 TOTAL	TRAFFIC		- 72	[119		15					

> INTERSECTION: U.S. 19 & SR 121 COUNT DATE: December 2, 2008 TIME PERIOD: 4:45 p.m. - 5:45 p.m. PEAK HOUR FACTOR: 0.97

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning	Movements				62		7		95	41	16	121	
Peak Season C	orrection Factor	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090
2008 EXISTING	CONDITIONS		[68		8		104	45	17	132	
"BACKGROU	ND TRAFFIC"	EBL	ЕВТ	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	ED" TRAFFIC		[0		0		15	0	0	9	
Years To	Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Gr	Yearly Growth Rate		2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND T	RAFFIC GROWTH				11		1		17	7	3	22	
2015 NON-PRO	JECT TRAFFIC				79		9		136	52	20	163	
"PROJECT	TRAFFIC"												
LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By	1											
Trips	Net New				42				56	364		7	
TOTAL PROJ	ECT TRAFFIC				42		0		56	364	0	7	
2015 TOTA	L TRAFFIC				121		9		192	416	20	170	

> INTERSECTION: U.S. 19 & CR 40 COUNT DATE: November 20, 2008 TIME PERIOD: 4:45 p.m. - 5:45 p.m. PEAK HOUR FACTOR: 0.94

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning	Movements	20	57	66	57	49	41	99	221	85	42	194	12
Peak Season C	orrection Factor	1.070	1.070	1.070	1.070	1.070	1.070	1.070	1.070	1.070	1.070	1.070	1.070
2008 EXISTING	G CONDITIONS	21	61	71	61	52	44	106	236	91	45	208	13
"BACKGROU	ND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	TOTAL "VESTED" TRAFFIC		0	0	0	0	0	0	35	0	0	59	0
Years To	Buildout	7	7	7	7	7	7	7	7	7	. 7	7	7
Yearly Gr	owth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND T	RAFFIC GROWTH	3	10	12	10	9	7	17	39	15	7	34	2
2015 NON-PRC	JECT TRAFFIC	24	71	83	71	61	51	123	310	106	52	301	15
"PROJECT	TRAFFIC"												
LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By												
Trips	Net New	3					7		104		72	908	15

TOTAL PROJECT TRAFFIC 2015 TOTAL TRAFFIC 1,209 **TRAFFIC VOLUMES AT STUDY INTERSECTION** (P.M. Peak-Hour, Peak Construction Traffic, Heavy Haul Route 2)

INTERSECTION: U.S. 19 & Construction Driveway PEAK HOUR FACTOR: 0.95

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2008 EXISTING	CONDITIONS								216			232	
"BACKGROU		EBL	EBT	EBR	WBL		WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	ED" TRAFFIC	<u>. </u>	l	L	l		l	L	35	L	l	59	
Years To	Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Gro	owth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND T	RAFFIC GROWTH					_			36			38	
2015 NON-PRO	JECT TRAFFIC								287			329	
"PROJECT	TRAFFIC"						,						
LAND USE	TYPE	EBL	EBT	EBR	WBL	_WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By							·					
Trips	Net New				900		385		35	105	45	4	
TOTAL PROJ	ECT TRAFFIC				900		385		35	105	45	4	
2015 TOTA	L TRAFFIC	[900		385		322	105	45	333	

TRAFFIC VOLUMES AT STUDY INTERSECTION (P.M. Peak-Hour, Peak Construction Traffic, Heavy Haul Route 2)

INTERSECTION: U.S. 19 & Operations Driveway PEAK HOUR FACTOR: 0.95

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2008 EXISTING	CONDITIONS	1							216			232	
"BACKGROUI	ND TRAFFIC"	EBL	ЕВТ	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
TOTAL "VEST	ED" TRAFFIC								35			59	
Years To	Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Gro	owth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND TH	RAFFIC GROWTH								- 36			38	
2015 NON-PRO	JECT TRAFFIC								287			329	
"PROJECT	TRAFFIC"												
LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By												
Trips	Net New				80		35		105	9	4	900	
TOTAL PROJE	CT TRAFFIC				80		35	·	105	9	4	900	

TRAFFIC VOLUMES AT STUDY INTERSECTION (P.M. Peak-Hour, Peak Construction Traffic, Heavy Haul Route 2)

INTERSECTION: CR 40 & Heavy Haul Driveway PEAK HOUR FACTOR: 0.95

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2008 EXISTING	G CONDITIONS		77			85							
"BACKGROU	ND TRAFFIC" ED" TRAFFIC	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
			<u>_</u>	L	I		l			(L	I	LJ
Years To	Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Gro	owth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND T	ACKGROUND TRAFFIC GROWTH					14							
							·····						
2015 NON-PRO	JECT TRAFFIC		90		L	99							
"PROJECT	TRAFFIC"												
LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By												
Trips	Net New		57	15		7							
TOTAL PROJ	TOTAL PROJECT TRAFFIC			15		7							
2015 TOTA	L TRAFFIC	Т	147	15		106							

TRAFFIC VOLUMES AT STUDY INTERSECTION (A.M. Peak-Hour, Peak Operations Traffic)

INTERSECTION: U.S. 19 & Operations Driveway PEAK HOUR FACTOR: 0.95

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2008 EXISTING	CONDITIONS								180			132	
"BACKGROUI	ND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	ED" TRAFFIC								79			92	1
Years To	Buildout	9	9	9	9	9	9	9	9	9	9	9	9
Yearly Gro	owth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND TH	ACKGROUND TRAFFIC GROWTH								39			29	
2017 NON-PRO	JECT TRAFFIC	1							298			253	
"PROJECT LAND USE	TRAFFIC"	EBL	ЕВТ	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By			LDI	WDL			NUL	NDT		301		
Trips	Net New				14		6			148	64		
TOTAL PROJE	ECT TRAFFIC				14		6		0	148	64	0	
2017 TOTA					14		6		298	148	64	253	

TRAFFIC VOLUMES AT STUDY INTERSECTION (P.M. Peak-Hour, Peak Operations Traffic)

INTERSECTION: U.S. 19 & SR 121 COUNT DATE: December 2, 2008 TIME PERIOD: 4:45 p.m. - 5:45 p.m. PEAK HOUR FACTOR: 0.97

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning	Movements				62		7		95	41	16	121	
Peak Season Co	rrection Factor	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090
2008 EXISTING	CONDITIONS				68		8		104	45	17	132	
"BACKGROUN	ND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	ED" TRAFFIC				0		0		15	0	0	9	
Years To	Buildout	9	9	9	9	9	9	9	9	9	9	9	9
Yearly Gro	wth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND TR	RAFFIC GROWTH				15		2		23	10	4	29	
2017 NON-PRO.	JECT TRAFFIC				83		10		142	55	21	170	
"PROJECT	TRAFFIC"											,	
LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By												
Trips	Net New				5				7	48		1	
TOTAL PROJE	CT TRAFFIC				5		0		7	48	0	1	
2017 TOTAL	TRAFFIC				88		10		149	103	21	171	

TRAFFIC VOLUMES AT STUDY INTERSECTION (P.M. Peak-Hour, Peak Operations Traffic)

INTERSECTION: U.S. 19 & CR 40 COUNT DATE: November 20, 2008 TIME PERIOD: 4:45 p.m. - 5:45 p.m. PEAK HOUR FACTOR: 0.94

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Raw Turning	Movements	20	57	66	57	49	41	99	221	85	42	194	12
Peak Season Co	orrection Factor	1.070	1.070	1.070	1.070	1.070	1.070	1.070	1.070	1.070	1.070	1.070	1.070
2008 EXISTING	CONDITIONS	21	61	71	61	52	44	106	236	91	45	208	13
"BACKGROU	ND TRAFFIC"	EBL	EBT	EBR	WBL	wвт	WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	ED" TRAFFIC	0	0	0	0	0	0	0	35	0.	0	59	0
Years To	Buildout	9	9	9	9	9	9	9	9	9	9	9	9
Yearly Gr	owth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND TI	Yearly Growth Rate KGROUND TRAFFIC GROWTH		13	15	13	11	10	23	51	20	10	45	3
2017 NON-PRO	JECT TRAFFIC	26	74	86	74	63	54	129	322	111	55	312	16
"PROJECT	TRAFFIC"												
LAND USE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By												
Trips	Net New	1					1		12		7	121	2
TOTAL PROJ	ECT TRAFFIC	1	0	0	0	0	1	0	12	0	7	121	2
2017 TOTA		27	74	86	74	63	55	129	334	111	62	433	18

TRAFFIC VOLUMES AT STUDY INTERSECTION (P.M. Peak-Hour, Peak Operations Traffic)

INTERSECTION: U.S. 19 & Operations Driveway PEAK HOUR FACTOR: 0.95

"EXISTING	TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2008 EXISTING	CONDITIONS								216			232	
"BACKGROU	ND TRAFFIC"	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
TOTAL "VEST	ED" TRAFFIC								35	l		59	
Years To	Buildout	9	9	9	9	9	9	9	9	9	9	9	9
Yearly Gro	owth Rate	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BACKGROUND T	ACKGROUND TRAFFIC GROWTH								47			50	
2017 NON-PRO									298			341	
LANDUSE	TYPE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Project	Pass - By	1											
Trips					130		55			14	6		
TOTAL PROJ	TOTAL PROJECT TRAFFIC				130		55		0	14	6	0	
2017 TOTA					130		55		298	14	6	341	

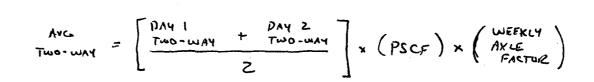
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ROADWAY PEAK-HOUR CALCULATIONS

Station # 0039

US 41 => South of CR 326

US 41 => South of	CR 326								Weekly	
					Maximum Values		PHF	PSCF	Axle Factor	
		Number of Count Days:	2		370		0.93	1.11	0.95	
			Ex	tisting Peak-Se	eason			2015 B	ackground	2017 Background
Day 1 TWO-WAY	Day 2 TWO-WAY	Time of Day	Avg. TWO-WAY	15-Min Two-Wav	Hourly TWO-WAY		Growth Rate	E	lourly O-WAY	Hourly TWO-WAY
86	99	4:00	98	98	370	400-500 pm	2.80%	1	449	474
99	89 .	4:15	99	99	357	p	2.0070		112	-1-
80	91	4:30	90	90	351					
75	82	4:45	83	83	344					
91	70	5:00	85	85	351					
81	96	5:15	93	93						
67	90	5:30	83	83						
69	102	5:45	90	90						



FLORIDA STATE HIGHWAY SYSTEM LEVEL OF SERVICE REPORT

2007



FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT TWO

August 2008



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	lap	Loca		System	W.P	Miles	S/MI FDOT			MIN	Maximum						Proj	ectio	ons	
Location	ID	Lanes	AreaType	Status	<u>Committed</u> Section		Jur	Station #		LOS STD	Service Volume	Count	Count O S	Rate	2008	L O S	2011	L O S	2021	L O S
Levy																				
SR 24	43 D S	St.			From 2nd	Street	t to N.C.L.	of Cedar	·Key									K	11.1	אכ
Town of Ceda	r Key	2/U	Arterial Rural Dev	SHS	 34070000	0.91	0.0	340155	AADT: Peak Hr:	C C	11,000 1,070	2,800	2,500 C 278 C	1%	2,500 278	с с	2,600 289	с с	2,900 322	
SR 24	29				From N.C	.L. of	Cedar Key	to S.W.C	C.L. of O	tter C	reek							K		3%
Levy County		2/U	Highway Rural Undev	SHS	 34070000	19.55		340008 340155 340239	AADT: Peak Hr:	с с	7,900 770	2,131	1,962 A 239 B	1%	2,000 244	A B	2,000 244	A B	2,200 268	A B
SR 24	42 2n	d Ave.		<u></u>	From S.W	.C.L.	of Otter C	reek to N	.E.C.L. 0	f Otte	r Creek							K	100: 11.10)%
Town of Otter	Creek	2/U	Arterial Rural Dev	SHS	 34070000	1.42	0.0	340024 340224	AADT: Peak Hr:	C C	11,000 1,070	1,400	1,275 B 142 B	1%	1,300 144	B B	1,300 144	B B	1,400 155	B B
SR 24	30				From N.E	.C.L. (of Otter Cı	eek to S.	W.C.L. o	f Bron	son							K	100: 11.1 0)%
Levy County		2/U	Highway Rural Undev	SHS	□ 34070000	9.83		340224	AADT: Peak Hr:	· C C	7,900 770	1,400	1,150 A 128 A	1%	1,200 133	A A	1,200 133	A A	1,300 144	
SR 24	37 Th	rasher [Dr,		From S.W	.C.L.	of Bronson	to N.E.C	C.L. of Br	onson								K	100: 11.1 0)%
City of Bronso	n	2/U	Arterial Rural Dev	SHS		2.77	0.4	340117	AADT: Peak Hr:	C C	11,000 1,070	3,700	3,600 C 400 C	2.2%	4,100 455	с с	4,400 488	с с	5,300 588	с с
SR 24	31				From N.E.	.C.L. 0	of Bronson	to Alach	ua Co. Li	ine								К	_{100:} 11.10)%
Levy County		2/U	Highway Rural Undev	SHS	 34070000	5.27		340117	AADT: Peak Hr:	C C	7,900 770	3,700	3,600 B 400 B	2.2%	4,100 455	B C	4,400 488	B C	5,300 588	с с
SR 45	27 US	41/ SW	/ 7th St.		From Mar	ion C	o. Line to S	5.C.L. of	Williston									К	100: 11.10)%
Levy County		2/U	Highway Rural Undev	SHS	 34040000	11.29		340039 340223	AADT: Peak Hr:	с с	7,900 770	4,700	4,700 C 522 C	2.8%	5,200 577	C C	5,700 633	C C	7,100 788	
SR 45	39 US	41/ SW	/ 7th St.		From S.C.	L. of V	Williston to	SR 500										K	11.10	1%
Town of Willis	ton	2/U	Arterial Rural Dev	SHS	 34040000	0.61	1.0	340143 345015	AADT: Peak Hr:	с с	11,000 1,070	10,250	8,950 C 993 C	2.1%	10,100 1,121	C D	10,700 1,188	C D	12,900 1,432	D E

Roa	Мар	Loca	Facility	System	W.P	Miles	S/MI F	DOT	Cou		MIN	Maximum	2006	2007 L	Growth			Proj	ecti		
Locatio		Lanes			Committed Section	_		Jur	Station #	-	LOS STD	Service Volume		Count O S	Rate	2008	L O S	2011	L O S	2021	
Levy																					
SR 45	2	2 US 27A			From W.	C.L. of	[Willis	ton t	o SR 45 (North)	-					_			К	C _{100:} 11.10	09
Town of	Williston	4/D	Arterial Rural Dev	Emergin SIS	g 🗌 34010000	0.80	1.0		340122 340139 345014	AADT: Peak Hr:	B B	5,300 520	14,366	14,267 C 1,584 C		14,900 1,654	C C	15,700 1,743	C C	18,600 2,065	
SR 45	4	0 N Main St			From NE	1st Av	ve to SF	R 121	· · · · · · · · · · · · · · · · · · ·										К	C _{100:} 11.10	0%
Town of	Williston	4/U	Arterial Rural Dev	SHS	☐ 34040000	0.37	0.0		345013	AADT: Peak Hr:	с с	25,500 2,470	9,000	10,000 C 1,110 C	Var	10,100 1,121	с с	10,400 1,154		11,400 1,265	
SR 45	4	I N Main St			From SR	121 to	N.C.L.	. of V	Villiston										K	C _{100:} 11.10	0%
Town of	Williston	2/U	Arterial Rural Dev	SHS		0.50	0.0		340150 345011	AADT: Peak Hr:	с с	11,000 1,070	4,300	4,250 C 472 C	2.2%	4,500 500	с с	4,800 533	C C	5,700 633	
SR 45	2	8 N Main St.			From N.C	C.L. of	Willist	on to	Alachua	Co. Lin	e							<u></u>	K	C _{100:} 11.10	0%
Levy Co	unty	2/U	Highway Rural Undev	SHS		6.45			340150	AADT: Peak Hr:	с с	7,900 770	3,800	4,000 B 444 C	2.9%	4,100 455	B C	4,400 488	B C	5,600 622	
SR 49	34	4 US 129			From SR	55 to N	N.E.C.L	J. of	Chieflan	1									K	11.10	٥٥
City of C	hiefland	2/U	Arterial Rural Dev	SHS		0.22	0.0		340089	AADT: Peak Hr:	C C	11,000 1,070	3,600	3,100 C 344 C	2.6%	3,500 388	с с	3,800 422	с с	4,700 522	
SR 49	24	4 US 129			From N.E	.C.L. o	of Chie	flanc	l to Gilch	rist Co.	Line								K	11.10	%נ
Levy Co	unty	2/U	Highway Rural Undev	SHS	 34020000	7.61			340089	AADT: Peak Hr:	с с	7,900 770	3,600	3,100 B 344 B	2.6%	3,500 388	B B	3,800 422	8 B	4,700 522	
SR 55	18	9 US 19/98			From N.C	L. of	Inglis t	o S.C	C.L. of In	glis									ĸ	. 11.10)%
Town of	Inglis	4/D	Arterial Rural Dev	Emerging SIS	34050000	1.07	0.9		340030 340069	AADT: Peak Hr:	B B	5,300 520	6,700	6,450 C 716 C	1.9%	7,100 788	с с	7,500 832	с с	8,800 977	
SR 55		4 US 19/98			From SR	121 to	N.C.L.	of I	nglis										K	. _{100:} 11.10	9ر
Levy Co	unty	4/D	Highway Rural Undev	Emerging SIS	34050000	9.05				AADT: Peak Hr:	B B	28,600 2,800	5,200	4,900 A 544 A	2.2%	5,300 588	A A	5,600 622	A A	6,800 755	
SR 55	-	3 US 19/98			From S.C	.L. of (Otter C	reek	to SR 12	1									K	. _{100:} 11.10)%
Levy Co	unty	4/D	Highway Rural Undev	Emerging SIS	34050000	13.31				AADT: Peak Hr:	B B	28,600 2,800	4,000	3,400 A 377 A	1%	4,000	A	4,100 455	Α	4,500 500	

Page 2

APPENDIX D: 2008 Existing Intersection and Roadway Analyses Worksheets

HCS+: Unsignalized Intersections Release 5.3

_TWO-WAY STOP CONTROL SUMMARY____

Analyst: KHA Agency/Co.: KHA Date Performed: 12/8/2008 Analysis Time Period: P.M. Peak Hour U.S. 19 & SR 121 Intersection: Jurisdiction: FDOT District 2 Units: U. S. Customary 2008 Existing Traffic Conds Analysis Year: Project ID: Levy County Advanced Reactor East/West Street: SR 121 North/South Street: U.S. 19 Intersection Orientation: NS Study period (hrs): 0.25 _Vehicle Volumes and Adjustments_ Major Street: Northbound Southbound Approach Movement 2 3 5 1 4 6 т т L R L R Volume 104 45 17 132 Peak-Hour Factor, PHF 0.97 0.97 0.97 0.97 Hourly Flow Rate, HFR 107 46 17 136 Percent Heavy Vehicles - ----4 --Median Type/Storage / 2 Raised curb RT Channelized? No Lanes 2 2 1 1 Configuration \mathbf{T} R \mathbf{L} т Upstream Signal? No No Westbound Minor Street: Eastbound Approach 7 Movement 8 9 11 12 10 L \mathbf{T} R L Т R . Volume 68 8 Peak Hour Factor, PHF 0.97 0.97 Hourly Flow Rate, HFR 70 8 Percent Heavy Vehicles 1 1 Percent Grade (%) 0 0 Flared Approach: Exists?/Storage 1 Lanes 1 1 Configuration L R Delay, Queue Length, and Level of Service_ SB Westbound Eastbound Approach NB Movement 1 4 7 8 9 10 12 11 Lane Config L \mathbf{L} R v (vph) 17 70 8 C(m) (vph) 1411 812 1016 0.01 0.09 0.01 v/c 95% queue length 0.02 0.04 0.28 8.6 Control Delay 7.6 9.9 LOS А А А 9.7 Approach Delay Approach LOS А

HCS+: Unsignalized Intersections Release 5.3

Phone: E-Mail: Fax:

TWO-WAY STOP CONTROL (TWSC) ANALYSIS Analyst: KHA Agency/Co.: KHA 12/8/2008 Date Performed: Analysis Time Period: P.M. Peak Hour U.S. 19 & SR 121 Intersection: Jurisdiction: FDOT District 2 Units: U. S. Customary 2008 Existing Traffic Conds Analysis Year: Project ID: Levy County Advanced Reactor East/West Street: SR 121 North/South Street: U.S. 19 Study period (hrs): 0.25 Intersection Orientation: NS Vehicle Volumes and Adjustments_ 5 Major Street Movements 1 2 3 4 6 \mathbf{L} т \mathbf{L} т R R 104 45 17 132 Volume Peak-Hour Factor, PHF 0.97 0.97 0.97 0.97 Peak-15 Minute Volume 27 12 4 34 Hourly Flow Rate, HFR 107 46 17 136 Percent Heavy Vehicles ---------4 -----12 Median Type/Storage Raised curb RT Channelized? No Lanes 2 1 1 2 т R Configuration т L Upstream Signal? No No 8 12 Minor Street Movements 7 9 10 11 т \mathbf{L} R Т R L 8 Volume 68 Peak Hour Factor, PHF 0.97 0.97 Peak-15 Minute Volume 18 2 Hourly Flow Rate, HFR 70 8 Percent Heavy Vehicles 1 1 Percent Grade (%) 0 0 Flared Approach: Exists?/Storage 1 RT Channelized? No 1 1 Lanes Configuration L R Pedestrian Volumes and Adjustments_ 13 14 15 16 Movements Flow (ped/hr) 0 0 0 0 12.0 Lane Width (ft) 12.0 12.0 12.0 4.0 4.0 Walking Speed (ft/sec) 4.0 4.0 0 0 Percent Blockage 0 0

			Up	stream Si	gnal Dat	a			
		Prog. Flow 'vph	Sat Flow vph	Arrival Type	Green Time sec	Cycle Length sec	Prog. Speed mph	Distance to Signal feet	
s2	Left-Turn Through		<u></u>	· · · · · · · · · · · · · · · · · · ·	<u> </u>		···· - · · · · · · · · · · · · · · · ·		
S5	Left-Turn								

Through

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

Movement 2 Movement 5 Shared ln volume, major th vehicles: Shared ln volume, major rt vehicles: Sat flow rate, major th vehicles: Sat flow rate, major rt vehicles: Number of major street through lanes:

Worksheet 4-Critical Gap and Follow-up Time Calculation

. Gap Cal	culatio	m						
:	1	4	7	8	9	10	11	12
	\mathbf{L}	L	L	т	R	L	т	R
e)		4.1	7.5		6.2			
	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
		4	1		1			
			0.20	0.20	0.10	0.20	0.20	0.10
Grade			0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.70		0.00			
1-stage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-stage	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
1-stage		4.2	6.8		6.2			
2-stage		4.2	5.8		6.2			
Jp Time C	alculat	ions	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>		• • • •			
:	1	4	7	8	9	10	11	12
	L	\mathbf{L}	L	т	R	L	Т	R
2)	1.00	2.20 1.00 4 2.2	3.50 1.00 1 3.5	1.00	3.30 1.00 1 3.3	1.00	1.00	1.00
	Grade 1-stage 2-stage 1-stage 2-stage	1 L 2.00 Grade 1-stage 0.00 2-stage 0.00 1-stage 2-stage Dp Time Calculat L	L L 4.1 2.00 2.00 4 Grade 0.00 1-stage 0.00 0.00 2-stage 0.00 0.00 1-stage 4.2 2-stage 4.2 2-stage 4.2 2-stage 4.2 2-stage 2.20 1.00 1.00 4	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Worksheet 5-Effect of Upstream Signals

Proportion vehicles arriving on green P

Computation 1-Queue Clearance Time at	-	Signal vement 2	Mo	vement 5
	V(t)	V(l,prot)	V(t)	V(l,prot)
V prog Total Saturation Flow Rate, s (vph)				
Arrival Type				
Effective Green, g (sec)				

g(q1) g(q2) g(q)

alpha beta Travel time, t Smoothing Fact Proportion of Max platooned				V(t		nent 2		Movemen	5
oeta Fravel time, t Smoothing Fact Proportion of Max platooned) V(t	- \ \ \ \ \ 77/7	,prot)
beta Travel time, t Smoothing Fact Proportion of Max platooned				. (-	-) V	(l,prot	/ V((-) V(I	,proc,
Travel time, t Smoothing Fact Proportion of Max platooned									
Smoothing Fact Proportion of Max platooned									
Proportion of Max platooned		c)							
Max platooned	or, F								
	conflic	ting flo	w, f						
	flow, V	(c,max)							
Min platooned									
Duration of bl			(q)						
Proportion tim			(<u>r</u> ,		0.0	000		0.000	
Computation 3-	Platoon	Event P	eriods	Resu	ılt				
p(2)				0.00)0				
p(5)				0.00	00				
p(dom)									
p(subo)					•				
Constrained or	uncons	trained?							
	-								
Proportion		•							
unblocked		(1		((2)		(3))	
for minor			-stage		Two-S	Stage Pr	ocess		
movements, p(x	:)	Proc	ess	Stag	ge I		Stage	II	
 p(1)				······.		•			
p(4)									
p(7)									
p(8)									
p(9)									
p(10)									
p(11)									
p(12)									
Computation 4	and 5					· · · · · · · · · · · · · · · · · · ·			
Single-Stage P									
Movement		1	4	7	8	9	10	11	12
.iovemene		L	Ľ	Ĺ	т	R	L	T	R
		<u> </u>			*		<u> </u>	1	**
Vc,x		·······	153	209		54			
S									
Px									
V c,u,x									
Cr,x									
C plat,x									
- ·									
Two-Stage Proc		7		0		1.0		-	1
		7 Stage2	Stado ¹	8) (1+-	10 age1 St	3900	1 Stagol	
	Stage1	stage2	Stage1	Stage2	6 DC8	ager St	age2	Stage1	Stage:
V(c,x)	107	102						************************	
S		3000							
P(x)									
V(c,u,x)									
C(r,x)									

C(plat,x)

Worksheet 6-Impedance and Capacity Equations

Step 1: RT from Minor St.	9	12
Conflicting Flows	54	
Potential Capacity	1016	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	1016	
Probability of Queue free St.	0.99	1.00
Step 2: LT from Major St.	4	1
Conflicting Flows	153	
Potential Capacity	1411	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	1411	•
Probability of Queue free St.	0.99	1.00
Maj L-Shared Prob Q free St.		
Step 3: TH from Minor St.	8	11
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.99	0.99
Movement Capacity		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	· 7	10
Conflicting Flows	209	
Potential Capacity	763	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.99
Maj. L, Min T Adj. Imp Factor.		0.99
Cap. Adj. factor due to Impeding mvmnt	0.99	0.98
Movement Capacity	754	

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
Part 1 - First Stage		
Conflicting Flows		•
Potential Capacity	811	762
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.99
Movement Capacity	811	753
Probability of Queue free St.	1.00	1.00
Part 2 - Second Stage		· ·
Conflicting Flows		
Potential Capacity	762	775
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.99	1.00
Movement Capacity	753	775

Part 3 - Single Stage Conflicting Flows

Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.99	0.99
Movement Capacity		
Result for 2 stage process:		
a	0.95	0.95
У		
Ct		
Probability of Queue free St.	1.00	1.00
	· · · · · ·	
Step 4: LT from Minor St.	7	10
Part 1 - First Stage	100	
Conflicting Flows	. 107	0.4.0
Potential Capacity	909	849
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.99
Movement Capacity	909	839
Part 2 - Second Stage	· · · · · · · · · · · · · · · · · · ·	
Conflicting Flows	102	
Potential Capacity	914	969
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mymnt	0.99	0.99
Movement Capacity	903	961
	505	
Part 3 - Single Stage	· ·	· · ·
Conflicting Flows	209	
Potential Capacity	763	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.99
Maj. L, Min T Adj. Imp Factor.		0.99
Cap. Adj. factor due to Impeding mvmnt	0.99	0.98
Movement Capacity	754	
		······································
Results for Two-stage process:		*
a	0.95	0.95
У	1.04	
Ct	812	
•		

Worksheet 8-Shared Lane Calculations

Movement	7	8	9	10	11	12	
	L	т	R	\mathbf{L}	Т	R	
Volume (vph)	70		8				~~
Movement Capacity (vph) Shared Lane Capacity (vph)	812		1016				

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7	8	9	10	11	12
	\mathbf{L}	Т	R	L,	т	R
C sep	812		1016			
Volume	70		8.			
Delay						
Q sep						

Q sep +1 round (Qsep +1) n max C sh SUM C sep n C act

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	-12	
Lane Config		\mathbf{L}	L		R				
v (vph)		17	70						
C(m) (vph)		1411	812		1016				
v/c		0.01	0.09		0.01				
95% queue length		0.04	0.28		0.02				
Control Delay		7.6	9.9		8.6				
LOS		А	А		A '				
Approach Delay				9.7					
Approach LOS				А					

Worksheet 11-Shared Major LT Impedance and Delay

Movement 2Movement 5p(oj)1.000.99v(i1), Volume for stream 2 or 51.000.99v(i2), Volume for stream 3 or 655s(i1), Saturation flow rate for stream 2 or 556p*(oj)0.997.6d(M,LT), Delay for stream 1 or 47.6N, Number of major street through lanes7.6d(rank, 1) Delay for stream 2 or 55

HCS+: Signalized Intersections Release 5.3

Analyst: KHAInter.: U.S. 19 & CR 40Agency: KHAArea Type: All other areasDate: 12/8/2008Jurisd: FDOT District 2Period: P.M. Peak HourYear : 2008 Existing Traffic CondsProject ID: Levy County Advanced ReactorE/W St: CR 40/Follow That Dream PkwyN/S St: U.S. 19

					RSECTI							
	Eastbo	ound	1	oound		Nort	hbour	nd	Sou	ithbou	ınd	1
	L T	R		r R		L	Т	R	\mathbf{L}	т	R	
No. Lanes	0 1	1	0	1 1	······	1	2	0	1	2	0	-
LGConfig	j I	LT R		\mathbf{LT}	R I		TR	İ	Ľ	TR		i
Volume	21 61	71	61 52	2 44	10	06 2	236 9	€1	45	208	13	Ì
Lane Width	j 12.	.0 12.0	12	2.0 12	.0 12	2.0 1	12.0	İ	12.0	12.0		i
RTOR Vol		24		19	Ì			33 İ			5	ł
Duration	0.25	Area	Type: A		er are							
Phase Combi	.nation 1	2	33	4	acioi	15	5	6	7		3	
EB Left	А			i	NB Le	eft	А					
Thru	А			į	Tł	nru		А				
Right	А			1	Ri	ight		А				
Peds				i		eds						
WB Left	A			ĺ	SB Le	eft	А				•	
Thru	A					hru		А				
Right	A					ight		A				
Peds						eds						
NB Right						ight						
SB Right						ight						
Green	10	. 0		I		- 9 0	10.0	25.0)			
Yellow	4.0						4.0	4.0				
All Red	1.0						1.0	1.0				
								le Ler	gth:	60.0	se	ecs
		Interse					-					
Appr/ Lar		Adj Sat	Rat	LOS	Lέ	ane (Group	Apr	proach	n		
Lane Gro	-	low Rate			_							
Grp Cap	pacity	(s)	v/c	g/C	D/			D - 1 -		3		
			v/C	9,0		elay	LOS	Dere	ay LO:	5		
Eastbound					D	elay 	LOS	Dera	ay LO:			
	19	1684							-			
LT 30		1684 1583	0.28	0.18	3 2:	1.6	C C	21.4	-			
LT 30 R 29		1684 1583			3 2:		С		-			
LT 30	90 2		0.28	0.18	3 2: 3 20	1.6	С		4 C			
LT 30 R 29 Westbound LT 26	90 <u>-</u> 58 :	1583	0.28	0.18	3 2: 3 2(3 2)	1.6	C C	21.4	4 C			
LT 30 R 29 Westbound LT 26 R 29	90 <u>-</u> 58 :	1583 1460	0.28 0.17 0.45	0.18	3 2: 3 2(3 2)	1.6 0.9 3.0	C C C	21.4	4 C			
LT 30 R 29 Westbound LT 26 R 29 Worthbound	58 1 50 1	1583 1460	0.28 0.17 0.45	0.18	3 2: 3 20 3 2: 3 2: 3 2:	1.6 0.9 3.0 0.5	C C C	21.4	4 C			
LT 30 R 29 Westbound LT 26 R 29 Northbound L 32	90 : 58 : 90 : 21 :	1583 1460 1583	0.28 0.17 0.45 0.09	0.18 0.18 0.18 0.18	3 2: 3 20 3 2: 3 2: 3 2: 3 2: 3 2:	1.6 0.9 3.0	с с с с	21.4	4 C			
LT 30 R 29 Westbound LT 26 R 29 Northbound L 32 IR 14	90 : 58 : 90 : 21 :	1583 1460 1583 1752	0.28 0.17 0.45 0.09 0.35	0.18 0.18 0.18 0.18 0.18	3 2: 3 20 3 2: 3 2: 3 2: 3 2: 3 2:	1.6 0.9 3.0 0.5 2.1	с с с с	21.4	4 C			
LT 30 R 29 Westbound LT 26 R 29 Northbound L 32 TR 14 Southbound	90 1 58 1 90 1 21 1 177 1	1583 1460 1583 1752	0.28 0.17 0.45 0.09 0.35 0.21	0.18 0.18 0.18 0.18 0.18	3 23 3 20 3 20 3 20 3 20 3 20 3 20 3 20	1.6 0.9 3.0 0.5 2.1	с с с с	21.4	4 C			
LT 30 R 29 Westbound LT 26 R 29 Northbound L 32 TR 14 Southbound L 32	90 1 58 1 90 1 21 1 477 1 21 1	1583 1460 1583 1752 3408	0.28 0.17 0.45 0.09 0.35	0.18 0.18 0.18 0.18 0.18 0.18	3 23 3 20 3 20 3 20 3 20 3 20 3 20 3 20	1.6 0.9 3.0 0.5 2.1 0.7	C C C C B	21.4	4 С 5 С 7 В			

HCS+: Signalized Intersections Release 5.3

Phone: E-Mail: Fax:

____OPERATIONAL ANALYSIS_ Analyst: KHA Agency/Co.: KHA Date Performed: 12/8/2008 Analysis Time Period: P.M. Peak Hour U.S. 19 & CR 40 Intersection: Area Type: All other areas Jurisdiction: FDOT District 2 Analysis Year: 2008 Existing Traffic Conds Project ID: Levy County Advanced Reactor E/W St: CR 40/Follow That Dream Pkwy N/S St: U.S. 19

____VOLUME DATA_

	Eas	stbour	nđ	Wes	stbour	nd	Noi	rthboi	und	Sot	ıthboı	ınd
	L	т	R	L 	т	R	L	т	R	L	т	R
Volume	21	61	71	61	52	44	106	236	91	45	208	13
% Heavy Veh	2	2	2	2	2	2	3	3	3	3	3	3
PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PK 15 Vol	6	16	19	16	14	12	28	63	24	12	55	4
Hi Ln Vol										İ		
% Grade		0		ĺ	0		İ	0		i	0	
Ideal Sat		1900	1900	ĺ	1900	1900	1900	1900		1900	1900	
ParkExist				İ			1					
NumPark	1			ĺ			1					
No. Lanes	0	1	1	j o	1	1	1	2	0	1	2	0
LGConfig		\mathbf{LT}	R	ĺ	$_{ m LT}$	R	L	TR		L	TR	
Lane Width	l	12.0	12.0	ĺ	12.0	12.0	12.0	12.0		12.0	12.0	
RTOR Vol			24	ĺ		19	İ		33			5
Adj Flow		87	50	İ	120	27	113	313		48	230	
%InSharedLn				İ			İ					
Prop LTs		0.25	53	j.	0.54	42	1	0.0	00	İ.	0.0	00
Prop RTs	0	.000	1.000	0.	.000	1.000	i o	.198		j o	.039	
Peds Bikes	0			i o			j oʻ			i o		
Buses	ł	0	0	1	0	0	0	0		0	0	
%InProtPhase	2			1			Í			İ		
Duration	0.25		Area '	Type:	A11 (other .	areas					

	Eas	stbou	nd	Westbound			No	rthbou	Southbound			
	\mathbf{L}	Т	R	L	т	R	L	Т	R	L	т	R
Init Unmet		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Arriv. Type		3	3	1	3	3	3	3		3	3	1
Unit Ext.		3.0	3.0	İ	3.0	3.0	3.0	3.0		3.0	3.0	İ
I Factor		1.00	0	İ	1.00	0		1.000			1.000	İ
Lost Time		2.0	2.0	j ,	2.0	2.0	2.0	2.0		2.0	2.0	İ
Ext of g		3.0	3.0	İ	3.0	3.0	3.0	3.0		3.0	3.0	ĺ
Ped Min g		3.2		i	3.2		İ	3.2			3.2	ĺ

__OPERATING PARAMETERS_

Phase Combina	tion 1	2	3	4			5	6	7	8
EB Left Thru Right Peds	A A A				NB	Left Thru Right Peds	A	A A		
WB Left Thru Right Peds	A A A				SB	Left Thru Right Peds	A	A A		
NB Right					EB	Right				
SB Right					WB	Right				
Green Yellow All Red	10.0 4.0 1.0			I	I		10.0 4.0 1.0	25.0 4.0 1.0		

Cycle Length: 60.0 secs

VOLU	ME ADJUS	TMENT AND	SATURATION	FLOW	WORKSHEET	
stment						

	Eas	stbou	nd	We	stbour	nd	No:	rthbou	und	Soi	lthbou	und
	L	т	R	Ľ	Т	R	L	т	R	L	т	R
Volume, V	21	61	71	61	52	44	106	236	91	45	208	13
PHF	094	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj flow	22	65	50	65	55	27	113	251	62	48	221	9
No. Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Lane group	ĺ	LT	R	İ	\mathbf{LT}	R	L ·	TR		L	TR	
Adj flow		87	50	İ	120	27	113	313		48	230	
Prop LTs	İ	0.2	53	i	0.54	42	İ	0.0	00		0.0	00
Prop RTs	i o	.000	1.000	i o	.000	1.000	i o	.198		i o	.039	

Saturatio							-	factors)	<u>.</u>
	Eastbound						Sout		
LG	LT	R .			L		\mathbf{L}	TR	
So	1900	1900	1900	1900	1900	1900	1900	1900	
Lanes O	1	1 0	1	1	1	2 0	1	2 0	
fW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
f HV	0.980	0.980	0.980	0.980	0.971	0.971	0.971	0.971	
fG	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
fP	1.000					1.000		1.000	
fBB	1.000	1.000				1.000		1.000	
fA	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
flu	1.000	1.000	1.000					0.952	
fRT			1.000					0.994	
fLT	0.904					1.000		1.000	
Sec.									
fLpb	1.000		1.000		1.000	1.000	1.000	1.000	
fRpb		1.000	1.000			1.000		1.000	
s	1684			1583		3408		3492	
Sec.									
		(CAPACITY A	ND LOS	WORKSI	неет			
Capacity	Analysis		e Group Ca					·····	-
		Adj				Green	Lane G		
Appr/	Lane	-	ate Flow					-	
Mvmt	Group	(v)				(g/C)	(c)	Ratio	
141111	Group.	(• /	(5	,	(v / 5 /	(g/c/	(0)	nacio	

Critical Control D Appr/ R Lane Grp v/c Eastbound LT 0.28 R 0.17 Westbound LT 0.45 R 0.09 Northboun	elay and atios g/C 0.18 0.18 0.18 0.18 d 0.18 d 0.18 0.18	d LOS 1 Unf Del d1 21.1 20.7	Determi Prog Adj Fact	inatio: Lane Grp Cap 309 290 268 290 321	n Incre Facto k	r	ntal Del d2 0.5 0.3	<pre>= (Yc Res Del d3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0</pre>	Lane	Group Y LOS	0.30 Approx Delay 21.4 22.5 13.7	
Critical Control D Appr/ R Lane Grp v/c Eastbound LT 0.28 R 0.17 Westbound LT 0.45 R 0.09 Northboun L 0.35	elay and atios g/C 0.18 0.18 0.18 0.18 d 0.18	d LOS 1 Unf Del d1 21.1 20.7 21.8 20.4 21.4	Determi Prog Adj Fact 1.000 1.000 1.000 1.000 1.000	inatio: Lane Grp Cap 309 290 268 290 321	n Facto k 0.11 0.11 0.11 0.11 0.11	r	ntal Del d2 0.5 0.3 1.2 0.1 0.7	Res Del d3 0.0 0.0 0.0 0.0 0.0	Lane Dela 21.6 20.9 23.0 20.5 22.1	Group y LOS C C C C C	Approa Delay 21.4 22.5	LOS C
Critical Control D Appr/ R Lane Grp v/c Eastbound LT 0.28 R 0.17 Westbound LT 0.45 R 0.09	elay and atios g/C 0.18 0.18 0.18 0.18	d LOS 1 Unf Del d1 21.1 20.7 21.8	Determi Prog Adj Fact 1.000 1.000 1.000	Lane Grp Cap 309 290 268	n Incre Facto k 0.11 0.11 0.11	r	ntal Del d2 0.5 0.3 1.2	Res Del d3 0.0 0.0	Lane Dela 21.6 20.9 23.0	Group y LOS C C C	Approa Delay 21.4	C
Critical Control D Appr/ R Lane Grp v/c Eastbound LT 0.28 R 0.17 Westbound LT 0.45	elay and atios g/C 0.18 0.18 0.18	d LOS 1 Unf Del d1 21.1 20.7 21.8	Determi Prog Adj Fact 1.000 1.000 1.000	Lane Grp Cap 309 290 268	n Incre Facto k 0.11 0.11 0.11	r	ntal Del d2 0.5 0.3 1.2	Res Del d3 0.0 0.0	Lane Dela 21.6 20.9	Group y LOS C C	Approa Delay 21.4	C
Critical Control D Appr/ R Lane Grp v/c Eastbound LT 0.28 R 0.17	elay and atios g/C 0.18 0.18	d LOS 1 Unf Del d1 21.1	Determi Prog Adj Fact 1.000	ination Lane Grp Cap 309	n Facto k 0.11	me r	ntal Del d2 0.5	Res Del d3	Lane Dela	Group y LOS C	Approa Delay	LOS
Critical Control D Appr/ R Lane Grp v/c Eastbound LT 0.28	elay and atios g/C 0.18	d LOS 1 Unf Del d1 21.1	Determi Prog Adj Fact 1.000	ination Lane Grp Cap 309	n Facto k 0.11	me r	ntal Del d2 0.5	Res Del d3	Lane Dela	Group y LOS C	Approa Delay	LOS
Critical Control D Appr/ R Lane Grp v/c	elay and atios g/C	d LOS 1 Unf Del	Determi Prog Adj	inatio Lane Grp	n Incre Facto	me	ntal Del	Res Del	Lane	Group	Approa	
Critical Control D Appr/ R Lane	elay and atios	d LOS 1 Unf Del	Determi Prog Adj	inatio Lane Grp	n Incre Facto	me	ntal Del	Res Del	Lane	Group	Approa	
Critical : Control D	elay and	d Los 1	Determi	inatio	n				·····			h
unral los	c cruc l											
Thru Right Sum of flo	TR ow rations for the second s	os for			ne gro	up	0.07 s, Yc		43 um (v/	1513 s) =	0.15	<u></u>
Prot Perm	mp.	o.,	2.0	2.4	0.2		0 07	0	4.2	1 - 1 - 2	0 1 5	·
Southbound Prot Perm Left	d L	41	8	17	52		0.03	0 -	18	321	0.15	
Perm Thru Right	TR	32	13	34	08	#	0.09	0.	43	1477	0.21	
Perm Left Prot	L	12	13	17!	52	#	0.06	0.	18	321	0.35	
Right Northbound Prot	R	27		158			0.02	0.		290	0.09	
Prot Perm Left Prot Perm Thru	LT	12	20	14(50	#	0.08	0.	18	268	0.45	
Right Westbound	LT R	87 50		168 158			0.05 0.03	0. 0.		309 290	0.28 0.17	

Intersection delay = 15.6 (sec/veh) Intersection LOS = B

2008 Roadway Analysis

U.S. 19		Minimum	P.M. Peak-Hour Road	dway Traffic Volumes
	Star	ndard	Existing) Traffic
Segment	LOS	Volume [:] wo-way)*	Volume (Two-way)**	LOS
SR 121 to Project Site	В	2,800	438	А
Project Site to CR 40	В	2,800	448	A
SR 121		Minimum	P.M. Peak-Hour Road	dway Traffic Volumes
	Star	ndard	Existing	g Traffic
Segment	LOS	Volume (Two-way)*	Volume (Two-way)**	LOS
U.S. 19 to NW 27th Street	С	770	138	А
US 41		Minimum ndard		dway Traffic Volumes g Traffic
Segment	LOS	Volume (Two-way)*	Volume (Two-way)**	LOS
SE 80th Street/NW 27th Street to CR 328	С	770	370	В
CR 40	Adopted	Minimum	P.M. Peak-Hour Road	dway Traffic Volumes
		ndard		g Traffic
Segment	LOS	Volume (Two-way)*	Volume (Two-way)**	LOS
U.S. 19 to Heavy Haul Driveway	С	1,070		С

*These volumes were attained from the FDOT 2007 Generalized Level of Service Tables.

**These volumes along segments between counted intersections were estimated based upon the average of the intersection volumes counted along the segment.

APPENDIX E: Future Intersection and Roadway Analyses Worksheets

Peak Construction Workforce Traffic Conditions

HCS+: Signalized Intersections Release 5.3

Analyst: KHAInter.: U.S. 19 & Construction AccessAgency: KHAArea Type: All other areasDate: 12/11/2008Jurisd: FDOTPeriod: A.M. Peak HourYear : 2015 Peak Construction TrafficProject ID: Levy County Advanced Reactor - Heavy Haul Route 1E/W St: Construction AccessN/S St: U.S. 19

			SI	GNALIZ		INTERSE	CTION	SOLIDE					
	Eas	tbour	ıd	Wes	tboı	und	Nor	thbo	und	Sc	outhbo	ound	
	L	T	R	L	т	R	L.	т	R	L	т	R	
No. Lanes	0	0	0	2	0	1	0	2	1	2	2 2	0	
LGConfig				L		R		т	R	L	т		1
Volume				105		45		293	900	385	286		
Lane Width				12.0		12.0		12.0	12.0	12.0) 12.0)	1
RTOR Vol	İ			1		0	ĺ		0	Í			İ
Duration	0.25		Area			other Operat							
Phase Combi	ination	1	2	S10 3		4	.1005_	5	6	-	7	8	
EB Left						NB	Left						
Thru							Thru		А				
Right							Right	5	A				
Peds							Peds						
WB Left		А				SB		А					
Thru							Thru		А				
Right		А					Right		A				
Peds		~					Peds	-					
		А				EB	Right	-					
NB Right		А				WB							
						i wb	Right	_ A					
SB Right		10 0				1=	-	20	0 75	^			
SB Right Green		10.0				,	-	20.					
SB Right Green Yellow		4.0				,	-	4.0	4.0	1			
SB Right Green Yellow						,	-	4.0 1.0	4.0 1.0	- 			
SB Right Green Yellow		4.0 1.0		at i on	Dow	,		4.0 1.0 Cy	4.0 1.0 cle Le	- 	: 120	. 0	sec
SB Right Green Yellow All Red		4.0 1.0 Ir	nterse j Sat	ction		formanc	ce Sum Lane	4.0 1.0 Cy mary_	4.(1.(cle Le	- 		. 0	sec
SB Right Green Yellow All Red 		4.0 1.0 Ir Ir		Ra		formanc		4.0 1.0 Cy mary_	4.(1.(cle Le	ength		. 0	sec
SB Right Green Yellow All Red 	ne	4.0 1.0 Ir Ad_ Flow	j Sat	Ra	tio	formanc	Lane	4.0 1.0 Cy mary_	4.0 1.0 cle Le p Ap	ength	ch	. 0	sec:
SB Right Green Yellow All Red 	ne oup	4.0 1.0 Ir Ad_ Flow	j Sat v Rate	Ra	tio	formanc s	Lane	4.0 1.0 Cy mary_ Grou	4.0 1.0 cle Le p Ap	ength oproa	ch	. 0	sec
SB Right Green Yellow All Red Appr/ Lar Lane Gro Grp Cap	ne oup	4.0 1.0 Ir Ad_ Flow	j Sat v Rate	Ra	tio	formanc s	Lane	4.0 1.0 Cy mary_ Grou	4.0 1.0 cle Le p Ap	ength oproa	ch	. 0	sec
SB Right Green Yellow All Red Appr/ Lar Lane Gro Grp Cap Eastbound Westbound	ne oup pacity	4.0 1.0 Ir Ad Flow	j Sat v Rate (s)	Ra v/c	atio	formand s g/C	Lane Dela	4.0 1.0 Cy mary_ Grou Y LOS	4.0 1.0 cle Le p Ap	ength oproa	ch	. 0	sec:
SB Right Green Yellow All Red Appr/ Lar Lane Gro Grp Cap Eastbound	ne oup	4.0 1.0 Ir Ad_ Flow	j Sat v Rate (s)	Ra	atio	formanc s	Lane	4.0 1.0 Cy mary_ Grou	4.0 1.0 cle Le p Ap	ength oproa	ch	. 0	sec
SB Right Green Yellow All Red Appr/ Lar Lane Gro Grp Cap Eastbound Westbound L 31	ne oup pacity	4.0 1.0 Ir Ad Flow	j Sat v Rate (s)	Ra v/c		formand s g/C	Lane Dela	4.0 1.0 Cy mary_ Grou Y LOS	4.(1.(cle Le p Ap Del	ength oproa	ch OS	. 0	sec
SB Right Green Yellow All Red Appr/ Lar Lane Gro Grp Cap Eastbound Westbound L 31 R 47	ne pacity 15	4.0 1.0 Ir Ad_ Flow	j Sat v Rate (s)	Ra v/c		formand s g/C 0.09	Lane Delay	4.0 1.0 Cy mary_ Grou Y LOS	4.(1.(cle Le p Ap Del	ength oproa	ch OS	.0	sec
SB Right Green Yellow All Red Appr/ Lar Lane Gro Grp Car Eastbound L 31 R 47 Northbound	ne pacity 15	4.0 1.0 Ir Ad Flow 343 158 347	j Sat v Rate (s) 37 33	Ra v/c 0.35 0.10	1	formand s g/C 0.09 0.30 0.63	Lane Delay 51.8 30.4 8.9	4.0 1.0 Cy ary_ Grou Y LOS D C	4.(1.(cle Le p Ap Del	ay L	ch OS	. 0	sec
SB Right Green Yellow All Red Appr/ Lar Lane Gro Grp Car Eastbound L 31 R 47 Northbound T 22	ne pacity 15	4.0 1.0 Ir Ad Flow 343	j Sat v Rate (s) 37 33	Ra 0.35 0.10	1	formand s g/C 0.09 0.30	Lane Delay 51.8 30.4	4.0 1.0 Cy ary_ Grou Y LOS D C	4.(1.(cle Le p Ap Del 	ay L	ch os D	. 0	sec
SB Right Green Yellow All Red Appr/ Lar Lane Gro Grp Car Eastbound L 31 R 47 Northbound T 22 R 12	ne pacity 15 75 203 200	4.0 1.0 Ir Ad Flow 343 158 347	j Sat v Rate (s) 37 33	Ra v/c 0.35 0.10	1	formand s g/C 0.09 0.30 0.63	Lane Delay 51.8 30.4 8.9	4.0 1.0 Cy ary_ Grou Y LOS D C	4.(1.(cle Le p Ap Del 	ay L	ch os D	. 0	sec
SB Right Green Yellow All Red Appr/ Lar Lane Gro Grp Cap Eastbound L 31 R 47 Northbound T 22 R 12 Southbound	ne pacity 15 75 203 200	4.0 1.0 Ir Ad Flow 343 158 347	j Sat v Rate (s) 37 33 33 78 33	Ra v/c 0.35 0.10	5)	formand s g/C 0.09 0.30 0.63	Lane Delay 51.8 30.4 8.9	4.0 1.0 Cy ary_ Grou Y LOS D C	4.(1.(cle Le p Ap Del 	ay L	ch os D	. 0	sec
SB Right Green Yellow All Red Appr/ Lar Lane Gro Grp Car Eastbound L 31 R 47 Northbound T 22 R 12 Southbound L 60	ne pacity 15 75 203 200	4.0 1.0 Ir Ad Flow 343 158 347	j Sat v Rate (s) 37 33 33 33 78 33 37	Ra v/c 0.35 0.10 0.14 0.79	5 5 1	formand s g/C 0.09 0.30 0.63 0.76	Lane Delay 51.8 30.4 8.9 12.4	4.0 1.0 Cy ary_ Grou Y LOS D C A B	4.(1.(cle Le p Ap Del 	ay L	ch os D	. 0	sec

HCS+: Signalized Intersections Release 5.3

Phone: E-Mail: Fax:

_OPERATIONAL ANALYSIS____

Analyst: KHA Agency/Co.: KHA Date Performed: 12/11/2008 Analysis Time Period: A.M. Peak Hour U.S. 19 & Construction Access Intersection: Area Type: All other areas Jurisdiction: FDOT Analysis Year: 2015 Peak Construction Traffic Project ID: Levy County Advanced Reactor ~ Heavy Haul Route 1 E/W St: Construction Access N/S St: U.S. 19

_____VOLUME DATA_

	Eas	stbou	nd	Wes	tbo	unđ	No	rthbo	und	Soi	uthbou	ınd
	L	т	R	L	Т	R	L	т	R	L	т	R
Volume				105		45	•	293	900	385	286	
% Heavy Veh				2		2		4	2	2	4	
PHF				0.95		0.95		0.95	0.95	0.95	0.95	
PK 15 Vol				28		12		77	237	101	75	
Hi Ln Vol					0			0			0	
% Grade Ideal Sat				11900	U	1900		•	1900	11000	0 1900	
ParkExist				11900		1900		1900	1900	11900	1900	
NumPark										1		
No. Lanes	0	0	0	2	0	1	0	2	1	2	2	0
LGConfig	_		-	L	-	R		T	R	L L	- T	•
Lane Width				12.0		12.0		12.0	12.0	12.0	12.0	
RTOR Vol				i		0	İ		0	i		
Adj Flow				1111		47	İ	308	947	405	301	
%InSharedLn	ĺ			Ì						1		
Prop LTs								0.0	00	1	0.00	00
Prop RTs						1.000	0	.000	1.000	0	.000	
Peds Bikes	0			0			0					
Buses				0		0		0	0	0	0	
%InProtPhase	-			1		_				l		
Duration	0.25		Area	Type:	A11	other a	areas					

OPERATING PARAMETERS

	Ea	stbou	nd	We	stboi	ınd	No	orthbo	und	Sc	uthbo	und
	L	Т	R	L	Т	R	L	т	R	L	Т	R
Init Unmet				0.0		0.0		0.0	0.0	0.0	0.0	1
Arriv. Type				3		3	ì	3	3	13	3	i
Unit Ext.				3.0		3.0		3.0	3.0	3.0	3.0	i
I Factor				· ·	1.00	00	1	1.00	0	j	1.00	o i
Lost Time				2.0		2.0	İ	2.0	2.0	2.0	2.0	
Ext of g				3.0		3.0	1	3.0	3.0	3.0	3.0	
Ped Min g		3.2			3.2		Í	3.2				
					PHAS	SE DATA	·					
Phase Combin		m 1	2	3	,	1		5	6	7	,	8
Fhase Combin	IACIO	11 1	2	2	4	±		5	0			0

EB	Left Thru Right Peds		NB 	Left Thru Right Peds		A A
WB	Left Thru Right Peds	A	SB	Left Thru Right Peds	A A	A
NB	Right	A	EB	Right		
SB	Right		WB	Right	A	
Gre Yel All		10.0 4.0 1.0	I		20.0 4.0 1.0	75.0 4.0 1.0

Cycle Length: 120.0 secs

		VOLU	ME AD	JUSTMEN	T AN	ID SATU	RATIC	N FLO	w work	SHEET		
Volume Adjus	stment	:										
	Eas	stbou	nđ	Wes	tbou	ind	j No	rthbo	und	So	uthbou	ind
	L	т	R	L	т	R	L	т	R	L	Т	R
Volume, V				105		45	 	293	900	385	286	
PHF				0.95		0.95	İ	0.95	0.95	0.95	0.95	
Adj flow	ĺ			111		47	İ	308	947	405	301	
No. Lanes	0	0	0	2	0	1	0	2	1	2	2	0
Lane group				L		R	1	т	R	L	T	
Adj flow				111		47	ł	308	947	405	301	
Prop LTs							1	0.0	00		0.00	00
Prop RTs				1		1.000	(.000	1.000	0	.000	

Saturatio	on Flow R	ate (see Exh	ibit 16-7 to	determine	the adj	ustment	t facto	ors)
	Eastboun		stbound		-			
LG		L	R	т	R	\mathbf{L}	т	
So		1900	1900	1900	1900	1900	1900	
Lanes O	0	0 2	0 1	0 2	1	2	2	0
fW		1.000	1.000	1.00	0 1.000	1.000	1.000	
fHV		0.980	0.980	0.96	52 0.980	0.980	0.962	
fG		1.000	1.000	1.00	00 1.000	1.000	1.000	
fP		1.000	1.000	1.00	0 1.000	1.000	1.000	
fBB		1.000	1.000	1.00	00 1.000	1.000	1.000	
fA		1.000	1.000	1.00	00 1.000	1.000	1.000	
fLU		0.971	1.000	0.95	52 1.000	0.971	0.952	
fRT			0.850	1.00	0 0.850		1.000	
fLT		0.950		1.00	00	0.950	1.000	
Sec.								
fLpb		1.000		1.00	00	1.000	1.000	
fRpb			1.000	1.00	00 1.000		1.000	
S		3437	1583	3478	3 1583	3437	3478	
Sec.								
		CAPA	CITY AND LOS	WORKSHEET_				
Capacity	Analysis	and Lane Gr	oup Capacity					
		Adj	Adj Sat	Flow Gi	reen	Lane G	roup	
Appr/	Lane	Flow Rate	Flow Rate	Ratio Ra	atio Ca	pacity	v/c	
Mvmt	Group	(v)	(s)	(v/s) (g	g/C)	(c)	Ratic	C

Eastbound

Prot

R Jorthi	ound 0.35 0.10 bound 0.14 0.79	0.30 0.63 0.76	51.2 30.3 8.9 8.7	1.000 1.000 1.000 1.000	475 2203	0.11 0.11 0.11 0.34	0.7 0.1 0.0 3.6	0.0 0.0 0.0 0.0	51.8 30.4 8.9 12.4	D C A B	45.5	LOS D B
Lane Erp Lastbo Vestbo	ound 0.35 0.10	0.30										
ane rp astbo	ound	0.09	51.2	1.000	315	0.11	0.7	0.0	51.8	D	45.5	
ane irp					•							LOS
ane	V/C					-		-				LOS
Appr/		g/C	Del d1	Adj Fact	Grp Cap	Factor k	Del d2	Del d3	Delay	LOS	Delay	
Contro		lay an tios	Unf	Determi Prog	Lane	Increm			Lane G	roup	Approa	ach
Total	lost	time	per cy		. = 3.0	ne grou)0 sec Lo,			um (v/s		0.72 0.73	
Pe: Th: Rig		T	3	01	347	78	0.09	0.	84 2	927	0.10	
Pro Pe: Le: Pro	ot rm Et	L	4	05	343	37 #	0.12	0.	17 6	01	0.67	
		R		08 47	347 158		0.09 0.60			203 200	0.14 0.79	
Pro Per Let Pro Per	rm Et ot rm	т	2	0.0	2.4.5	7 0	0 0 0	0	63 2	202	0.14	
	rm ru ght		4	7	158	3	0.03	0.	30 4	75	0.10	
Pro Pei Lei	ound ot cm Et	L	1	11	343	7	0.03	0.	09 3	15	0.35	
Thi Riç estbo	ru											

HCS+: Unsignalized Intersections Release 5.3

_TWO-WAY STOP CONTROL SUMMARY__

Analyst: KHA Agency/Co.: KHA Date Performed: 12/11/2008 Analysis Time Period: A.M. Peak Hour U.S. 19 & Operations Access Intersection: Jurisdiction: FDOT Units: U. S. Customary 2015 Peak Construction Traffic Analysis Year: Project ID: Levy County Advanced Reactor - Heavy Haul Route 1 East/West Street: **Operations Access** U.S. 19 North/South Street: Intersection Orientation: NS Study period (hrs): 0.25 Vehicle Volumes and Adjustments Northbound Southbound Major Street: Approach 2 3 5 Movement 1 4 6 L т R \mathbf{L} т R Volume 1189 93 40 351 0.95 0.95 0.95 Peak-Hour Factor, PHF 0.95 Hourly Flow Rate, HFR 97 1251 42 369 Percent Heavy Vehicles 2 - -- -Median Type/Storage / 2 Raised curb RT Channelized? No Lanes 2 1 1 2 Configuration т R \mathbf{L} т Upstream Signal? No No Minor Street: Approach Westbound Eastbound 7 9 Movement 8 10 11 12 L т R L т R 9 Volume 4 Peak Hour Factor, PHF 0.95 0.95 9 Hourly Flow Rate, HFR 4 Percent Heavy Vehicles 2 2 Percent Grade (%) 0 0 Flared Approach: Exists?/Storage Lanes 1 1 Configuration L R Delay, Queue Length, and Level of Service Approach NB SB Westbound Eastbound Movement 1 4 7 8 9 10 11 12 Lane Config L L R 42 9 4 v (vph) 507 482 C(m) (vph) 216 0.08 0.04 0.01 v/c 95% queue length 0.27 0.13 0.03 Control Delay 12.7 22.4 12.5 LOS в С В 19.4 Approach Delay Approach LOS С

Phone: E-Mail:

Percent Blockage

Fax:

TWO-WAY STOP CONTROL (TWSC) ANALYSIS____ Analyst: KHA Agency/Co.: KHA 12/11/2008 Date Performed: Analysis Time Period: A.M. Peak Hour U.S. 19 & Operations Access Intersection: Jurisdiction: FDOT Units: U. S. Customary Analysis Year: 2015 Peak Construction Traffic Project ID: Levy County Advanced Reactor - Heavy Haul Route 1 East/West Street: Operations Access North/South Street: U.S. 19 Intersection Orientation: NS Study period (hrs): 0.25 _Vehicle Volumes and Adjustments_ 5 Major Street Movements 1 2 3 4 6 т т R \mathbf{L} R T, Volume 1189 93 40 351 0.95 0.95 0.95 Peak-Hour Factor, PHF 0.95 Peak-15 Minute Volume 313 24 11 92 369 Hourly Flow Rate, HFR 1251 97 42 Percent Heavy Vehicles - -_ _ 2 _ _ / 2 Raised curb Median Type/Storage RT Channelized? No 2 1 2 Lanes 1 т R т Configuration L Upstream Signal? No No Minor Street Movements 7 8 9 10 11 12 Τ R L T R L Volume 9 4 0.95 0.95 Peak Hour Factor, PHF Peak-15 Minute Volume 2 1 Hourly Flow Rate, HFR 9 4 2 Percent Heavy Vehicles 2 0 Percent Grade (%) 0 Flared Approach: Exists?/Storage RT Channelized? No 1 1 Lanes Configuration Г R _Pedestrian Volumes and Adjustments_ 15 Movements 13 14 16 0 0 0 0 Flow (ped/hr) Lane Width (ft) 12.0 12.0 12.0 12.0 Walking Speed (ft/sec) 4.0 4.0 4.0 4.0

0

0

0

0

	Prog. Flow vph	Sat Flow vph	Arriv Type	Т		Cycle Length sec	Prog. Speed mph	Distance to Signal feet
S2 Left-Turn Through S5 Left-Turn Through								
Worksheet 3-Dat	a for Cor	mputing	Effect	of De	lay to	Major	Street V	Vehicles
					Moveme	ent 2	Moveme	ent 5
Shared ln volum Shared ln volum Sat flow rate, Sat flow rate, Number of major Worksheet 4-Cri	e, major major th major rt street	rt veh vehicl vehicl through	icles: es: es: lanes:		Calcu	lation		
Critical Gap Ca	lculatio	n						
Movement	1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(c,base) t(c,hv) P(hv)	2.00	4.1 2.00 2	7.5 2.00 2	2.00	6.2 2.00 2) 2.00	2.00	2.00
t(c,g) Percent Grade t(3,lt)		0.00	0.20 0.00 0.70	0.20 0.00	0.10 0.00 0.00) 0.00		0.10 0.00
2-stag t(c) 1-stag		0.00 0.00 4.1	0.00 1.00 6.8	0.00 1.00	0.00			0.00
2-stag		4.1	5.8		6.2			
Follow-Up Time Movement	Calculat 1 L	ions 4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(f,base) t(f,HV) P(HV)	1.00	2.20 1.00 2	3.50 1.00 2	1.00	3.30 1.00 2		1.00	1.00
t(f)		2.2	3.5		3.3			
Worksheet 5-Eff	ect of U	pstream	ı Signal	.s				
Computation 1-Q	ueue Cle	arance	Time at		Mover	ignal ment 2 V(l,prot		ovement 5 V(1,prot)
V prog Total Saturatic	n Flow R	ate, s	(vph)					<u> </u>

Arrival Type Effective Green, g (sec) Cycle Length, C (sec) Rp (from Exhibit 16-11) Proportion vehicles arriving on green P

g(q1) g(q2) g(q)

Computation 2-	Proport:	lon of T	WSC Inte	ersectio	on Tim Movem			lovement	5
				V (t		(l,prot			prot)
alpha									
peta									
Fravel time, t	(a) (se	2)							
Smoothing Fact	or, F								
Proportion of	conflic	ing flo	w, f						
Max platooned									
Min platooned									
Duration of bl			(2)						
			(p)		0.0	0.0		0.000	
Proportion tim	e block	ea, p			0.0	00		0.000	
Computation 3-	Platoon	Event P	eriods	Rest	ılt				
p(2)				0.0					
p(5)				0.0	00				
p(dom)									
p(subo)									
Constrained or	uncons	crained?							
Broportion		<u>,-</u>					· ··		
Proportion		1.4	· ·		(2)		121		
unblocked		(1			(2)	–	(3)		
for minor			-stage			Stage Pr			
movements, p(x	.)	Proc	ess	Sta	je I		Stage I	L I	
p(1)		· · · · ·	· · · · · · · · · · · · · · · · · · ·						
p(4)									
p(7)									
p(8)									
p(9)									
p(10)									
p(11)									
p(12)									
Computation 4	and 5								· · · · · · · · · · · · · · · · · · ·
Single-Stage P	rocess								
Movement		1	4	7	8	9	10	11	12
110 1 01110		Ĺ	L	Ĺ	Ť	R	L	 T	R
		ىد	<u> </u>		۲			1	
V c,x			1348	1519		626			
S									
Px									
V c,u,x									
 C r,x									,
C plat,x									
Two-Stage Proc	ess							<u>.</u> .	
	Q+-, 1	7	05. 1	8	2 21	10		1: Chorol	
	Stage1	Stage2	Stage1	Stage	z Sta	agel St	age2	Stage1	Stage2
V(c,x)	1251	268		•••••••••••••••••••••••••••••••••••••••					
S		3000							
P(x)									
V(c,u,x)									
v(C, u, A)									

C(plat,x)

Worksheet 6-Impedance and Capacity Equations

Step 1: RT from Minor St.	9	12
Conflicting Flows	626	
Potential Capacity	482	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	482	
Probability of Queue free St.	0.99	1.00
Step 2: LT from Major St.	4	1
Conflicting Flows	1348	
Potential Capacity	507	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	507	
Probability of Queue free St.	0.92	1.00
Maj L-Shared Prob Q free St.		
Step 3: TH from Minor St.	8	11
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.92	0.92
Movement Capacity		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Conflicting Flows	1519	
Potential Capacity	110	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.92
Maj. L, Min T Adj. Imp Factor.		0.94
Cap. Adj. factor due to Impeding mvmnt	0.92	0.93
Movement Capacity	101	

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
Part 1 - First Stage		
Conflicting Flows		
Potential Capacity	246	573
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.92
Movement Capacity	246	526
Probability of Queue free St.	1.00	1.00
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity	573	221
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.92	1.00
Movement Capacity	526	221

Part 3 - Single Stage Conflicting Flows

Potential Capacity Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt Movement Capacity	0.92	0.92
Result for 2 stage process:		
a	0.95	0.95
У		
Ct Statistic Constant	1 00	1 00
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Part 1 - First Stage		
Conflicting Flows	1251	
Potential Capacity	233	613
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.92
Movement Capacity	233	562
Part 2 - Second Stage		
Conflicting Flows	268	
Potential Capacity	753	501
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.92	0.99
Movement Capacity	691	497
Part 3 - Single Stage		
Conflicting Flows	1519	
Potential Capacity	110	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.92
Maj. L, Min T Adj. Imp Factor.	•	0.94
Cap. Adj. factor due to Impeding mvmnt	0.92	0.93
Movement Capacity	101	
Results for Two-stage process:		
a	0.95	0.95
У	0.22	
Ct	216	

Worksheet 8-Shared Lane Calculations

Movement	7	8	9	10	11	12
	${\tt L}$	Τ.	R	L .	Т	R
Volume (vph)	. 9		4		·····	······
Movement Capacity (vph) Shared Lane Capacity (vph)	216		482			

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	. 7	8	9	10	11	12
	L	т	R	L	т	R
C sep	216		482			
Volume	9		4			
Delay						
Q sep						
Q sep +1						

round (Qsep +1)

n max C sh SUM C sep n C act

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12	
Lane Config		L	L		R				
v (vph)		42	9		4				
C(m) (vph)		507	216		482				
v/c		0.08	0.04		0.01				
95% queue length		0.27	0.13		0.03				
Control Delay		12.7	22.4		12.5				
LOS		в	С		в				
Approach Delay				19.4					
Approach LOS				С					

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	0.92
v(il), Volume for stream 2 or 5		
v(i2), Volume for stream 3 or 6		
s(il), Saturation flow rate for stream 2 or 5		
s(i2), Saturation flow rate for stream 3 or 6		
P*(oj)		
d(M,LT), Delay for stream 1 or 4		12.7
N, Number of major street through lanes		
d(rank,1) Delay for stream 2 or 5		

_TWO-WAY STOP CONTROL SUMMARY___

Analyst: KHA Agency/Co.: KHA Date Performed: 12/15/2008 Analysis Time Period: A.M. Peak Hour Intersection: CR 40 & Heavy Haul Driveway Jurisdiction: Levy County Units: U. S. Customary 2015 Peak Construction Traffic Analysis Year: Project ID: Levy County Advanced Reactor - Heavy Haul Route 1 CR 40 East/West Street: North/South Street: Heavy Haul Driveway Intersection Orientation: EW Study period (hrs): 0.25 _Vehicle Volumes and Adjustments_ Major Street: Approach Eastbound Westbound

hajor bureet. Approach	Lascoound				Westbound			
Movement	1	2	3	1	4	5.	6	
	L	Т	R	İ	L	т	R	
Volume	0	72	0		0	119	0	
Peak-Hour Factor, PHF	0.95	0.95	0.95		0.95	0.95	0.95	
Hourly Flow Rate, HFR	0	75	0		0	125	0	
Percent Heavy Vehicles	100				100			
Median Type/Storage	Undivi	ded			/			
RT Channelized?			No					
Lanes	0	1 1			0	1	0	
Configuration	LT	R			LT	R		
Upstream Signal?		No				No		
Minor Street: Approach	Northbound				Sou	thboun	d	
Movement	7	8	9	1	10	11	12	
	L	T	R	Ì	L	Т	R	
Jolume	0	15	0		0	1	0	
Peak Hour Factor, PHF	0.95	0.95	0.95		0.95	0.95	0.95	
Hourly Flow Rate, HFR	0	15	0		0	1	0	
	100	100	100		100	100	100	
Percent Heavy Vehicles	100	100	TOO		100	100		
-	100	0	100		100	0	200	
Percent Grade (%)			No	/	100		No	1
Percent Heavy Vehicles Percent Grade (%) Flared Approach: Exists?/S Lanes			No	1	0	0		/

	Delay,	Queue Le	ngth, and Le	vel of	Service		
Approach	EB	WB	Northbou	nd	Sc	outhbound	£
Movement	1	4	7 8	9	10	11	12
Lane Config	\mathbf{LT}	LTR	LTR		ĺ	LTR	:
v (vph)	0	0	15			1.	
C(m) (vph)	1026	1078	553			553	
v/c	0.00	0.00	0.03			0.00	
95% queue length	0.00	0.00	0.08			0.01	
Control Delay	8.5	8.3	11.7			11.5	
LOS	А	А	В			в	
Approach Delay			11.7			11.5	
Approach LOS			В			В	

Phone: E-Mail: Fax:

___TWO-WAY STOP CONTROL(TWSC) ANALYSIS___

Analyst:	КНА			
-	KHA			
Date Performed:	12/15/2008			
Analysis Time Period:	A.M. Peak Hour			
Intersection:	CR 40 & Heavy Haul Dri	veway		
Jurisdiction:	Levy County			
Units: U. S. Customary	<i>I</i>			
Analysis Year:	2015 Peak Construction	Traffic		
Project ID: Levy Cour	nty Advanced Reactor - 1	Heavy Haul Rou	ite 1	
East/West Street:	CR 40			
North/South Street:	Heavy Haul Driveway			
Intersection Orientat:	ion: EW	Study period	(hrs):	0.25

	_Vehicle V	olumes	s and Adj	justment	.s		
Major Street Movements	1	2	3	4	5	6	
	L	Т	R	L	Т	R	
Volume	0	72	0	0	119	0	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Peak-15 Minute Volume	0	19	0	0	31	0	
Hourly Flow Rate, HFR	0	75	0	0	125	0	
Percent Heavy Vehicles	100			100			
Median Type/Storage	Undiv	ided		1			
RT Channelized?			No				
Lanes	0	1	1	0	1	0	
Configuration	LI	' I	3	\mathbf{L}'	ГR		
Upstream Signal?		No			No		
Minor Street Movements	7	8	9	10	11	12	
	L	Т	R	L	Т	R	
Volume	0	15	0	0	1	0	
Peak Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Peak-15 Minute Volume	0	4	0	0	0	0	
Hourly Flow Rate, HFR	0	15	0	0	1	0	
Percent Heavy Vehicles	100	100	100	100	100	100	
		200					
Percent Grade (%)		0	-	2.00	0	200	
Percent Grade (%) Flared Approach: Exist: RT Channelized?		0	No	/		No	1
Flared Approach: Exists		0	No 0.	/ 0			/

Pede	estrian Vo	olumes .	and Adjı	ustments	
Movements	13,	14	15	16	
Flow (ped/hr)	0	0	0	0	
Lane Width (ft)	12.0	12.0	12.0	12.0	
Walking Speed (ft/sec)	4.0	4.0	4.0	4.0	
Percent Blockage	0	0	0	0	

	Prog. Flow vph	Sat Flow vph	Arrival Type	Green Time sec	Cycle Length sec	Prog. Speed mph	Distance to Signal feet
2 Left-Turn Through	·····						· · · · · · · · · · · · · · · · · · ·
5 Left-Turn Through					•2		

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

	Movement 2	Movement 5
Shared ln volume, major th vehicles:	75	125
Shared ln volume, major rt vehicles:	0	0
Sat flow rate, major th vehicles:	1700	1700
Sat flow rate, major rt vehicles:	1700	1700
Number of major street through lanes:	1	1

Worksheet 4-Critical Gap and Follow-up Time Calculation

tion 4 L	7	0				
	7	~				
т		8	9	10	11	12
L.	L	Т	R	L	Т	R
4.1	7.1	6.5	6.2	7.1	6.5	6.2
0 1.00	1.00	1.00	1.00	1.00	1.00	1.00
100	100	100	100	100	100	100
	0.20	0.20	0.10	0.20	0.20	0.10
	0.00	0.00	0.00	0.00	0.00	0.00
0 0.00	0.00	0.00	0.00	0.00	0.00	0.00
0 0.00	0.00	0.00	0.00	0.00	0.00	0.00
0 0.00	1.00	1.00	0.00	1.00	1.00	0.00
5.1	8.1	7.5	7.2	8.1	7.5	7.2
lations						
4	7	8	9	10	11	12
${ m L}$	${\tt L}$	Т	R	L	Т	R
0 0.90 100	3.50 0.90 100 4.4	4.00 0.90 100 4.9	3.30 0.90 100 4.2	3.50 0.90 100 4.4	4.00 0.90 100 4.9	3.30 0.90 100 4.2
	4.1 0 1.00 100 100 100 100 100 100 100	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Worksheet 5-Effect of Upstream Signals

Computation	1-Queue	Clearance	Time	at	Upstream	Signal		
					Mot	vement 2	Mov	ement 5
					V(t)	V(l,prot)	V(t)	V(l,prot)

V prog Total Saturation Flow Rate, s (vph) Arrival Type Effective Green, g (sec) Cycle Length, C (sec) Rp (from Exhibit 16-11) Proportion vehicles arriving on green P g(q1) g(q2) g(q)

Computation 2-Proport	tion of 1	WSC Int	ersect	ion Time Moveme				-
			v	ovement V(1,	Vement 5 V(1,prot)			
- 1 h								
alpha beta								
Travel time, t(a) (se	ec)							
Smoothing Factor, F								
Proportion of conflic		ow, f						
Max platooned flow, V								
Min platooned flow, N		- (m)						
Duration of blocked p Proportion time block		-101		0.0	00		0.000	
· · · · · · · · · · · · · · · · · · ·	, p							
Computation 3-Platoor	n Event l	Periods	Re	sult				
p(2)			0.	000				
p(5)			0.	000				
p(dom)								
p(subo)								
Constrained or uncons	strained	?						
Proportion								•
unblocked		1)		(2)		(3)		
for minor		e-stage	<u> </u>		tage Pr		-	
movements, p(x)	Pro	cess	St	age I		Stage I	T	
p(1)								
p(4)								
p(7)								
p(8)								
p(9)								
p(10)								
p(11) p(12)								
Computation 4 and 5								
Single-Stage Process Movement	1	· 4	7	8	9	10	11	12
MOVEMENC	L	4 L	, L	o T	R	L	T	R
			-	-			-	
Vc,x	125	75	201	200	75	207	200	125
S -								
Px								
V c,u,x								
Cr,x								
C plat,x								
Two-Stage Process			•					
	7 Stage2	Stage1	8 . Stag	e2 Sta	10 gel St	tage2 S	1: Stage1	
Stagel			· · · · · · · · · · · · · · · · · · ·					
V(c,x)	1500		1500		1!	500		1500
	1500		1500		1!	500		1500

5

C(plat, x)

Worksheet 6-Impedance and Capacity Equations Step 1: RT from Minor St. 9 12 Conflicting Flows 75 125 Potential Capacity 770 717 1.00 1.00 Pedestrian Impedance Factor Movement Capacity 770 717 1.00 1.00 Probability of Queue free St. Step 2: LT from Major St. 4 1 75 Conflicting Flows 125 1078 Potential Capacity 1026 Pedestrian Impedance Factor 1.00 1.00 Movement Capacity 1078 1026 Probability of Queue free St. 1.00 1.00 Maj L-Shared Prob Q free St. 1.00 1.00 8 11 Step 3: TH from Minor St. Conflicting Flows 200 200 Potential Capacity 553 553 Pedestrian Impedance Factor 1.00 1.00 Cap. Adj. factor due to Impeding mvmnt 1.00 1.00 Movement Capacity 553 553 0.97 1.00 Probability of Queue free St. Step 4: LT from Minor St. 7 10 Conflicting Flows 201 207 Potential Capacity 587 581 Pedestrian Impedance Factor 1.00 1.00 0.97 Maj. L, Min T Impedance factor 1.00 Maj. L, Min T Adj. Imp Factor. 1.00 0.98 Cap. Adj. factor due to Impeding mvmnt 1.00 0.98 Movement Capacity 586 569

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St. 8 11 Part 1 - First Stage Conflicting Flows Potential Capacity Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mvmnt Movement Capacity Probability of Queue free St. Part 2 - Second Stage Conflicting Flows Potential Capacity Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mvmnt Movement Capacity Part 3 - Single Stage Conflicting Flows 200 200

Potential Capacity Pedestrian Impedance Factor Cap. Adj. factor due to Impeding Movement Capacity	mvmnt	1 1	53 .00 .00 53		553 1.00 1.00 553			
Result for 2 stage process:	·						-	
a								
У								
Ct			53		553			
Probability of Queue free St.		0	.97		1.00			
Step 4: LT from Minor St.			7		1.0		_	. '
Part 1 - First Stage Conflicting Flows Potential Capacity Pedestrian Impedance Factor Cap. Adj. factor due to Impeding Movement Capacity	mvmnt						 8	
Part 2 - Second Stage							-	
Conflicting Flows								
Potential Capacity								
Pedestrian Impedance Factor								
Cap. Adj. factor due to Impeding	mvmnt							
Movement Capacity								
Part 3 - Single Stage					0.05			
Conflicting Flows			01		207			
Potential Capacity			87		581			
Pedestrian Impedance Factor			.00		1.00			
Maj. L, Min T Impedance factor			.00		0.97			
Maj. L, Min T Adj. Imp Factor.			.00		0.98			
Cap. Adj. factor due to Impeding	mvmnt		.00 86		0.98 569			
Movement Capacity		c	<u> </u>		209		_	
Results for Two-stage process:								. •
Y								
Ĉ t		5	86		569			
Worksheet 8-Shared Lane Calculat	ions							
Movement	7	8	9	10	11	12	—	
	L	T	R	L	T	R		
Volume (vph)	0	15	0	0	1	0	-	
Movement Capacity (vph)	586	553	770	569	553	717		
Shared Lane Capacity (vph)		553			553			

. .

Movement	7	8	9	10	11	12
	L	т	R	L	\mathbf{T}	R
C sep	586	553	770	569	553	717
Volume	0	15	0	0	1	0
Delay						
Q sep						
0 0 0 1						

Q sep +1 round (Qsep +1) n max C sh SUM C sep n C act

_

553

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config	LT	LTR		LTR			LTR	
v (vph)	0	0		15			1	
C(m) (vph)	1026	1078		553			553	
v/c	0.00	0.00		0.03			0.00	
95% queue length	0.00	0.00		0.08			0.01	
Control Delay	8.5	8.3		11.7			11.5	
LOS	A	А		В			В	
Approach Delay				11.7			11.5	
Approach LOS				в			в	

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	1.00
v(il), Volume for stream 2 or 5	75	125
v(i2), Volume for stream 3 or 6	0	0
s(il), Saturation flow rate for stream 2 or 5	1700	1700
s(i2), Saturation flow rate for stream 3 or 6	1700	1700
P*(oj)	1.00	1.00
d(M,LT), Delay for stream 1 or 4	8.5	8.3
N, Number of major street through lanes	1	1
d(rank,1) Delay for stream 2 or 5	0.0	0.0

TWO-WAY STOP CONTROL SUMMARY_ Analyst: KHA KHA Agency/Co.: Date Performed: 12/8/2008 Analysis Time Period: P.M. Peak Hour Intersection: U.S. 19 & SR 121 Jurisdiction: FDOT District 2 Units: U. S. Customary 2015 Peak Construction Traffic Analysis Year: Project ID: Levy County Advanced Reactor - Heavy Haul Route 1 SR 121 East/West Street: North/South Street: U.S. 19 Study period (hrs): 0.25 Intersection Orientation: NS _Vehicle Volumes and Adjustments_ Major Street: Approach Northbound Southbound 2 5 6 Movement 1 3 4 L т т R R L Volume 192 416 20 170 Peak-Hour Factor, PHF 0.97 0.97 0.97 0.97 197 428 20 175 Hourly Flow Rate, HFR Δ۰ Percent Heavy Vehicles _ ~ - -- -~ ~ / 2 Median Type/Storage Raised curb RT Channelized? ŇΟ Lanes 2 1 1 2 Configuration т R т L Upstream Signal? NO No Westbound Eastbound Minor Street: Approach 7 Movement 8 9 10 11 12 L т R т R L Volume 121 9 0.97 0.97 Peak Hour Factor, PHF 124 Hourly Flow Rate, HFR 9 1 Percent Heavy Vehicles 1 0 Percent Grade (%) 0 Flared Approach: Exists?/Storage Lanes 1 1 Configuration \mathbf{L} R Delay, Queue Length, and Level of Service Westbound Eastbound NB SBApproach 4 7 9 10 12 Movement 1 8 11 Lane Config L L R 9 20 v (vph) 124 960 C(m) (vph) 939 . 732 v/c 0.02 0.17 0.01 0.07 0.61 0.03 95% queue length

8.9

А

10.9

В

8.8

А

10.8

в

Control Delay

Approach Delay

Approach LOS

LOS

Phone: E-Mail:

Percent Blockage

0

0

0

0

Fax:

E-Mail: TWO-WAY STOP CONTROL(TWSC) ANALYSIS____ Analyst: KHA Agency/Co.: KHA Date Performed: 12/8/2008 Analysis Time Period: P.M. Peak Hour Intersection: U.S. 19 & SR 121 Jurisdiction: FDOT District 2 Units: U. S. Customary 2015 Peak Construction Traffic Analysis Year: Project ID: Levy County Advanced Reactor - Heavy Haul Route 1 East/West Street: SR 121 North/South Street: U.S. 19 Intersection Orientation: NS Study period (hrs): 0.25 _Vehicle Volumes and Adjustments Major Street Movements 1 2 3 4 5 6 \mathbf{L} т R L т R Volume 192 416 20 170 Peak-Hour Factor, PHF 0.97 0.97 0.97 0.97 Peak-15 Minute Volume 49 107 5 44Hourly Flow Rate, HFR 197 428 175 20 Percent Heavy Vehicles ____ - -4 - --Median Type/Storage / 2 Raised curb RT Channelized? No Lanes 2 1 1 2 Configuration т R \mathbf{T} L Upstream Signal? No No Minor Street Movements 7 9 8 10 11 12 R L Т T. T R Volume 121 9 Peak Hour Factor, PHF 0.97 0.97 Peak-15 Minute Volume 31 2 Hourly Flow Rate, HFR 124 9 Percent Heavy Vehicles 1 1 Percent Grade (%) 0 Ω Flared Approach: Exists?/Storage RT Channelized? No Lanes 1 1 Configuration L R _Pedestrian Volumes and Adjustments_ Movements 13 14 15 16 Flow (ped/hr) 0 0 0 0 Lane Width (ft) 12.0 12.0 12.0 12.0 Walking Speed (ft/sec) 4.0 4.0 4.0 4.0

	2	Prog. Flow vph	Sat Flow Vph	Arriv Type	т	reen Lme ec	Cycle Length sec	Prog. Speed mph	Distance to Signal feet
S2 Left-									,
Throu S5 Left-	-Turn								
Throu	1gh 			<u>,</u>				-	
Worksheet	: 3-Data	for Co	omputing	Effect	of De	lay to	o Major	Street V	Vehicles
					1	Moveme	ent 2	Moveme	ent 5
Shared lr	n volume	, majoı	th veh	icles:					<u></u>
Shared lr									
Sat flow	rate, ma	ajor th	n vehicl	es:					
Sat flow									
Number of	E major s	street	through	lanes:					
		· · · · · · · · · · · · · · · · · · ·				÷			
Worksheet	- A-Crit		an and E		n Time	Calc	lation		
Worksheet	t 4-Crit	ical Ga	ap and F	ollow-u	ıp Time	Calcu	ulation		·····
Critical		culatio	- on				·		
Critical		culatio	- on 4	7	8	9	10	11	12
Worksheet Critical Movement		culatio	- on				·	11 T	12 R
Critical	Gap Calo	culatio	- on 4	7	8	9	10 L		
Critical Movement	Gap Calo	culatio	on 4 L	7 L	8	9 R	10 L	Т	
Critical Movement	Gap Calo	culatio 1 L	2 2 4 L 4.1	7 L 7.5	8 T	9 R 6.2	10 L	Т	R
Critical Movement t(c,base) t(c,hv)	Gap Calo	culatio 1 L	2 0n 4 L 4.1 2.00	7 L 7.5 2.00	8 T	9 R 6.2 2.00	10 L 0 2.00	T 2.00	R
Critical Movement t(c,base) t(c,hv) P(hv)	Gap Calo	culatio 1 L	2 0n 4 L 4.1 2.00	7 L 7.5 2.00 1	8 T 2.00	9 R 6.2 2.00	10 L 0 2.00 0 0.20	T 2.00 0.20	R 2.00
Critical Movement t(c,base) t(c,hv) P(hv) t(c,g)	Gap Calo	culatio 1 L	2 0n 4 L 4.1 2.00	7 L 7.5 2.00 1 0.20	8 T 2.00 0.20	9 R 6.2 2.00 1 0.10	10 L 0 2.00 0 0.20 0 0.00	T 2.00 0.20	R 2.00 0.10
Critical Movement t(c,base) t(c,hv) P(hv) t(c,g) Percent (Gap Calo	2.00	2 00 4 L 4.1 2.00 4	7 L 7.5 2.00 1 0.20 0.00	8 T 2.00 0.20	9 R 6.2 2.00 1 0.10 0.00	10 L 0 2.00 0 0.20 0 0.00	T 2.00 0.20 0.00	R 2.00 0.10
Critical Movement t(c,base) t(c,hv) P(hv) t(c,g) Percent (t(3,lt)	Gap Calo	Culation 1 L 2.00 0.00	2 2 4 1 2.00 4 0.00	7 L 7.5 2.00 1 0.20 0.00 0.70	8 T 2.00 0.20 0.00	9 R 6.2 2.00 1 0.10 0.00	10 L 0 2.00 0 0.20 0 0.00 0 0.00	T 2.00 0.20 0.00 0.00	R 2.00 0.10 0.00
Critical Movement t(c,base) t(c,hv) P(hv) t(c,g) Percent (t(3,lt)	Gap Calo) Grade 1-stage	Culation 1 2.00 0.00 0.00	2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7 L 7.5 2.00 1 0.20 0.00 0.70 0.00	8 T 2.00 0.20 0.00 0.00	9 R 6.2 2.00 1 0.10 0.00 0.00	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 0.00 0 1.00	T 2.00 0.20 0.00 0.00	R 2.00 0.10 0.00 0.00
Critical Movement t(c,base) t(c,hv) P(hv) t(c,g) Percent (t(3,lt) t(c,T):	Gap Calo) Grade 1-stage 2-stage	Culation 1 2.00 0.00 0.00	2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7 L 7.5 2.00 1 0.20 0.00 0.70 0.00 1.00	8 T 2.00 0.20 0.00 0.00	9 R 6.2 2.00 1 0.10 0.00 0.00 0.00	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 0.00 0 1.00	T 2.00 0.20 0.00 0.00	R 2.00 0.10 0.00 0.00
Critical Movement t(c,base) t(c,hv) P(hv) t(c,g) Percent (t(3,lt) t(c,T): t(c) Follow-U	Gap Calo Grade 1-stage 2-stage 1-stage 2-stage	2.00 0.00 0.00	Dn 4 L 4.1 2.00 4 0.00 0.00 0.00 4.2 4.2 4.2 tions	7 L 7.5 2.00 1 0.20 0.00 0.70 0.00 1.00 6.8 5.8	8 T 2.00 0.20 0.00 0.00 1.00	9 R 6.2 2.00 1 0.10 0.00 0.00 6.2 6.2	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 0.00 0 1.00	T 2.00 0.20 0.00 0.00 1.00	R 2.00 0.10 0.00 0.00 0.00
Critical Movement t(c,base) t(c,hv) P(hv) t(c,g) Percent (t(3,lt) t(c,T): t(c)	Gap Calo Grade 1-stage 2-stage 1-stage 2-stage	culatio 1 L 2.00 0.00 0.00 0.00	Dn 4 L 4.1 2.00 4 0.00 0.00 0.00 4.2 4.2 4.2 tions 4	7 L 7.5 2.00 1 0.20 0.00 0.70 0.00 1.00 6.8 5.8	8 T 2.00 0.20 0.00 1.00	9 R 6.2 2.00 1 0.10 0.00 0.00 6.2 6.2 9	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 1.00 10	T 2.00 0.20 0.00 1.00	R 2.00 0.10 0.00 0.00 0.00
Critical Movement t(c,base) t(c,hv) P(hv) t(c,g) Percent (t(3,lt) t(c,T): t(c) Follow-U	Gap Calo Grade 1-stage 2-stage 1-stage 2-stage	2.00 0.00 0.00	Dn 4 L 4.1 2.00 4 0.00 0.00 0.00 4.2 4.2 4.2 tions	7 L 7.5 2.00 1 0.20 0.00 0.70 0.00 1.00 6.8 5.8	8 T 2.00 0.20 0.00 0.00 1.00	9 R 6.2 2.00 1 0.10 0.00 0.00 6.2 6.2	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 0.00 0 1.00	T 2.00 0.20 0.00 0.00 1.00	R 2.00 0.10 0.00 0.00 0.00
Critical Movement t(c,base) t(c,hv) P(hv) t(c,g) Percent (t(3,lt) t(c,T): t(c) Follow-U	Gap Calo Grade 1-stage 2-stage 2-stage 2-stage 0 Time Ca	culatio 1 L 2.00 0.00 0.00 0.00	Dn 4 L 4.1 2.00 4 0.00 0.00 0.00 4.2 4.2 4.2 tions 4	7 L 7.5 2.00 1 0.20 0.00 0.70 0.00 1.00 6.8 5.8	8 T 2.00 0.20 0.00 1.00	9 R 6.2 2.00 1 0.10 0.00 0.00 6.2 6.2 9	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 1.00 1.00 10 L	T 2.00 0.20 0.00 1.00	R 2.00 0.10 0.00 0.00 0.00
Critical Movement t(c,base) t(c,hv) P(hv) t(c,g) Percent (t(3,lt) t(c,T): t(c) Follow-Up Movement	Gap Calo Grade 1-stage 2-stage 2-stage 2-stage 0 Time Ca	culatio 1 L 2.00 0.00 0.00 0.00	Dn 4 L 4.1 2.00 4 0.00 0.00 0.00 4.2 4.2 4.2 tions 4 L	7 L 7.5 2.00 1 0.20 0.00 0.70 0.00 1.00 6.8 5.8 7 L	8 T 2.00 0.20 0.00 1.00	9 R 6.2 2.00 1 0.10 0.00 0.00 6.2 6.2 9 R	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 1.00 10 L	T 2.00 0.20 0.00 1.00 11 T	R 2.00 0.10 0.00 0.00 0.00
Critical Movement t(c,base) t(c,hv) P(hv) t(c,g) Percent (t(3,lt) t(c,T): t(c) Follow-Up Movement t(f,base	Gap Calo Grade 1-stage 2-stage 2-stage 2-stage 0 Time Ca	2.00 0.00 0.00 alculat	Dn 4 L 4.1 2.00 4 0.00 0.00 0.00 4.2 4.2 4.2 tions 4 L 2.20	7 L 7.5 2.00 1 0.20 0.00 0.70 0.00 1.00 6.8 5.8 7 L 3.50	8 T 2.00 0.20 0.00 1.00 8 T	9 R 6.2 2.00 1 0.10 0.00 0.00 6.2 6.2 9 R 3.3	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 1.00 10 L	T 2.00 0.20 0.00 1.00 11 T	R 2.00 0.10 0.00 0.00 0.00 12 R

Worksheet 5-Effect of Upstream Signals

Computation 1-Queue Clearance Time at Upstream Signal Movement 2 Movement 5 V(t) V(1,prot) V(t) V(1,prot)

V prog Total Saturation Flow Rate, s (vph) Arrival Type Effective Green, g (sec) Cycle Length, C (sec) Rp (from Exhibit 16-11) Proportion vehicles arriving on green P





.

g(q1) g(q2) g(q)

Computation 2-	1100010				Movem	ent 2	М	ovement	
	-			V	(t) V	(l,prot) V(t)	V(1,	prot)
alpha									
beta									
Travel time, t	(a) (se	2)							
Smoothing Fact	or, F								
Proportion of		ting flo	w, f						
Max platooned									
Min platooned									
Duration of bl			(n)						
Proportion tim					0.0	00		0.000	
		<u> </u>			0.0				
Computation 3-	Platoon	Event F	Periods	Rea	sult				
p(2)				0.0	000				
p(5)				0.0	000				
p(dom)									
p(subo)									
Constrained or	uncone	trained?)						
Consciatileu Of									
Proportion									
unblocked		(1			(2)		(3)		
for minor			e-stage			tage Pr	ocess		
movements, p(x	r)	Proc	cess	Sta	age I		Stage I	I.	
p(1)									
p(4)									
p(7)									
p(8)									
p(9)									
p(10)									
p(11)									
p(12)									
Computation 4	and 5								
Single-Stage H									
Movement		1	4	7	8	9	10	11	12
		L	Ĺ	L	T	R	L	T	R
	•				-			-	
V c,x			625	324		98			
S									
Px									
V c,u,x									
Cr,x				· · · ·					
C plat,x									
Two-Stage Proc	cess	_				<u></u>			
	Stagel	7 Stage2	Stage	8 1 Stag	-) -) C+-	10 2001 St	age2 S	11 Stagel	
	orager	scayez	scaye.	L DLAG			ayes s	Juager	Juaye.
V(c,x)	197	127							
S		3000							
P(x)									
V(c,u,x)									

.

C

C(plat, x)

Worksheet 6-Impedance and Capacity Equations

Step 1: RT from Minor St.	9	12
Conflicting Flows	98	· · · · · · · · · · · · · · · · · · ·
Potential Capacity	960	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	960	
Probability of Queue free St.	0.99	1.00
Step 2: LT from Major St.	4	1
Conflicting Flows	625	
Potential Capacity	939	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	939	
Probability of Queue free St.	0.98	1.00
Maj L-Shared Prob Q free St.		
Step 3: TH from Minor St.	8	11
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.98	0.98
Movement Capacity		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Conflicting Flows	324	
Potential Capacity	647	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.98
Maj. L, Min T Adj. Imp Factor.		0.98
Cap. Adj. factor due to Impeding mvmnt	0.98	0.97
Movement Capacity	633	

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
Part 1 - First Stage		· · · · · · · · · · · · · · · · · · ·
Conflicting Flows		
Potential Capacity	742	729
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.98
Movement Capacity	742	713
Probability of Queue free St.	1.00	1.00
Part 2 - Second Stage	· · · · · · · · · · · · · · · · · · ·	
Conflicting Flows		
Potential Capacity	729	480
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.98	1.00
Movement Capacity	713	480

Part 3 - Single Stage Conflicting Flows

Potential Capacity						
Pedestrian Impedance Factor			00		1.00	
Cap. Adj. factor due to Impeding mvmnt Movement Capacity		0.	98		0.98	
Result for 2 stage process:						······································
a		0.	95		0.95	
X .						
C t						
Probability of Queue free St.		1.	00		1.00	
Step 4: LT from Minor St.			7		10	·····
Part 1 - First Stage			_			
Conflicting Flows		19				
Potential Capacity		82			806	
Pedestrian Impedance Factor			00		1.00	
Cap. Adj. factor due to Impeding mvmnt			00		0.98	
Movement Capacity		82	0		789	
Part 2 - Second Stage			~			
Conflicting Flows		12			0.01	
Potential Capacity		88			921	
Pedestrian Impedance Factor			00		1.00	
Cap. Adj. factor due to Impeding mymnt		U. 86	98		0.99 912	
Movement Capacity		80	9		912	
Part 3 - Single Stage						
Conflicting Flows		32				
Potential Capacity		64				
Pedestrian Impedance Factor		1.	00		1.00	
Maj. L, Min T Impedance factor 🕐					0.98	
Maj. L, Min T Adj. Imp Factor.					0.98	
Cap. Adj. factor due to Impeding mvmnt			98		0.97	
Movement Capacity		63	13			
Results for Two-stage process:						
a			95		0.95	
Y			79			
C t .		73	32			
Worksheet 8-Shared Lane Calculations						
Movement 7			9	10	11	12
I	-		R	L	T	R
Volume (vph) 12	4		9			
	2		960			

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7	8	9	10	11	12
	${ m L}$	т	R	L	т	R
C sep	732		960			
Volume	124		9			
Delay						
Q sep						
Q sep +1						

round (Qsep +1)

n max C sh SUM C sep n C act

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config		L	L		R			
v (vph)		20	124		9			
C(m) (vph)		939	732		960			
v/c		0.02	0.17		0.01			
95% queue length		0.07	0.61		0.03	•		
Control Delay		8.9	10.9		8.8			
LOS		А	В		А			
Approach Delay				10.8				
Approach LOS				В				

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	0.98
v(il), Volume for stream 2 or 5	x	
v(i2), Volume for stream 3 or 6		
s(il), Saturation flow rate for stream 2 or 5		
s(i2), Saturation flow rate for stream 3 or 6		
P* (oj)		
d(M,LT), Delay for stream 1 or 4		8.9
N, Number of major street through lanes		
d(rank,1) Delay for stream 2 or 5	4	

Analyst: KHAInter.: U.S. 19 & CR 40Agency: KHAArea Type: All other areasDate: 12/8/2008Jurisd: FDOT District 2Period: P.M. Peak HourYear : 2015 Peak Construction TrafficProject ID: Levy County Advanced Reactor - Heavy Haul Route 1E/W St: CR 40/Follow That Dream PkwyN/S St: U.S. 19

	Eas	tbound	SIGNALIZI West	bound			thbou		So1	ithboi	und	1
	L	T R	L		х	L	т	R	L	т	R	
No. Lanes	0	1 1		1 :	 1	1	2	0	1	2	0	—
LGConfig		LT R	-	LT -	R	L	TR	•	L	TR	-	l
Volume	27	71 83		51 58	1	123	414	106	124	1209		ł
Lane Widt		12.0 12.		L2.0 12	!	12.0			1	12.0	20	ł
RTOR Vol		24		19			2010	33		1210	5	
Duration	0.25	Area	a Type: A									
Phase Com	binatior	n 1 2		1al.Ope 4	erati	lons	5	6	7		8	
EB Left		A		í	NB	Left	A					
Thru		А				Thru		А				
Right		A		i		Right		A				
Peds				i		Peds						
WB Left		А		i	SB	Left	А					
Thru		A		l l		Thru		А				
Right		А		ĺ		Right		А				
Peds				i		Peds						
NB Right				i i	EB	Right						
SB Right				1	WB	Right						
		o -		1								
Green		9.5					10.0) 25.	5			
		9.5 4.0					10.0	25.	5			
Green Yellow All Red									5			
Yellow		4.0 1.0					4.0 1.0 Cyc	4.0	-	60.0		secs
Yellow All Red	ane	4.0 1.0 Inter	section)		mance		4.0 1.0 Cyc mary_	4.0 1.0 cle Le	ngth:			secs
Yellow All Red 	ane	4.0 1.0 Inter Adj Sa	t Ra	Perfor	mance	e Summ Lane	4.0 1.0 Cyc mary_	4.0 1.0 cle Le	-			secs
Yellow All Red Appr/ L Lane G	ane roup apacity	4.0 1.0 Inter Adj Sa Flow Ra	t Ra				4.0 1.0 Cyc mary Group	4.0 1.0 cle Le: p Ap	ngth:	h 	5. J.A.T	secs
Yellow All Red Appr/ L Lane G Grp C	roup apacity	4.0 1.0 Inter Adj Sa Flow Ra	t Rai te	cios		Lane	4.0 1.0 Cyc mary Group	4.0 1.0 cle Le: p Ap	ngth: proacl	h 		secs
Yellow All Red Appr/ L Lane G Grp C Eastbound	roup apacity	4.0 1.0 Inter Adj Sa Flow Ra	t Rai te	cios		Lane	4.0 1.0 Cyc mary Group	4.0 1.0 cle Le: p Ap	ngth: proacl ay LO	h S		secs
Yellow All Red Appr/ L, Lane G Grp C Eastbound LT	roup apacity	4.0 1.0 Inter Adj Sa Flow Ra (s)	t Ra te v/c	g/C	7	Lane Delay	4.0 1.0 Cyc ary_ Group r LOS	4.0 1.0 cle Le <u>Ap</u> <u>Del</u>	ngth: proacl ay LO	h S		secs
Yellow All Red Appr/ L, Lane G Grp C Eastbound LT R	roup apacity 287 277	4.0 1.0 —Inter Adj Sa Flow Ra (s) 1640	t Ra te v/c	g/C	7	Lane Delay 22.6	4.0 1.0 Cyc Group r LOS	4.0 1.0 cle Le <u>Ap</u> <u>Del</u>	ngth: proacl ay LO	h S		secs
Yellow All Red Appr/ L, Lane G Grp C Eastbound LT R Westbound	roup apacity 287 277	4.0 1.0 —Inter Adj Sa Flow Ra (s) 1640	t Ra te v/c	g/C	7 7	Lane Delay 22.6	4.0 1.0 Cyc Group r LOS	4.0 1.0 cle Le <u>Ap</u> <u>Del</u>	ngth: proacl ay LO	h S		secs
Yellow All Red Appr/ L, Lane G Grp C Eastbound LT R Westbound LT	roup apacity 287 277	4.0 1.0 Inter Adj Sa Flow Ra (s) 1640 1583	t Ra te	g/C 0.1 0.1	7 7 7	Lane Delay 22.6 21.7	4.0 1.0 Cyc Group r LOS C C	4.0 1.0 cle Ler Del Del 22.	ngth: proacl ay LO	h S		secs
Yellow All Red Appr/ L, Lane G Grp C Eastbound LT R Westbound LT R	roup apacity 287 277 253 277	4.0 1.0 Inter Adj Sa Flow Ra (s) 1640 1583 1444	t Ra te	g/C 0.1 0.1 0.1	7 7 7	Lane Delay 22.6 21.7 25.4	4.0 1.0 Cyc Group C LOS C C	4.0 1.0 cle Ler Del Del 22.	ngth: proacl ay LO	h S		secs
Yellow All Red Appr/ L, Lane G Grp C Eastbound LT R Westbound LT R Northboun	roup apacity 287 277 253 277	4.0 1.0 Inter Adj Sa Flow Ra (s) 1640 1583 1444	t Ra te	g/C 0.1 0.1 0.1	7 7 7 7	Lane Delay 22.6 21.7 25.4	4.0 1.0 Cyc Group C LOS C C	4.0 1.0 cle Ler Del Del 22.	ngth: proacl ay LO	h S		secs
Yellow All Red Appr/ L, Lane G Grp C Eastbound LT R Westbound LT R Northboun L	roup apacity 287 277 253 277 d	4.0 1.0 Inter Adj Sa Flow Ra (s) 1640 1583 1444 1583	t Ra te	0.1 0.1 0.1	7 7 7 7 8	Lane Delay 22.6 21.7 25.4 21.2	4.0 1.0 Cyc Group C LOS C C C C	4.0 1.0 cle Ler Del Del 22.	ngth: proacl ay LO 3 C 4 C	h S		secs
Yellow All Red Appr/ L, Lane G Grp C Eastbound LT R Westbound LT R Northboun L TR	roup apacity 287 277 253 277 d 321 1516	4.0 1.0 Inter Adj Sa Flow Ra (s) 1640 1583 1444 1583 1752	t Rat te	g/C 0.1 0.1 0.1 0.1 0.1	7 7 7 7 8	Lane Delay 22.6 21.7 25.4 21.2 22.5	4.0 1.0 Cyc Group Group C C C C C C	4.0 1.0 cle Ler Del 22. 24.	ngth: proacl ay LO 3 C 4 C	h S		secs
Yellow All Red Appr/ L, Lane G Grp C Eastbound LT R Westbound LT R Northboun L TR Southboun	roup apacity 287 277 253 277 d 321 1516	4.0 1.0 Inter Adj Sa Flow Ra (s) 1640 1583 1444 1583 1752	t Rat te	g/C 0.1 0.1 0.1 0.1 0.1	7 7 7 8 4	Lane Delay 22.6 21.7 25.4 21.2 22.5	4.0 1.0 Cyc Group Group C C C C C C	4.0 1.0 cle Ler Del 22. 24.	ngth: proacl ay LO 3 C 4 C	h S		secs
Yellow All Red Appr/ L Lane G Grp C Eastbound LT R Westbound LT R Northboun L TR Southboun L	roup apacity 287 277 253 277 d 321 1516 d	4.0 1.0 Inter Adj Sa Flow Ra (s) 1640 1583 1444 1583 1752 3433	t Ra te V/c 0.37 0.23 0.56 0.15 0.41 0.34	0.1 0.1 0.1 0.1 0.1 0.1 0.1	7 7 7 8 4 8	Lane Delay 22.6 21.7 25.4 21.2 22.5 11.1	4.0 1.0 Cyc Group Group C C C C C C C C C C C C C	4.0 1.0 cle Ler Del 22. 24.	ngth: proacl ay LO 3 C 4 C 4 B	h S		secs

HCS+: Signalized Intersections Release 5.3

Phone: E-Mail: Fax:

OPERATIONAL ANALYSIS

KHA Analyst: Agency/Co.: KHA 12/8/2008 Date Performed: P.M. Peak Hour Analysis Time Period: Intersection: U.S. 19 & CR 40 Area Type: All other areas Jurisdiction: FDOT District 2 Analysis Year: 2015 Peak Construction Traffic Project ID: Levy County Advanced Reactor - Heavy Haul Route 1 E/W St: CR 40/Follow That Dream Pkwy N/S St: U.S. 19

·····		·····		V	JOLUM	E DATA			·			
	Eas	stbou	nd	Wes	stbou	nd	No:	rthbo	unđ ·	So	lthboi	und
	L	т	R	L	т	R	L	т	R	L	Т	R
Volume	27	71	83	71	61	58	123	414	106	124	1209	30
% Heavy Veh	2	2	2	2	2	2	3	3	3	3	3	3
PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PK 15 Vol Hi Ln Vol	7	19	22	19	16.	15	33	110	28	33	322	8
% Grade	İ	0		i	0		•	0		i	0	
Ideal Sat		1900	1900	ļ	1900	1900	1900	1900		1900	1900	
ParkExist NumPark												
No. Lanes	0	1	1		1	1	1 1	2	0	1	2	0
LGConfig	-	$_{\rm LT}^{-}$	R	i	LT	R	L	TR	-	L L	TR	-
Lane Width		12.0	12.0	i	12.0	12.0	1	12.0		1	12.0	
RTOR Vol	1	2210	24	i	20.0	19		10.0	33	1	20.0	5
Adj Flow	ĺ	105	63		141	41	131	518		132	1313	
%InSharedLn	İ						İ					Í
Prop LTs	Ì	0.2	76		0.5	39	İ	0.0	00	i	0.0	00 İ
Prop RTs	0	.000	1.000	j o	.000	1.000	i o	.151		j o	.021	i
Peds Bikes	0			i o			j o			j o		ļ.
Buses		0	0	İ	0	0	İo	0		0	0	
%InProtPhase	e			i			İ					
Duration	0.25		Area	Type:	A11	other	areas			,		1

____OPERATING PARAMETERS_

	Ea	istbou	nd	We	estbou	nd	No	rthbou	ind	Sc	uthbour	nd
	L	Т	R	L	Т	R	L	т	R	L	т	R
Init Unmet		0.0	0.0	. 	0.0	0.0	0.0	0.0		0.0	0.0	
Arriv. Type	ĺ	3	3	1	3	3	3	3		3	3	Í
Unit Ext.	İ	3.0	3.0	i	3.0	3.0	3.0	3.0		3.0	3.0	İ
I Factor	İ	1.00	0	ŀ	1.00	0	i ·	1.000)		1.000	i
Lost Time	ĺ	2.0	2.0	i	2.0	2.0	2.0	2.0		2.0	2.0	
Ext of g		3.0	3.0	i	3.0	3.0	3.0	3.0		3.0	3.0	i
Ped Min g	Í	3.2		İ	3.2		j	3.2			3.2	İ
					PHAS	E DATA	A					
Phase Combir	natio	on 1	2	3	4	. 1		5	6	7	8	

EB	Left Thru Right Peds	A A A	NB	Left Thru Right Peds	A	A A
WB	Left Thru Right Peds	A A A	SB	Left Thru Right Peds	A	A A
NB	Right		EB	Right		
SB	Right		WB	Right		
	en low Red	9.5 4.0 1.0	ł		10.0 4.0 1.0	25.5 4.0 1.0

Cycle Length: 60.0 secs

	vorm	ME ADJU	JSTMEI	NT ANI	SATU	RATIO	N FLO	WORK	SHEET		
tment	5										
Eas	stbour	nd	Wes	stbour	nd	No:	rthbou	ınd	Sou	ithbou	ind
L	т	R	L	т	R	L	r	R	L	т	R
27	71	83	 71	61	58	123	414	106	124	1209	30
0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			1
29	76	63	76	65	41	131	440	78	132	1286	27
0	1	1	0	1	1	1	2	0	1	2	0
	\mathbf{LT}	R	1	LT	R	L	TR		L	TR	
	105	63		141	41	131	518		132	1313	1
	0.2	76		0.53	39	1	0.0	00		0.00	00
0	.000	1.000	0	.000	1.000	0	.151		0	.021	
	Eas L 27 0.94 29 0	Eastbour L T 27 71 0.94 0.94 29 76 0 1 LT 105 0.2	Eastbound L T R 27 71 83 0.94 0.94 0.94 29 76 63 0 1 1 LT R	Eastbound Wes L T R L 27 71 83 71 0.94 0.94 0.94 0.94 29 76 63 76 0 1 1 0 LT R 105 63 0.276	tment Eastbound Westboun L T R L T 27 71 83 71 61 0.94 0.94 0.94 0.94 29 76 63 76 65 0 1 1 0 1 LT R LT 105 63 141 0.276 0.55	tment Eastbound Westbound L T R L T R 27 71 83 71 61 58 0.94 0.94 0.94 0.94 0.94 0.94 29 76 63 76 65 41 0 1 1 0 1 1 LT R LT R LT R 105 63 141 41 0.276 0.539	tment Eastbound Westbound No: L T R L 27 71 83 71 61 58 123 0.94 0.94 0.94 0.94 0.94 0.94 0.94 29 76 63 76 65 41 131 0 1 1 0 1 1 LT R LT R L 105 63 141 41 131 0.276 0.539 0.539 0	tment Eastbound Westbound Northbox L T R L T 27 71 83 71 61 58 123 414 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 29 76 63 76 65 41 131 440 0 1 1 0 1 1 2 LT R LT R L TR 105 63 141 41 131 518 0.276 0.539 0.01 0.01	Itment Eastbound Westbound Northbound L T R L T R 27 71 83 71 61 58 123 414 106 0.94 12 0 12 0	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

Saturation Flow Ra	ate (see Exh	ibit 16-7 to	determin	e the adju	stment f	actors)
Eastbound	d Wes	stbound	Northb	ound	Southb	ound
LG LT	R	LT R	L T	R	г г	'R
So 1900	1900	1900 1900	1900 19	00	1900 19	00
Lanes 0 1	1 0	1 1	1 2	0	1 2	0
fW 1.000	1.000	1.000 1.000	1.000 1.	000	1.000 1.	000
fHV 0.980	0.980	0.980 0.980	0.971 0.	971	0.971 0.	971
fG 1.000	1.000	1.000 1.000	1.000 1.	000	1.000 1.	000
fP 1.000	1.000	1.000 1.000	1.000 1.	000	1.000 1.	000
fBB 1.000	1.000	1.000 1.000	1.000 1.	.000	1.000 1.	000
fA 1.000	1.000	1.000 1.000	1.000 1.	. 000	1.000 1.	000
fLU 1.000	1.000	1.000 1.000	1.000 0.	.952	1.000 0.	952
fRT 1.000	0.850	1.000 0.850	0.	. 977	0.	997
fLT 0.880		0.775	0.950 1.	.000	0.950 1.	000
Sec.						
fLpb 1.000		1.000	1.000 1.	.000	1.000 1.	000
fRpb 1.000	1.000	1.000 1.000	1.	.000	1.	000
S 1640	1583	1444 · 1583	1752 34	133	1752 35	501
Sec.						
	CAPA	CITY AND LOS	WORKSHEE	ET		
Capacity Analysis	and Lane Gr	oup Capacity				
	Adj	Adj Sat 🗄	Flow	GreenL	ane Grou	ip
Appr/ Lane	Flow Rate	Flow Rate	Ratio	Ratio Cap	acity	v/c
Mvmt Group	(v)	(s)	(v/s)	(g/C)	(c) F	Ratio

Eastbound Prot

R 0.15 Northboun L 0.41	0.17 0.17 0.17 0.17 d 0.17 d 0.18 0.44	22.6 21.0 21.6		277 253 277 321	0.15 0.11	0.8 0.4 2.7 0.2 0.8 0.1	0.0 0.0 0.0 0.0 0.0 0.0	22.6 21.7 25.4 21.2 22.5 11.1	С С С С В	22.3 24.4 13.4	C C B
Grp v/c Eastbound LT 0.37 R 0.23 Westbound LT 0.56 R 0.15 Northboun L 0.41	0.17 0.17 0.17 0.17 0.17 d 0.18	21.3 22.6 21.0 21.6	1.000 1.000 1.000	277 253 277 321	0.11 0.15 0.11 0.11	0.4 2.7 0.2 0.8	0.0 0.0 0.0	21.7 25.4 21.2 22.5	c c c	24.4	c c
Grp v/c Eastbound LT 0.37 R 0.23 Westbound LT 0.56 R 0.15 Northboun	0.17 0.17 0.17 0.17 0.17	21.3 22.6 21.0	1.000 1.000 1.000	277 253 277	0.11 0.15 0.11	0.4 2.7 0.2	0.0	21.7 25.4 21.2	C C C		С
Grp v/c Eastbound LT 0.37 R 0.23 Westbound LT 0.56 R 0.15	0.17 0.17 0.17 0.17	21.3 22.6	1.000	277 253	0.11	0.4	0.0	21.7 25.4	c c		С
Erp v/c Eastbound T 0.37 C 0.23 Westbound T 0.56	0.17 0.17 0.17	21.3 22.6	1.000	277 253	0.11	0.4	0.0	21.7 25.4	c c		С
Eastbound T 0.37 0.23	0.17 0.17								C C	22.3	<u> </u>
Erp v/c Eastbound ET 0.37 & 0.23	0.17 0.17								C C	22.3	<u> </u>
Srp v/c Castbound T 0.37	0.17								С	22.3	<u> </u>
rp v/c	l										LOS
											LOS
ane	g/C	d1	Fact	Cap	k	d2	d3	Dela	y LOS	Delay	
	elay an atios	d LOS Unf Del	Determi Prog Adj	ination Lane Grp	n Increm Factor		Res Del	Lane	Group	Approa	ach
otal los Critical	t time flow ra	per cy te to	cle, I capacit	. = 12 ;y rat:	.00 sec io,						
Right um of flo	ow rati	os for	critic	al lar	ne grou	os. Yc	= S1		s) =	0.55	
Prot Perm Thru	TR	1	313	350)1. #	0.38	0.4	44	1546	0.85	
outhbound Prot Perm Left	d L	1	32	175	52 #	0.08	0.1	18	321	0.41	
Perm Thru Right	TR	5	18	343	33	0.15	0.4	14	1516	0.34	
Prot Perm Left Prot	L	1	31	175	52	0.07	0.2	18	321	0.41	
orthbound		-	-	1.50		2.00	0.1	_ ·	_ · ·	· • • • • •	
Perm Left Prot Perm Thru Right	LT R	1	41	144 158		0.10	0.1 0.1		253 277	0.56 0.15	
FIOL	R	6		158		0.04	0.1		277	0.23	
Thru Right estbound Prot	LT		05	164	In	0.06	0.1		287	0.37	

. .

Intersection delay = 18.7 (sec/veh) Intersection LOS = B

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Analyst: KHAInter.: U.S. 19 & Construction AccessAgency: KHAArea Type: All other areasDate: 12/11/2008Jurisd: FDOTPeriod: P.M. Peak HourYear : 2015 Peak Construction TrafficProject ID: Levy County Advanced Reactor - Heavy Haul Route 1E/W St: Construction AccessN/S St: U.S. 19

		<u>ں </u>	IGNALIZE	D INTERSE	SCTION S	SUMMAP	(1				
	Ea	stbound	West	bound	Nort	thbour	ıd	Soi	uthbou	ind	l
	L	T R	L	T R	L	Т	R	L	т	R	
No. Lar	nes 0	0 0	2	0 1	-	2	1	2	2	0	-!
LGConfi	,		L	R		- T	R	L	T	Ū	
Volume	- 5		900	385	-			45	333		
Lane Wi	dth		12.0	12.0	- E	12.0 1	1		12.0		
RTOR Vo			12.0	0	-	12.01	5	12.0	12.0		
Duratio	on 0.25	Area		ll other							
Phase (Combinatio	n 1 2	Sign 3	al Operat 4	ions	5	6	7	5	3	
EB Lef			5	I NB	Left	5	Ũ	,		5	
DD DC1 Thr					Thru		A				
Ric											
-					Right		A				
Pec		7			Peds						
WB Lef		A		SB	Left	A	_				
Thr		_			Thru	А	A				
Rig		A		ļ	Right						
Pec					Peds						
NB Rig		A		EB	Right						
SB Rig	ght			WB	Right	А					
Green		35.0				10.0	60.0)			
Yellow		4.0				4.0	4.0				
All Red	E	1.0				1.0	1.0				
		Techowa				Cyc]	le Len	gth:	120.0) s	ecs
	Lane	Adj Sat		erformanc ios	Lane (roac	h		
Appr/						~			•		
	Group	Flow Rat	e								
Lane	Group Capacity	Flow Rat	e v/c	g/C	Delay	LOS	Dela	y LO	S		
Lane Grp	Capacity	Flow Rat		g/C	Delay	LOS	Dela	IY LO	 S		
Lane Grp	Capacity	Flow Rat		g/C	Delay	LOS	Dela	IY LO:	S		
Lane Grp Eastbou	Capacity und	Flow Rat		g/C	Delay	LOS	Dela	IY LO	S		
Lane Grp Eastbou Westbou	Capacity und	Flow Rat		g/C 0.30	Delay	LOS	Dela	IY LO	5		
Appr/ Lane Grp Eastbou Westbou L	Capacity und	Flow Rat	v/c				 Dela 45.8		5		
Lane Grp Eastbou Westbou L	Capacity und	Flow Rat	v/c						5		
Lane Grp Eastbou Westbou L R	Capacity and 1031 673	Flow Rat (s) 3437	v/c 0.92	0.30	53.3	D			S		
Lane Grp Eastbou Westbou L R Northbo	Capacity and 1031 673	Flow Rat (s) 3437	v/c 0.92	0.30	53.3	D		- 3 D			
Lane Grp Eastbou Westbou L R Northbo	Capacity and 1031 673 bund	Flow Rat (s) 3437 1583	v/c 0.92 0.60	0.30 0.43	53.3 28.2	D C	45.8	- 3 D			
Lane Grp Eastbou Westbou L R Northbo T R	Capacity and 1031 673 bund 1768 1332	Flow Rat (s) 3437 1583 3478	v/c 0.92 0.60 0.19	0.30 0.43 0.51	53.3 28.2 16.1	D C B	45.8	- 3 D			
Lane Grp Eastbou Westbou L R Northbo T R Southbo	Capacity and 1031 673 bund 1768 1332	Flow Rat (s) 3437 1583 3478	v/c 0.92 0.60 0.19	0.30 0.43 0.51	53.3 28.2 16.1	D C B	45.8	- 3 D			
Lane Grp Eastbou Westbou L R Northbo T R Southbo L	Capacity and 1031 673 bund 1768 1332 bund	Flow Rat (s) 3437 1583 3478 1583	v/c 0.92 0.60 0.19 0.08 0.15	0.30 0.43 0.51 0.84 0.09	53.3 28.2 16.1 1.6 50.4	D C B A	45.8	- 3 D 5 В			
Lane Grp Eastbou Westbou	Capacity and 1031 673 bund 1768 1332 bund 315 2203	Flow Rat (s) 3437 1583 3478 1583 3437 3478	v/c 0.92 0.60 0.19 0.08 0.15 0.16	0.30 0.43 0.51 0.84 0.09 0.63	53.3 28.2 16.1 1.6 50.4 9.0	D C B A D A	45.8 12.6 13.9	а 3 р 5 в 9 в			
Lane Grp Eastbou Westbou L R Northbo T R Southbo L	Capacity and 1031 673 bund 1768 1332 bund 315 2203	Flow Rat (s) 3437 1583 3478 1583 3437	v/c 0.92 0.60 0.19 0.08 0.15 0.16	0.30 0.43 0.51 0.84 0.09 0.63	53.3 28.2 16.1 1.6 50.4 9.0	D C B A D	45.8 12.6 13.9	а 3 р 5 в 9 в			

HCS+: Signalized Intersections Release 5.3

Phone: Fax: E-Mail: _____OPERATIONAL ANALYSIS_____

Analyst: KHA Agency/Co.: KHA Date Performed: 12/11/2008 P.M. Peak Hour Analysis Time Period: U.S. 19 & Construction Access Intersection: Area Type: All other areas Jurisdiction: FDOT Analysis Year: 2015 Peak Construction Traffic Project ID: Levy County Advanced Reactor - Heavy Haul Route 1 E/W St: Construction Access N/S St: U.S. 19

				v	OLUM	ie data					•	
l	Eas	tbou	nd	Wes	tbou	ınd	No	rthbo	und	So	uthbou	nd
	L	т	R	L	т	R	L	т	R	L	т	R
Volume % Heavy Veh PHF PK 15 Vol				 900 2 0.95 237		385 2 0.95 101		322 4 0.95 85	105 2 0.95 28	45 2 0.95	333 4 0.95 88	
Hi Ln Vol % Građe Ideal Sat ParkExist				1900	0	1900		0 1900	1900	1900	0 1900	
NumPark No. Lanes LGConfig Lane Width RTOR Vol	0	0	0	2 L 12.0	0	1 R 12.0 0	0	2 T 12.0	1 R 12.0 0	2 L 12.0	2 T 12.0	0
Adj Flow %InSharedLn				947		405	ĺ	339	111	47	351	
Prop LTs Prop RTs	İ İ			Ì		1.000	 c	0.0 000.0	00 1.000	0	0.00	00
Peds Bikes Buses %InProtPhase	0 e					0	C	0	0	0	0	
Duration	0.25		Area	Type:	A11	other	areas	5		•		

____OPERATING PARAMETERS_

1	Ea	stbou	nd	We	stbou	ınd	No	orthbo	und	Sc	uthbou	nd
	L	Т	R	L	Т	R	L	Т	R	L	т	R
Init Unmet	<u></u>			0.0		0.0		0.0	0.0	0.0	0.0	
Arriv. Type				3		3	1	3	3	3	3	
Unit Ext.				3.0		3.0	İ	3.0	3.0	3.0	3.0	
I Factor				i	1.00	0	i	1.00	0	Ì	1.000	
Lost Time				2.0		2.0	İ 👘	2.0	2.0	2.0	2.0	
Ext of g				3.0		3.0	1	3.0	3.0	3.0	3.0	
Ped Min g		3.2		Ì	3.2		Ì	3.2		İ		
					_PHAS	SE DATA						
Phase Combin	natic	n 1	2	3	4			5	6	7	' 8	3

EB	Left Thru Right Peds		NB 	Left Thru Right Peds		A A
WB	Left Thru Right Peds	A	SB 	Left Thru Right Peds	A A	A
NB	Right	А	EB	Right		
SB	Right		WB	Right	A	
Gree Yell All		35.0 4.0 1.0	1		10.0 4.0 1.0	60.0 4.0 1.0

Cycle Length: 120.0 secs

Volume Adjus	stment	:										
	Eas	stbou	nd	Wes	tbou	nd	No	rthbo	und	Sou	lthbou	ınd
	L	Т	R	L	Т	R	L	Т	R	L	т	R
Volume, V			r	900	i	385	 	322	105	45	333	
PHF	1			0.95		0.95	1	0.95	0.95	0.95	0.95	
Adj flow	İ			947		405	ĺ	339	111	47	351	
No. Lanes	j o	0	0	2	0	1	j o	2	1	2	2	0
Lane group	İ			Ĺ		R		т	R	L	т	
Adj flow	ļ			947		405	İ	339	111	47	351	
Prop LTs	İ			i			i	0.0	00		0.00	0
Prop RTs	i					1.000	i o	.000	1.000	i o	.000	

Saturatio	n Flow R	ate (see Exh	ibit 16-7 to	determine th	ne adju	stment	: facto	ors)
	Eastboun		stbound				hbound	
LG		L	R	т	R	L	т	
So		1900	1900	1900	1900	1900	1900	
Lanes O	0	0 2	0 1	0 2	1	2	2	0
fW		1.000	1.000	1.000	1.000	1.000	1.000	
fhv		0.980	0.980	0.962	0.980	0.980	0.962	
fG		1.000	1.000	1.000	1.000	1.000	1.000	
fP		1.000	1.000	1.000	1.000	1.000	1.000	
fBB		1.000	1.000	1.000	1.000	1.000	1.000	
fA		1.000	1.000	1.000	1.000	1.000	1.000	
fLU		0.971	1.000	0.952	1.000	0.971	0.952	
ÉRT			0.850	1.000	0.850		1.000	
fLT		0.950		1.000		0.950	1.000	
Sec.								
fLpb		1.000		1.000		1.000	1.000	
fRpb	•		1.000	1.000	1.000		1.000	
S		3437	1583	3478	1583	3437	3478	
Sec.								
	<u>_,</u>	САРА	CITY AND LOS	WORKSHEET				
Capacity	Analysis		oup Capacity					
			Adj Sat				-	
Appr/			Flow Rate		-	pacity		
Mvmt	Group	(v)	(s)	(v/s) (g/d	2)	(C)	Ratio	>

Eastbound

Prot

Control Appr/ Lane Erp v, Lastbour Lastbour L 0.9 R 0.6	Delay Ratio /c g nd 92 0. 60 0. und 19 0. 08 0. und 15 0.	and LOS s Unf Del /C d1 30 40.6 43 26.7	Prog Adj Fact 1.000 1.000 1.000 1.000 1.000	inatio Lane Grp Cap 1031 673 1768 1332	n Factor k 0.44 0.19 0.11 0.11 0.11	nental	Res Del d3	Lane	C B A	0.43 Appro Delay 45.8 12.6 13.9	
Control Appr/ Lane Erp v, Castbour Nestbour Conthbour Conthbour Conthbour Conthbour Conthbour Conthbour Conthbour Conthbour Conthbour Conthbour	Delay Ratio /c g nd 92 0. 60 0. und 19 0. 08 0. und 15 0.	and LOS s Unf Del /C d1 30 40.6 43 26.7 51 16.1 84 1.6 09 50.2	Prog Adj Fact 1.000 1.000 1.000 1.000 1.000	inatio Lane Grp Cap 1031 673 1768 1332 315	n Factor k 0.44 0.19 0.11 0.11 0.11	nental d2 12.7 1.5 0.1 0.0 0.2	Res Del d3 0.0 0.0 0.0 0.0 0.0 0.0	Lane Del. 53.3 28.2 16.1 1.6 50.4	Group ay LOS D C B A D	Appro Delay 45.8 12.6	D B
Control Appr/ Lane Erp v, Castbour Lastbour	Delay Ratio /c g nd 92 0. 60 0. und 19 0. 08 0. und	and LOS s Unf Del /C d1 30 40.6 43 26.7 51 16.1 84 1.6	Prog Adj Fact 1.000 1.000 1.000 1.000	inatio Lane Grp Cap 1031 673 1768 1332	n Factor k 0.44 0.19 0.11 0.11	nental d2 12.7 1.5 0.1 0.0	Res Del d3 0.0 0.0 0.0 0.0	Lane Del. 53.3 28.2 16.1 1.6	Group ay LOS D C B A	Appro Delay 45.8	D
Control Appr/ Lane Erp v, Castbour Vestbour L 0.9 R 0.6 Northbour R 0.1 R 0.1	Delay Ratio /c g nd 92 0. 60 0. und 19 0. 08 0.	and LOS s Unf Del /C d1 30 40.6 43 26.7 51 16.1	Prog Adj Fact 1.000 1.000 1.000	inatio Lane Grp Cap 1031 673 1768	n Factor k 0.44 0.19 0.11	nental d2 12.7 1.5 0.1	Res Del d3 0.0 0.0 0.0	Lane Del.	Group ay LOS D C B	Appro Delay 45.8	D
Control Appr/ Lane Erp v, Castbour Vestbour L 0.9 R 0.6 Northbour	Delay Ratio /c g nd 92 0. 60 0. und 19 0.	and LOS s Unf Del /C d1 30 40.6 43 26.7 51 16.1	Prog Adj Fact 1.000 1.000 1.000	inatio Lane Grp Cap 1031 673 1768	n Factor k 0.44 0.19 0.11	nental d2 12.7 1.5 0.1	Res Del d3 0.0 0.0 0.0	Lane Del.	Group ay LOS D C B	Appro Delay 45.8	D
Control Appr/ Lane Erp v, Lastbour Lastbour L 0.9 R 0.6	Delay Ratio /c g nd 92 0. 60 0. und	and LOS s Unf Del /C d1 30 40.6 43 26.7	Prog Adj Fact 1.000 1.000	inatio Lane Grp Cap 1031 673	n Factor k 0.44 0.19	nental Del d2 12.7 1.5	Res Del d3 0.0 0.0	Lane Del.	Group ay LOS D C	Appro Delay 45.8	D
Control Appr/ Lane Erp v/ Lastbour Vestbour L 0.9	Delay Ratio /c g nd 92 0.	and LOS s Unf Del /C d1 30 40.6	Prog Adj Fact 1.000	inatio Lane Grp Cap 1031	n Factor k 0.44	nental Del d2	Res Del d3	Lane 	Group ay LOS D	Appro Delay	LOS
Control Appr/ Lane Erp v, Castbour	Delay Ratio /c g nd	and LOS s Unf Del /C d1	Prog Adj Fact	inatio Lane Grp Cap	n Increm Factor k	nental Del d2	Res Del d3	Lane	Group ay LOS	Appro Delay	LOS
Control Appr/ Lane Erp v, Castbour	Delay Ratio /c g nd	and LOS s Unf Del /C d1	Prog Adj Fact	inatio Lane Grp Cap	n Increm Factor k	nental Del d2	Res Del d3	Lane	Group ay LOS	Appro	
Control Appr/ Lane Erp v,	Delay Ratio /c g	and LOS s Unf Del	Prog Adj	inatio Lane Grp	n Increm Factor	nental Del	Res Del	Lane	Group	Appro	
Control Appr/ Lane Erp v,	Delay Ratio /c g	and LOS s Unf Del	Prog Adj	inatio Lane Grp	n Increm Factor	nental Del	Res Del	Lane	Group	Appro	
Control Appr/ Lane	Delay Ratio	and LOS s Unf Del	Prog Adj	inatio Lane Grp	n Increm Factor	nental Del	Res Del	Lane	Group	Appro	
Control Appr/	Delay	and LOS s Unf	Prog	inatio Lane	n Increm	nental	Res				bach
			Determ			Xc	: = (Yo	c)(C)/	(C-L) =	0.43	
Cotal lo		me per c rate to									
		atios fo:					= 5	Sum (v	/s) =	0.39	
Thru Right		:	351	34	18	0.10	0.	63	2203	0.16	
Perm			0 - 1	~ ·	70	0 4 5		6.2	0000	0	
Prot			- 1	54	<i>_ ,</i>	0.01	υ.		313	0.10	
Southbou Prot Perm Left			47	34	37 	• 0.01	0	09	315	0.15	
Right		-	111	15	83	0.07	0.	84	1332	0.08	
Thru			339			0.10		51	1768	0.19	
Left Prot Perm											
Prot Perm											
lorthbou											
Right	t R	4	405	15	83	0.26	0.	43	673	0.60	
Thru											
Prot Perm											
Left			947	34	37 #	0.28	0.	30	1031	0.92	
Perm											
1100											
Prot											
lestbour											
Right Iestbour											
Thru Right Vestbour											
Right Iestbour											

TWO-WAY STOP CONTROL SUMMARY____

Analyst: KHA Agency/Co.: KHA Date Performed: 12/11/2008 Analysis Time Period: P.M. Peak Hour Intersection: U.S. 19 & Operations Access Jurisdiction: FDOT Units: U. S. Customary Analysis Year: 2015 Peak Construction Traffic Project ID: Levy County Advanced Reactor - Heavy Haul Route 1 East/West Street: Operations Access U.S. 19 North/South Street: Intersection Orientation: NS Study period (hrs): 0.25 _Vehicle Volumes and Adjustments_ Major Street: Approach Northbound Southbound Movement 1 2 3 5 4 б \mathbf{L} Т R L Т R 9 Volume 392 4 1229 0.95 . 0.95 Peak-Hour Factor, PHF 0.95 0.95 Hourly Flow Rate, HFR 412 9 4 1293 Percent Heavy Vehicles --2 - ------Median Type/Storage Raised curb / 2 RT Channelized? No Lanes 2 1 1 2 Configuration т т R L Upstream Signal? No No Minor Street: Approach Westbound Eastbound 7 Movement 8 9 10 11 12 L Т R. \mathbf{L} т R Volume 80 35 Peak Hour Factor, PHF 0.95 0.95 Hourly Flow Rate, HFR 84 36 Percent Heavy Vehicles 2 2 Percent Grade (%) 0 0 Flared Approach: Exists?/Storage Lanes 1 1 L Configuration R _Delay, Queue Length, and Level of Service_ Approach NB SB Westbound Eastbound Movement 1 4 7 8 9 10 11 12 Lane Config \mathbf{L} L R v (vph) 4 84 36

C(m) (vph) 1135 405 833 v/c 0.00 0.21 0.04 95% queue length 0.01 0.77 0.14 Control Delay 8.2 16.2 9.5 LOS А С А Approach Delay 14.2 Approach LOS в

Phone: E-Mail: Fax:

_TWO-WAY STOP CONTROL(TWSC) ANALYSIS__ Analyst: KHA Agency/Co.: KHA Date Performed: 12/11/2008 Analysis Time Period: P.M. Peak Hour Intersection: U.S. 19 & Operations Access Jurisdiction: FDOT Units: U. S. Customary 2015 Peak Construction Traffic Analysis Year: Project ID: Levy County Advanced Reactor - Heavy Haul Route 1 Operations Access East/West Street: North/South Street: U.S. 19 Intersection Orientation: NS Study period (hrs): 0.25 _Vehicle Volumes and Adjustments_ 5 Major Street Movements 1 6 2 3 4 т R Τ. \mathbf{L} т R Volume 392 9 4 1229 Peak-Hour Factor, PHF 0.95 0.95 0.95 0.95 Peak-15 Minute Volume 103 2 1 323 Hourly Flow Rate, HFR 412 9 4 1293 Percent Heavy Vehicles -----2 -----Median Type/Storage / 2 Raised curb RT Channelized? No Lanes 2 2 1 1 Configuration т R т T₁ Upstream Signal? No No Minor Street Movements 7 8 9 10 11 12 R L т г т R Volume 80 35 Peak Hour Factor, PHF 0.95 0.95 Peak-15 Minute Volume 21 9 Hourly Flow Rate, HFR 84 36 Percent Heavy Vehicles 2 2 Percent Grade (%) 0 0 Flared Approach: Exists?/Storage RT Channelized? No Lanes 1 1 Configuration L R Pedestrian Volumes and Adjustments Movements 13 14 15 16 Flow (ped/hr) 0 0 0 0 Lane Width (ft) 12.0 12.0 12.0 12.0 Walking Speed (ft/sec) 4.0 4.0 4.0 4.0 Percent Blockage 0 0 0 0

		Prog. Flow vph	Sat Flow vph	Arriv Type	e Ti		Cycle Length sec	Prog. Speed mph	Distance to Signal feet
	t-Turn ough								
S5 Lef	t-Turn ough	·							
Workshe	et 3-Data	for Co	mputing	Effect	: of Del	lay to	Major :	Street V	ehicles
					1	Moveme	nt 2	Moveme	nt 5
Sat flo Sat flo Number	<pre>ln volume w rate, ma w rate, ma of major s et 4-Crit.</pre>	ajor th ajor rt street	vehicle vehicle through	es: es: lanes:	<u>.</u>	Calcu	lation		
·	1 Gap Cal		_						
Movemen		L L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(c,bas	e)		4.1	7.5		6.2		·····	
t(c,hv) P(hv)		2.00	2.00 2	2.00 2	2.00	2.00 2	2.00	2.00	2.00
1 (110)				0.20	0.20	0.10	0.20		0.10
t(c,g)				0.00	0.00	0.00	0.00	0.00	0.00
t(c,g) Percent	Grade		0 00	0 70					
t(c,g) Percent t(3,lt)		0 00	0.00	0.70	0 00			0 00	0 00
t(c,g)	1-stage		0.00	0.00	0.00	0.00	0.00		0.00
t(c,g) Percent t(3,1t) t(c,T):	1-stage 2-stage	0.00	0.00 0.00	0.00 1.00	0.00 1.00	0.00 0.00	0.00		0.00 0.00
t(c,g) Percent t(3,lt)	1-stage	0.00	0.00	0.00		0.00	0.00		
<pre>t(c,g) Percent t(3,lt) t(c,T): t(c) Follow-</pre>	1-stage 2-stage 1-stage 2-stage Up Time C	0.00 alculat	0.00 0.00 4.1 4.1	0.00 1.00 6.8 5.8	1.00	0.00 0.00 6.2	0.00		
<pre>t(c,g) Percent t(3,lt) t(c,T): t(c) Follow-</pre>	1-stage 2-stage 1-stage 2-stage Up Time C	0.00	0.00 0.00 4.1 4.1	0.00 1.00 6.8		0.00 0.00 6.2	0.00		
<pre>t(c,g) Percent t(3,lt) t(c,T): t(c) Follow- Movemen t(f,bas t(f,HV)</pre>	1-stage 2-stage 1-stage 2-stage Up Time C.	0.00 alculat 1	0.00 0.00 4.1 4.1 L 2.20	0.00 1.00 6.8 5.8 7	1.00	0.00 0.00 6.2 6.2 9	0.00 1.00 10 L	1.00 11 T	0.00
<pre>t(c,g) Percent t(3,lt) t(c,T): t(c) Follow- Movemen t(f,bas</pre>	1-stage 2-stage 1-stage 2-stage Up Time C.	0.00 alculat 1 L	0.00 0.00 4.1 4.1 L 2.20 1.00	0.00 1.00 6.8 5.8 7 L 3.50 1.00	1.00 8 T	0.00 0.00 6.2 6.2 9 R 3.30 1.00	10 10 L	1.00 11 T	0.00 12 R
<pre>t(c,g) Percent t(3,lt) t(c,T): t(c) Follow- Movemen t(f,bas t(f,HV) P(HV) t(f)</pre>	1-stage 2-stage 1-stage 2-stage Up Time C.	0.00 alculat 1 L 1.00	0.00 0.00 4.1 4.1 2.20 1.00 2 2.2	0.00 1.00 6.8 5.8 7 L 3.50 1.00 2 3.5	1.00 8 T 1.00	0.00 0.00 6.2 6.2 9 R 3.30 1.00 2	10 10 L	1.00 11 T	0.00 12 R

V(t) V(l,prot) V(t) V(l,prot)

V prog Total Saturation Flow Rate, s (vph) Arrival Type Effective Green, g (sec) Cycle Length, C (sec) Rp (from Exhibit 16-11) Proportion vehicles arriving on green P



g(q1) g(q2) g(q)

(a) (se or, F conflic flow, V flow, V ocked p e block	ting flo (c,max) (c,min)	w, f	V (nent 2 7(1,prot		Movement) V(l,	
or, F conflic flow, V flow, V ocked p	ting flo (c,max) (c,min)	w, f			-			
or, F conflic flow, V flow, V ocked p	ting flo (c,max) (c,min)	w, f						
or, F conflic flow, V flow, V ocked p	ting flo (c,max) (c,min)	w, f						
or, F conflic flow, V flow, V ocked p	ting flo (c,max) (c,min)	w, f						
conflic flow, V flow, V ocked.p	(c,max) (c,min)	w, f						
flow, V flow, V ocked.p	(c,max) (c,min)	w, ±						
flow, V ocked.p	(c,min)							
ocked.p								
		()						
e prock		(p)		~ ~ ~			0 000	
	ea, p			0.0	100		0.000	
Platoon	Event P	eriods	Res	ult				
			0.0	00				
uncons	trained?							
				•		<u>.</u>		
	(1)		(2)		(3)		
	Single	-stage		Two-S	Stage Pr	ocess		
)	Proc	ess	Sta	ge I		Stage	II	
								-;
		•						
		•						
and 5								
	1	4	7	8	9	. 10	11	12
	L	\mathbf{L}	L	т	R	\mathbf{L}	т	R
			•	-	· · · · · · · · · · · · · · · · · · ·			
		421	1066		206			
	7		8			_		
Stagel	Stage2	Stage1	Stage	2 Sta	agel St	tage2	Stage1	Stage2
412	654			· · · · · ·			<u> </u>	
	3000							
					·····		~	
	uncons) and 5 rocess Stagel 412	(1 Single Proc and 5 Process 1 L L	and 5 Process 1 4 L L 421 *ess 7 Stage1 Stage2 Stage1 412 654	0.0 unconstrained? (1) Single-stage Process Sta and 5 Process 1 4 7 L L L 421 1066 ress 7 8 Stagel Stage2 Stagel Stage 412 654	(1) (2) Single-stage Two-S Process Stage I and 5 Process 1 4 7 8 L L L T 421 1066 ress 7 8 Stagel Stage2 Stage1 Stage2 Stage1	0.000 unconstrained? (1) (2) Single-stage Two-Stage Pr Process Stage I and 5 Process 1 4 7 8 9 L L L T R 421 1066 206 ress 7 8 10 Stagel Stage2 Stagel Stage2 Stage1 St 412 654	0.000 unconstrained? (1) (2) (3) Single-stage Two-Stage Process) Process Stage I Stage (1) (2) (3) Two-Stage Process Stage I Stage I Stage (1) (2) (3) Two-Stage Process (1) (2) (3) Stage I Stage Process (1) (2) (3)	0.000 unconstrained? (1) (2) (3) Single-stage Two-Stage Process Process Stage I Stage II and 5 rocess 1 4 7 8 9 10 11 L L L T R L T 421 1066 206 ress 7 8 10 11 Stagel Stage2 Stagel Stage2 Stage1 Stage2 Stage1

C(plat, x)

Step 1: RT from Minor St. 9 12 Conflicting Flows 206 Potential Capacity 833 Pedestrian Impedance Factor 1.00 1.00 Movement Capacity 833 Probability of Queue free St. 0.96 1.00 Step 2: LT from Major St. 4 1 Conflicting Flows 421 Potential Capacity 1135 Pedestrian Impedance Factor 1.00 1.00 Movement Capacity 1135 Probability of Queue free St. 1.00 1.00 Maj L-Shared Prob Q free St. Step 3: TH from Minor St. 8 11 Conflicting Flows Potential Capacity Pedestrian Impedance Factor 1.00 1.00 Cap. Adj. factor due to Impeding mymnt 1.00 1.00 Movement Capacity Probability of Queue free St. 1.00 1.00 Step 4: LT from Minor St. 7 10 Conflicting Flows 1066 Potential Capacity 217 Pedestrian Impedance Factor 1.00 1.00 Maj. L, Min T Impedance factor 1.00 Maj. L, Min T Adj. Imp Factor. 1.00 Cap. Adj. factor due to Impeding mvmnt 1.00 0.95 Movement Capacity 216

Worksheet 6-Impedance and Capacity Equations

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
Part 1 - First Stage		
Conflicting Flows		
Potential Capacity	598	233
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	598	232
Probability of Queue free St.	1.00	1.00
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity	233	592
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	232	592

Part 3 - Single Stage Conflicting Flows

Volume (vph) Movement Capacity (vph) Shared Lane Capacity (vph)	84 405		36 833			
	Ĺ	Т	R	L ·	T	R
Movement	7	8	9	10	11	12
Worksheet 8-Shared Lane Calculati	015					
Ct			405			
У			1.61			
a			0.95	•	0.95	
Results for Two-stage process:		<u> </u>				
Movement Capacity		:	216			
Cap. Adj. factor due to Impeding m	mvmnt		1.00		0.95	
Maj. L, Min T Adj. Imp Factor.					1.00	
Maj. L, Min T Impedance factor					1.00	
Pedestrian Impedance Factor			1.00		1.00	
Potential Capacity		-	217			
Conflicting Flows			1066			
Part 3 - Single Stage						
Movement Capacity		4	477		779	
Cap. Adj. factor due to Impeding m	mvmnt		1.00		0.96	
Pedestrian Impedance Factor			1.00		1.00	
Potential Capacity			179		814	
Conflicting Flows			554			
Part 2 - Second Stage						
		·				
Movement Capacity			537		222	
Cap. Adj. factor due to Impeding r	mvmnt		1.00		1.00	
Pedestrian Impedance Factor			L.00		1.00	
Potential Capacity			537		223	
Part 1 - First Stage Conflicting Flows		2	112			
Step 4: LT from Minor St.			7		10	
Probability of Queue free St.	·	1	L.00		1.00	
Y C t						
a		l	1.95		0.95	
Result for 2 stage process:		,).95		0.95	
Movement Capacity		_			1.00	
Pedestrian Impedance Factor Cap. Adj. factor due to Impeding m	m mn t		L.00 L.00		1.00 1.00	

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement Capacity (vph) Shared Lane Capacity (vph)

Movement	7	8	9	10	11	12
	L	Т	R	\mathbf{L}	т	R
Csep	405		833			
Volume	84		36			
Delay						
Q sep						
Q sep +1						
round (Qsep +1)		•				

n max C sh SUM C sep n C act

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config		L	L		R			
v (vph)		4	84		36	· · · ·		
C(m) (vph)		1135	405		833			
v/c		0.00	0.21		0.04			
95% queue length		0.01	0.77		0.14			
Control Delay		8.2	16.2		9.5			
LOS		A	C,		А			
Approach Delay				14.2				
Approach LOS				B				

Worksheet 11-Shared Major LT Impedance and Delay

Movement 2Movement 5p(oj)1.00v(il), Volume for stream 2 or 5v(i2), Volume for stream 3 or 6s(il), Saturation flow rate for stream 2 or 5s(i2), Saturation flow rate for stream 3 or 6P*(oj)d(M,LT), Delay for stream 1 or 4N, Number of major street through lanesd(rank,1) Delay for stream 2 or 5

____TWO-WAY STOP CONTROL SUMMARY____

_									
Analyst:	КНА КНА								
Agency/Co.: Date Performed:		5/2008							
Analysis Time Per:		-	NU 75						
Intersection:			ry Haul	Drivou	~~~				
Jurisdiction:		County	/y naui	DTTVEW	dy				
Units: U. S. Custo		county							
Analysis Year:		Deals Co	onstruct	ion ma	~ ~ ~ ~ :	~			
Project ID: Levy							outo 1		
East/West Street:	COUNCY AC		Reactor	- nea	vуn	aui K	Juce I		
North/South Street			Driveway	7					
Intersection Orien	-		JT T V CWOJ		udv ·	nerio	d (hrs)	: 0.25	
incerbección orien				DE	uuy .	perro	. (111.5)	. 0.2.	,
			umes and	l Adjus	tmen				
• •	proach		stbound	2	1		stbound		
MO	vement	1	2	3	1	4	5	6	
		L	т	R	Į -	L	т	R	
Volume	<u></u>	0	147	15		0	106	0	
Peak-Hour Factor,	PHF	0.95	0.95	0.95		0.95	0.95	0.95	
Hourly Flow Rate,	HFR	0	154	15		0	111	0	
Percent Heavy Veh		100				100			
Median Type/Storag	ge	Undivi	lded		/				
RT Channelized?		0	1 1	No		0	1	0	
Lanes		0		_		0	1	0	
Configuration		Γ_{1}				Ъ	TR		
Upstream Signal?			No				No		
Minor Street: App	proach		thbound				uthbour		
Mo	vement	7	8	9		10	11	12	
		L	т	R	Ι	L	т	R	
Volume		0	1	0		0	1	0	
Peak Hour Factor,	PHF	0.95	0.95	0.95		0.95	0.95	0.95	
Hourly Flow Rate,	HFR	0	1	0		0	1	0	
Percent Heavy Veh	icles	100	100	100		100	100	100	
Percent Grade (%)			0				0		
Flared Approach:	Exists?/S	Storage		No	/			No	1
Lanes		0	1 ()		0	1	0	
Configuration			LTR				LTR		
	·····								
		-	ngth, an	nd Leve	l of	Serv			
	_Delay, Qu							- h h a a d	
Approach	EB	WB	Nort	hbound				thbound	
Movement	EB 1]	Sout 10	11	12
	EB	WB	Nort	hbound					12
Movement	EB 1	WB 4	Nort	hbound 8				11	12
Movement Lane Config	EB 1 LT	WB 4 LTR	Nort	thbound 8 LTR				11 LTR	12
Movement Lane Config v (vph)	EB 1 LT 0	WB 4 LTR 0	Nort	thbound 8 LTR 1				11 LTR 1	12
Movement Lane Config v (vph) C(m) (vph)	EB 1 LT 0 1040	WB 4 LTR 0 982	Nort	thbound 8 LTR 1 504				11 LTR 1 493	12
Movement Lane Config v (vph) C(m) (vph) v/c	EB 1 LT 0 1040 0.00	WB 4 LTR 0 982 0.00	Nort	2hbound 8 LTR 1 504 0.00				11 LTR 1 493 0.00	12
Movement Lane Config 	EB 1 LT 0 1040 0.00 0.00	WB 4 LTR 982 0.00 0.00	Nort	1 504 0.00 12.2 B				11 LTR 1 493 0.00 0.01	12
Movement Lane Config 	EB 1 LT 0 1040 0.00 0.00 8.5	WB 4 LTR 982 0.00 0.00 8.7	Nort	1 504 0.00 12.2				11 LTR 1 493 0.00 0.01 12.3	12

Phone: E-Mail: Fax:

TWO-WAY STOP CONTROL(TWSC) ANALYSIS Analyst: KHA Agency/Co.: KHA Date Performed: 12/15/2008 Analysis Time Period: P.M. Peak Hour Intersection: CR 40 & Heavy Haul Driveway Jurisdiction: Levy County Units: U. S. Customary 2015 Peak Construction Traffic Analysis Year: Project ID: Levy County Advanced Reactor - Heavy Haul Route 1 East/West Street: CR 40 Heavy Haul Driveway North/South Street: Intersection Orientation: EW Study period (hrs): 0.25 _Vehicle Volumes and Adjustments_ 5 6 Major Street Movements 1 2 3 4 \mathbf{L} т R L \mathbf{T} R Volûme 0 147 0 106 0 15 Peak-Hour Factor, PHF 0.95 0.95 0.95 0.95 0.95 0.95 Peak-15 Minute Volume 39 0 4 0 28 0 Hourly Flow Rate, HFR 0 154 15 0 111 0 Percent Heavy Vehicles 100 - -100 ----------_ _ Median Type/Storage Undivided RT Channelized? No Lanes 0 1 1 0 1 0 Configuration LTŔ LTR Upstream Signal? No No 7 8 9 Minor Street Movements 10 11 12 L т R L Т R Volume 0 0 1 0 1 0 Peak Hour Factor, PHF 0.95 0.95 0.95 0.95 0.95 0.95 Peak-15 Minute Volume 0 0 0 0 0 0 Hourly Flow Rate, HFR 0 1 0 0 1 0 Percent Heavy Vehicles 100 100 100 100 100 100 Percent Grade (%) 0 0 Flared Approach: Exists?/Storage No 1 No 1 RT Channelized? Lanes 0 1 0 0 0 1 Configuration LTR LTR _Pedestrian Volumes and Adjustments___ Movements 13 14 15 16 Flow (ped/hr) 0 0 0 0 Lane Width (ft) 12.0 12.0 12.0 12.0 Walking Speed (ft/sec) 4.0 4.0 4.0 4.0 Percent Blockage 0 0 0 0

Prog.	Sat	Arrival	Green	Cycle	Prog.	Distance
Flow Vph	Flow vph	Туре	Time sec	Length sec	Speed mph	to Signal feet

Through

S5 Left-Turn

Through

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

	Movement 2	Movement 5
Shared ln volume, major th vehicles:	154	111
Shared ln volume, major rt vehicles:	0	0
Sat flow rate, major th vehicles:	1700	1700
Sat flow rate, major rt vehicles:	1700	1700
Number of major street through lanes:	1	1

Worksheet 4-Critical Gap and Follow-up Time Calculation

Critical	Gap Calo	culatio	on						
Movement	-	1	4	7	8	9 [`]	10	11	12
		L	L	L	т	R	L	т	R
t(c,base	e)	4.1	4.1	7.1	6.5	6.2	7.1	6.5	6.2
t(c,hv)		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
P(hv)		100	100	100	100	100	100	100	100
t(c,g)				0.20	0.20	0.10	0.20	0.20	0.10
Percent	Grade			0.00	0.00	0.00	0.00	0.00	0.00
t(3,lt)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t(c,T):	1-stage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2-stage	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
t(c)	1-stage	5.1	5.1	8.1	7.5	7.2	8.1	7.5	7.2
	2-stage								
Follow-U	Jp Time Ca	alcula	tions						
Movement		1	4	7	8	9	10	11	12
		L	L	L	т	R	L	т	R
t(f,base	2)	2.20	2.20	3.50	4.00	3.30	3.50	4.00	3.30
t(f,HV)		0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
P(HV)		100	100	100	100	100	100	100	100
t(f)		3.1	3.1	4.4	4.9	4.2	4.4	4.9	4.2

Worksheet 5-Effect of Upstream Signals

Computation	1-Queue	Clearance	Time	at	-	4	Manager 5		
					Movement 2		Movement 5		
					V(t)	V(l,prot)	V(t)	V(l,prot)	
V prog									
Total Satura	ation Flo	ow Rate, s	(vph)				,	

Total Saturation Flow Rate, s (vph) Arrival Type Effective Green, g (sec) Cycle Length, C (sec) Rp (from Exhibit 16-11) Proportion vehicles arriving on green P g(q1) g(q2) g(q)

	LODOLO	.1011 01 1	WSC Int	CLOCCC	Movem			Notionar	+ 5
				v		(1,prot		Movemen) V(1	,prot)
lpha		· . ·							
beta									
Fravel time, t	(a) (se	ec)							
Smoothing Facto									
Proportion of a		ting flo	w f						
Max platooned i			, _						
Min platooned i				•					
			- (~)				,		
Duration of blocked period, t(p) Proportion time blocked, p					0.0	0.0		0 000	
Proportion time	S DTOCK	tea, p			0.0	00		0.000	
Computation 3-1	Platoor	n Event H	Periods	Re	sult				
p(2)				0.	000				
p(5)				Ο.	000				
p(dom)									
p(subo)									
Constrained or	uncons	trained	?						
Proportion									
unblocked		(1	L)		(2)		(3)		
for minor			e-stage			tage Pr			
	N	Proc		· st		-		тт	
movements, p(x)	,	PLOC		· 50	age I		Stage		
p(1)									
p(4)									
p(7)									
p(8)									
p(9)									
p(10)									
p(11)									
p(12)								,	
Computation 4 a	and 5		· · · ·						
Single-Stage P:									
Movement	200000	1	4	7	8	9	10	11	12
HOV EMBIL		L	а L	, L	T	R	L	T	
		Ц	<u>ц</u>	L	1	ĸ	L	1.	R
Vc,x		111	169	266	265	154	273	280	111
S									
Px									
V c,u,x									
C r,x									
C plat,x									
Two-Stage Proc	ess								
		7		8		10		1	1
:	Stage1	Stage2	Stage1	. Stag	e2 Sta	gel St	age2	Stage1	Stage2
V(c,x)									
		1500		1500		15	00		1500
S									
S P(x) V(cux)									
					· -				

C(plat,x)

Worksheet 6-Impedance and Capacity Equations

Step 1: RT from Minor St.	9	12
Conflicting Flows	154	111
Potential Capacity	688	732
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	688	732
Probability of Queue free St.	1.00	1.00
Step 2: LT from Major St.	4	1
Conflicting Flows	169	111
Potential Capacity	982	1040
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	982	1040
Probability of Queue free St.	1.00	1.00
Maj L-Shared Prob Q free St.	1.00	1.00
Step 3: TH from Minor St.	. 8	11
Conflicting Flows	265	280
Potential Capacity	504	493
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	504	493
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Conflicting Flows	266	273
Potential Capacity	527	521
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor	1.00	1.00
Maj. L, Mín T Adj. Imp Factor.	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	526	520

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.

Conflicting Flows

8

280

11

Potential Capacity Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mv Movement Capacity	mnt	1 1	04 .00 .00 04		493 1.00 1.00 493	
Result for 2 stage process: a						
y C t Probability of Queue free St.			04		493 1.00	
Step 4: LT from Minor St.		•••••••••••••••••••••••••••••••••••••••	7		10	
Part 1 - First Stage Conflicting Flows Potential Capacity Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mv Movement Capacity	mnt					
Part 2 - Second Stage Conflicting Flows Potential Capacity Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mv Movement Capacity	mnt					
Part 3 - Single Stage Conflicting Flows Potential Capacity Pedestrian Impedance Factor Maj. L, Min T Impedance factor Maj. L, Min T Adj. Imp Factor. Cap. Adj. factor due to Impeding mv Movement Capacity	mnt	5 1 1 1 1	266 27 .00 .00 .00 .00 .00 526		273 521 1.00 1.00 1.00 1.00 520	
Results for Two-stage process: a Y C t		, 2	526		520	
Worksheet 8-Shared Lane Calculation	s					×
Movement	7 L	8 T	9 R	10 L	11 T	12 R
Volume (vph) Movement Capacity (vph) Shared Lane Capacity (vph)	0 526	1 504 504	0 688	0 520	1 493 493	0 732
Worksheet 9-Computation of Effect c	of Flare	d Minor	Street	Approa	ches	
Movement	7 L	8 T	9 R	10 L	11 T	12 R
C sep Volume Delay	526 0	504 1	688 0	520 0	493 1	732 0

- Delay Q sep

Q sep +1 round (Qsep +1)

n max C sh SUM C sep n C act

493

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config	LT	LTR		LTR			LTR	
v (vph)	0	0		1			1	
C(m) (vph)	1040	982		504			493	
v/c	0.00	0.00		0.00			0.00	
95% queue length	0.00	0.00		0.01			0.01	
Control Delay	8.5	8.7		12.2			12.3	
LOS	A	А		в			В	
Approach Delay				12.2			12.3	
Approach LOS				В			в	

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	1.00
v(il), Volume for stream 2 or 5	154	111
v(i2), Volume for stream 3 or 6	0	0
s(il), Saturation flow rate for stream 2 or 5	1700	1700
s(i2), Saturation flow rate for stream 3 or 6	1700	1700
P*(oj)	1.00	1.00
d(M,LT), Delay for stream 1 or 4	8.5	8.7
N, Number of major street through lanes	1	1
d(rank,1) Delay for stream 2 or 5	0.0	0.0

Analyst: KHAInter.: U.S. 19 & Construction AccessAgency: KHAArea Type: All other areasDate: 12/11/2008Jurisd: FDOTPeriod: A.M. Peak HourYear : 2015 Peak Construction TrafficProject ID: Levy County Advanced Reactor - Heavy Haul Route 2E/W St: Construction AccessN/S St: U.S. 19

	Eas	stbound	Westh	ound	CTION Nor	thbou	nd l	Soi	uthbou	ınd	
	L	T R	L I		L	Т	R	L	т	R	
No. Lanes LGConfig Volume		0 0	2 L 105	0 1 R 45	1		1 R 900	2 L 385	2 T 286	0	
Lane Widt RTOR Vol	1		12.0 	12.0 0	Y	12.0	12.0 0	12.0	12.0		
Duration	0.25	Area	Type: Al Signa	.1 other 1 Operat							
	mbination	1 1 2	3	4		5	6	7	1	8	
EB Left				NB	Left		_				
Thru					Thru		A				
Right	t				Right		A				
Peds		7			Peds	7					
WB Left Thru		А		SB	Left Thru	A A	A				
Right		А		1	Right		A				
Peds		A			Peds						
NB Right		А		EB	Right						
SB Right		24		WB	Right						
	6	10.0		1 110	1129110			`			
Green		10.0				20.0	75.0)			
						20.0		J			
Yellow		4.0 1.0				20.0 4.0 1.0	4.0 1.0	J			
Yellow		4.0 1.0				4.0 1.0 Cyc	4.0		120.	0 s	secs
Yellow All Red		4.0 1.0 Inters	ection Pe			4.0 1.0 Cyc ary	4.0 1.0 :le Ler	ngth:		0 5	secs
Yellow All Red Appr/ 1	Lane	4.0 1.0 Inters Adj Sat	Rati		ce Summ Lane	4.0 1.0 Cyc ary	4.0 1.0 :le Ler			0 ន	secs
Yellow All Red Appr/ 1 Lane (Group	4.0 1.0 Inters Adj Sat Flow Rat	Rati e	Los	Lane	4.0 1.0 Cyc ary Group	4.0 1.0 ele Ler	ngth: proac	h	0 s	secs
Yellow All Red Appr/ 1 Lane 0		4.0 1.0 Inters Adj Sat Flow Rat	Rati			4.0 1.0 Cyc ary Group	4.0 1.0 ele Ler	ngth:	h	0 ≲ 	secs
Yellow All Red Appr/ 1 Lane (Grp (Group Capacity	4.0 1.0 Inters Adj Sat Flow Rat	Rati e	Los	Lane	4.0 1.0 Cyc ary Group	4.0 1.0 ele Ler	ngth: proac	h	<u>ء</u> 0	secs
Yellow All Red Appr/ 1 Lane (Grp (Eastbound	Group Capacity d	4.0 1.0 Inters Adj Sat Flow Rat	Rati e	Los	Lane	4.0 1.0 Cyc ary Group	4.0 1.0 ele Ler	ngth: proac	h	0 s	secs
Yellow All Red Appr/ 1 Lane (Grp (Eastbound Westbound	Group Capacity d d	4.0 1.0 Adj Sat Flow Rat (s)	Rati	g/C	Lane Delay	4.0 1.0 Cyc ary Group LOS	4.0 1.0 ele Ler	ngth: proac	h	ء 0 	secs
Lane (Group Capacity d	4.0 1.0 Inters Adj Sat Flow Rat	Rati e	Los	Lane	4.0 1.0 Cyc ary Group	4.0 1.0 the Ler Dela	oroac	h S	<u>ء</u> 0	secs
Yellow All Red Appr/ 1 Lane (Grp (Eastbound Westbound L	Group Capacity d d 315	4.0 1.0 Adj Sat Flow Rat (s) 3437	Rati v/c	g/C 0.09	Lane Delay 51.8	4.0 1.0 Cyc Group LOS	4.0 1.0 ele Ler	oroac	h S	0 s	Secs
Yellow All Red Appr/ 1 Lane (Grp (Eastbound Westbound L R	Group Capacity d d 315 475	4.0 1.0 Adj Sat Flow Rat (s)	Rati	g/C	Lane Delay	4.0 1.0 Cyc ary Group LOS	4.0 1.0 the Ler Dela	oroac	h S	0 s	secs
Yellow All Red Appr/ 1 Lane (Grp (Eastbound Westbound L R	Group Capacity d d 315 475	4.0 1.0 Adj Sat Flow Rat (s) 3437	Rati v/c	g/C 0.09	Lane Delay 51.8	4.0 1.0 Cyc Group LOS	4.0 1.0 the Ler Dela	oroac	h S	0 s	secs
Yellow All Red Appr/ 1 Lane 0 Grp 0 Eastbound L R Northbour	Group Capacity d d 315 475	4.0 1.0 Adj Sat Flow Rat (s) 3437	Rati v/c	g/C 0.09	Lane Delay 51.8	4.0 1.0 Cyc Group LOS	4.0 1.0 the Ler Dela	ngth: proac ay LO 5 D	h s	0 s	
Yellow All Red Appr/ 1 Lane 0 Grp 0 Eastbound L R Northbour T	Group Capacity d 315 475 nd	4.0 1.0 Inters Adj Sat Flow Rat (s) 	Rati v/c 0.35 0.10	g/C g/C 0.09 0.30	Lane Delay 51.8 30.4	4.0 1.0 Cyc Group LOS D C	4.0 1.0 21e Ler 0 App Dela	ngth: proac ay LO 5 D	h s	0 s	secs
Yellow All Red Appr/ 1 Lane 0 Grp 0 Eastbound L R Northbour	Group Capacity d 315 475 nd 2203 1200	4.0 1.0 Inters Adj Sat Flow Rat (s) 3437 1583 3478	Rati v/c 0.35 0.10 0.14	g/C 0.09 0.30 0.63	Lane Delay 51.8 30.4 8.9	4.0 1.0 Cyc ary Group LOS D C A	4.0 1.0 21e Ler 0 App Dela	ngth: proac ay LO 5 D	h s	0 s	secs
Yellow All Red Appr/ 1 Lane 0 Grp 0 Eastbound L R Northbour T R	Group Capacity d 315 475 nd 2203 1200	4.0 1.0 Inters Adj Sat Flow Rat (s) 3437 1583 3478	Rati v/c 0.35 0.10 0.14	g/C 0.09 0.30 0.63	Lane Delay 51.8 30.4 8.9	4.0 1.0 Cyc ary Group LOS D C A	4.0 1.0 21e Ler 0 App Dela	ngth: proac ay LO 5 D	h s	0 s	
Yellow All Red Appr/ D Lane G Grp G Eastbound Westbound L R Northboun T R Southboun	Group Capacity d 315 475 nd 2203 1200 nd	4.0 1.0 Inters Adj Sat Flow Rat (s) 3437 1583 3478 1583	Rati v/c 0.35 0.10 0.14 0.79	g/C 0.09 0.30 0.63 0.76	Lane Delay 51.8 30.4 8.9 12.4	4.0 1.0 Cyc Group LOS D C A B	4.0 1.0 21e Ler 0 App Dela	ngth: proac ay LO 5 D	h s	0 5	Sec:
Yellow All Red Appr/ D Lane (Grp (Eastbound L R Northbour T R Southbour L	Group Capacity d 315 475 nd 2203 1200 nd 601 2927	4.0 1.0 Inters Adj Sat Flow Rat (s) 3437 1583 3478 1583 3478 1583 3478	Rational Rat	0.09 0.30 0.63 0.76 0.17 0.84	Lane Delay 51.8 30.4 8.9 12.4 49.3 1.7	4.0 1.0 Cyc ary Group LOS D C A B D A A	4.0 1.0 1.0 2 le Ler 0 App Dela 45.1 11.1	ngth: proac ay LO 5 D 5 B 0 C	h S	0 s	secs

HCS+: Signalized Intersections Release 5.3

Phone: Fax: E-Mail: _____OPERATIONAL ANALYSIS_____

Analyst: KHA Agency/Co.: KHA Date Performed: 12/11/2008 Analysis Time Period: A.M. Peak Hour U.S. 19 & Construction Access Intersection: Area Type: All other areas Jurisdiction: FDOT Analysis Year: 2015 Peak Construction Traffic Project ID: Levy County Advanced Reactor ~ Heavy Haul Route 2 E/W St: Construction Access N/S St: U.S. 19

_____VOLUME DATA_

	Eastbound			Wes	tbo	und	No	rthbo	und	So	Southbound		
	L	т	R	Ĺ	т	R	L	Т	R	L	т	R	
Volume				105		45		293	900	385	286		
% Heavy Veh				2		2	i	4	2	2	4		
PHF				0.95		0.95	j	0.95	0.95	0.95	0.95		
PK 15 Vol				28		12	Í	77	237	101	75	÷	
Hi Ln Vol % Grade					0			0			0		
ideal Sat ParkExist NumPark				1900	U	1900		-	1900	1900	0 1900		
No. Lanes	0	0	0	2	0	1) 2	1	2	2	0	
LGConfig				L		R	İ	т	R	L	т		
Lane Width RTOR Vol				12.0		12.0 0		12.0	12.0 0	12.0	12.0		
Adj Flow				111		47	ĺ	308	947	405	301		
%InSharedLn Prop L/Ts								0.0	00		0.00	0	
Prop RTs						1.000		0.000		0	.000		
Peds Bikes	0			0		1.000							
Buses %InProtPhase				0		. 0		0	0	0	0		
Duration	0.25		Area		רות	other	1	4		I			

_____OPERATING PARAMETERS___

	Eastbound		We	Westbound			Northbound			Southbound		
	L	т	R	L	т	R	L	т	R	L	T	R
Init Unmet				0.0		0.0		0.0	0.0	0.0	0.0	
Arriv. Type				3		3	1	3 ·	3	3	3	
Jnit Ext.				3.0		3.0	Í	3.0	3.0	3.0	3.0	
I Factor				İ	1.00	0	İ	1.00	0	i	1.000	C
Lost Time				2.0		2.0	İ	2.0	2.0	2.0	2.0	
Extofg				3.0		3.0	İ	3.0	3.0	3.0	3.0	
Ped Min g	:	3.2		İ	3.2		i	3.2		Ì		
					PHAS	SE DATA						

EB	Left Thru Right Peds		N. 	B Left Thru Right Peds		A A
WB	Left Thru Diabt	A	S	Thru	A A	A .
	Right Peds	A		Right Peds		
NB	Right	А	E	B Right	:	
SB	Right		W	B Right	E A	
Gre Yel		10.0 4.0	· ·		20.0 4.0	75.0 4.0
	Red	1.0			1.0	1.0

Cycle Length: 120.0 secs

VOLUME ADJUSTMENT AND SATURATION FLOW WORKSHEET													
Volume Adjustment													
	Eas	tbou	nd	Wes	Westbound			Northbound			Southbound		
	L	т	R	L	Т	R	L	т	R	L	\mathbf{T}	R	
Volume, V				105		45		293	900	385	286		
PHF				0.95		0.95	İ	0.95	0.95	0.95	0.95	Í	
Adj flow	[111		47	1	308	947	405	301	j	
No. Lanes	0	0	0	2	0	1	j o	2	1	2	2	0 j	
Lane group	ł			L		R	1	т	R	L	т	1	
Adj flow	[111		47	1	308	947	405	301		
Prop LTs							1	0.0	00	1	0.00	0 0	
Prop RTs						1.000	0	.000	1.000	0	.000	ĺ	

Saturatio	on Flow F	ate (see Exh	ibit 16-7 to	determine	the adj	ustmen	t facto	ors)
	Eastbour	nd We	stbound	Northbou	nd	Sout	thbound	1
LG		L	R	т	R	L	т	
So		1900	1900	1900	1900	1900	1900	
Lanes O	· 0	0 2	0 1	0 2	1	2	2	0
fW		1.000	1.000	1.00	0 1.000	1.000	1.000	
fhv		0.980	0.980	0.96	2 0.980	0.980	0.962	
fG		1.000	1.000	1.00	0 1.000	1.000	1.000	
fP		1.000	1.000	1.00	0 1.000	1.000	1.000	
fBB		1.000	1.000	1.00	0 1.000	1.000	1.000	
fA		1.000	1.000	1.00	0 1.000	1.000	1.000	
fLU		0.971	1.000	0.95	2 1.000	0.971	0.952	
fRT			0.850	1.00	0 0.850		1.000	
fLT		0.950)	1.00	0	0.950	1.000	
Sec.								
fLpb		1.000)	1.00	0	1.000	1.000	
fRpb			1.000	1.00	0 1.000		1.000	
S		3437	1583	3478	1583	3437	3478	
Sec.								
		CAPA	CITY AND LOS	WORKSHEET_				
Capacity	Analysis	and Lane Gr	oup Capacity					
		Adj	Adj Sat	Flow Gr	een	Lane G	roup	
Appr/	Lane	Flow Rate	Flow Rate	Ratio Ra	tio Ca	pacity	v/c	
Mvmt	Group	(v)	(s)	(v/s) (g	/C)	(c)	Ratio	>

Eastbound

Prot

Perm											
Left											
Prot											
Perm											
Thru											
Right											
lestboun	.d										
Prot											
Perm											
Left	\mathbf{L}	1	.11	343	37	0.03	0.	09	315	0.35	
Prot											
Perm											
Thru	_		-				-				
Right		4	.7	158	33	0.03	Ο.	30	475	0.10	
orthbou	ind										
Prot											
Perm											
Left											
Prot											
Perm Thru	т	-	100	3 / 1	70	0 00	^	63	2202	0 1 4	
Thru Right	_		308 947	34' 15		0.09 0.60			2203	0.14 0.79	
Right Southbou			/ 11 /	10	ד נכ	0.00	υ.	10	1200	0.79	
Prot	uiu										
Prot											
Left	L	/	105	343	37 4	0.12	Δ	.17	601	0.67	
Prot	ы	4	100	54.	آ ر	· U.12	υ.	. エ /	001	0.0/	
Perm											
Thru	т	-	301	· 34'	70 [.]	0.09	0	.84	2927	0.10	
Right		-		9.4	/0	0.05	0.	.04	2921	0.10	
Cotal lo	low rati ost time flow ra	per cy	vcle, 1	L = 3.	00 sec	2		Sum (v/ c)(C)/(0.72 0.73	
	Delay an		Determ	inatio	n						
	Ratios	Unf	Prog	Lane		nental		Lane	Group	Appro	ach
Jane	a a/C	Del	Adj	Grp	Factor		Del	Dolo		Delas	. 100
Srp v/	'c g/C	d1	Fact	Сар	k	d2	d3	Dera	y LOS	Delay	LOS
Eastboun	ıd	,									
Vestboun L 0.3		51.2	1.000	315	0.11	0.7	0.0	51.8	D		
	0.05	51.2	1.000	313	0.11	0.7	0.0	51.0	Ъ	45.5	D
x 0.1	0.30	30.3	1.000	475	0.11	0.1	0.0	30.4	С	1010	2
lorthbou									-		
. 0.1	.4 0.63	8.9	1.000	2203	0.11	0.0	0.0	8.9	А	11.5	R
. 0.1 . 0.7		8.7	1.000		0.34	3.6	0.0	12.4	B	тт.J.	<u> </u>
Southbou		0.7	1.000	1200	0.04	5.0	0.0	10.4	<u>د</u>		
0.6		46.3	1.000	601	0.25	3.0	0.0	49.3	D		
0.1				2927	0.11			49.5 1.7	A	29.0	
	0 0 84	n	1 . 11111			() ()					C
0.1	.0 0.84	1.6	1.000	2941	0.11	0.0	0.0	1.1	А	25.0	С
0.14	.0 0.84	1.0	1.000	2921		0.0	0.0	1.7			С
			delay					rsectio			С

•

TWO-WAY STOP CONTROL SUMMARY_ Analyst: KHA Agency/Co.: KHA Date Performed: 12/11/2008 Analysis Time Period: A.M. Peak Hour U.S. 19 & Operations Access Intersection: Jurisdiction: FDOT Units: U. S. Customary Analysis Year: 2015 Peak Construction Traffic Project ID: Levy County Advanced Reactor - Heavy Haul Route 2 East/West Street: Operations Access North/South Street: U.S. 19 Intersection Orientation: NS Study period (hrs): 0.25 _Vehicle Volumes and Adjustments Northbound Southbound Major Street: Approach Movement 2 1 3 4 5 6 L т R L т R Volume 1189 93 351 40 Peak-Hour Factor, PHF 0.95 0.95 0.95 0.95 Hourly Flow Rate, HFR 1251 97 42 369 Percent Heavy Vehicles - ------2 ----Median Type/Storage / 2 Raised curb **RT** Channelized? No Lanes 2 1 1 2 Configuration т R L т Upstream Signal? No No Westbound Minor Street: Approach Eastbound Movement 7 8 9 10 11 12 L т R \mathbf{L} т R Volume 9 4 Peak Hour Factor, PHF 0.95 0.95 Hourly Flow Rate, HFR 9 4 Percent Heavy Vehicles 2 2 Percent Grade (%) 0 0 Flared Approach: Exists?/Storage Lanes 1 1 Configuration \mathbf{L} R _Delay, Queue Length, and Level of Service_ Approach NB SB · Westbound Eastbound Movement 1 4 7 8 9 10 11 12 Lane Config L L R v (vph) 42 9 4 C(m) (vph) 507 216 482 v/c 0.08 0.04 0.01

95% queue length Control Delay LOS Approach Delay Approach LOS 0.27

12.7

В

0.13

22.4

С

0.03

12.5

В

19.4 C

Phone: E-Mail: Fax:

c-Mall:							
ŋ	WO-WAY STO	OP CONTR	ROL (TWSC	C) ANAL	YSIS	·····	
Analyst: F	CHA						
	AHA						
	2/11/2008						
Analysis Time Period: A		Hour					
	J.S. 19 & (MS Acc	299			,
	DOT	operacra		200			
Units: U. S. Customary	DOI						
	2015 Peak (onstruc	tion T	caffic			
Project ID: Levy Count					1 Route	2	
	perations		<i></i>		I nouse	2	
	J.S. 19	1100000					
Intersection Orientatio			S	cudy pe	riod (h:	rs):	0.25
	_Vehicle V		224 Ad	iustmon	ta		
Major Street Movements	1	2	3 and Ad	4 Juschien	5	6	
Major bereet Movements	L	T	R	Ľ	л Т	R	
	Ц	Ŧ	IV.	تىد	T	K	
Volume		1189	93	40	351		
Peak-Hour Factor, PHF		0.95	0.95	0.95	0.95		
Peak-15 Minute Volume		313	24	11	92		
Hourly Flow Rate, HFR		1251	97	42	369		
Percent Heavy Vehicles				2			
Median Type/Storage	Rais	ed curb		/ 2	1		
RT Channelized?	nais.	cu curb	No	/ 4			
Lanes		2	1	1	2		
Configuration		TR.		Ĩ			
Upstream Signal?		No		-	No		
Minor Street Movements	7	8	9	10	11	12	
	L	Т	R	L	Т	R	
Volume	9		4				
Peak Hour Factor, PHF	0.95		0.95				
Peak-15 Minute Volume	2		1				
Hourly Flow Rate, HFR	9		4				
Percent Heavy Vehicles	2		2				
Percent Grade (%)		0			0		
Flared Approach: Exist	cs?/Storag	e		1			/
RT Channelized?	2		No				
Lanes	1		1				
Configuration	. L	R					
		•••••	· · · · ·		<u></u>		
	Pedestrian	Volume	s and A	djustme	ents		
Movements	13	14	15	16			
Flow (ped/hr)	0	0	0	0			
Lane Width (ft)	12.				. 0		
Walking Speed (ft/sec)	4.0						
Percent Blockage	0	0	0	0			
	Ū.	v	. ~	v			

	Upstream Signal Data									
		Prog. Flow vph	Sat Flow vph	Arrival Type	Green Time sec	Cycle Length sec	Prog. Speed mph	Distance to Signal feet		
S2	Left-Turn Through									
\$5	Left-Turn Through									

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

	Movement 2	Movement 5
Shared ln volume, major th vehicles: Shared ln volume, major rt vehicles: Sat flow rate, major th vehicles: Sat flow rate, major rt vehicles: Number of major street through lanes:		

Worksheet 4-Critical Gap and Follow-up Time Calculation

Critical	Gap Calc	ulatio	on						
Movement		1	4	7	8	9	10	11	12
		L	L	L	T	R	L	. T	R
t(c,base	:)		4.1	7.5		6.2			
t(c,hv)		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
P(hv)			2	2		2			
t(c,g)				0.20	0.20	0.10	0.20	0.20	0.10
Percent	Grade			0.00	0.00	0.00	0.00	0.00	0.00
t(3,lt)			0.00	0.70		0.00			
t(c,T):	1-stage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2-stage	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
t(c)	1-stage		4.1	6.8		6.2			
	2-stage		4.1	5.8		6.2			
Follow-U	Ip Time Ca	lcula	tions						
Movement		1	4	7	8	9	10	11	12
		\mathbf{L}	\mathbf{L}	\mathbf{L}	Т	R	L	т	R
t(f,base	:)		2.20	3.50		3.30			.
t(f,HV)		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
P(HV)			2	2		2			
t(f)			2.2	3.5		3.3			

Worksheet 5-Effect of Upstream Signals

Computation	1-Queue	Clearance	Time	at	Upstream	Signal		
					Mov	vement 2	Mov	vement 5
					V(t)	V(l,prot)	V(t)	V(l,prot)

V prog Total Saturation Flow Rate, s (vph) Arrival Type Effective Green, g (sec) Cycle Length, C (sec) Rp (from Exhibit 16-11) Proportion vehicles arriving on green P

g(q)									
Computation 2	?-Proport.	ion of T	WSC Inte	ersectio V(Movem		Ν	Iovement V(l,	5 prot)
alpha				<u></u>					
beta Travel time, Smoothing Fac Proportion of Max platooned Min platooned Duration of l Proportion t:	ctor, F f conflic d flow, V d flow, V plocked p	ting flo (c,max) (c,min) eriod, t			0.0	00		0.000	
Computation 3	3-Platoon	Event P	eriods	Res	ılt				·····,
p(2) p(5) p(dom) p(subo) Constrained (or uncons	trained?		0.0					
Proportion unblocked for minor movements, p	(x)	(1 Single Proc	-stage		(2) Two-S ge I	tage Pr	(3) ocess Stage I	[]	
p(1) p(4) p(7) p(8) p(9) p(10) p(11) p(12)									
Computation Single-Stage Movement		1 L	4 . L	7 L	8 T	9 R	10 L	11 T	12 R
V c,x s Px V c,u,x			1348	1519		626			
C r,x C plat,x									
Two-Stage Pr	ocess								-
	Stage1	7 Stage2	Stage1	8 Stage	2 Sta	10 agel St	age2	1 Stage1	
V(c,x) s P(x)	1251	268 3000							

C(plat, x)

Worksheet 6-Impedance and Capacity Equation	ns	
Step 1: RT from Minor St.	9	12
Conflicting Flows	626	
Potential Capacity	482	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	482	
Probability of Queue free St.	0.99	1.00
Step 2: LT from Major St.	4	1
Conflicting Flows	1348	
Potential Capacity	507	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	507	
Probability of Queue free St.	0.92	1.00
Maj L-Shared Prob Q free St.		
Step 3: TH from Minor St.	8	11
Conflicting Flows		· · · · · · · · · · · · · · · · · · ·
Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.92	0.92
Movement Capacity		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Conflicting Flows	1519	
Potential Capacity	110	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.92
Maj. L. Min T Adj. Imp Factor.	•	0.94
Cap. Adj. factor due to Impeding mvmnt	0.92	0.93
Movement Capacity	101	

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
Part 1 - First Stage	,	
Conflicting Flows		
Potential Capacity	246	573
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.92
Movement Capacity	246	526
Probability of Queue free St.	1.00	1.00
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity	573	221
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.92	1.00
Movement Capacity	526	221

Part 3 - Single Stage Conflicting Flows



Potential Capacity Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mvmnt Movement Capacity	1.00 0.92	1.00 0.92
Result for 2 stage process:		
a	0.95	0.95
У С t		
Probability of Queue free St.	1.00	1.00
	1.00	1.00
Step 4: LT from Minor St.	7	10
Part 1 - First Stage		
Conflicting Flows	1251	
Potential Capacity	233	613
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.92
Movement Capacity	233	562
Part 2 - Second Stage		n
Conflicting Flows	268	
Potential Capacity	753	501
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.92	0.99
Movement Capacity	691	497
Part 3 - Single Stage		
Conflicting Flows	1519	
Potential Capacity	110	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.92
Maj. L, Min T Adj. Imp Factor.		0.94
Cap. Adj. factor due to Impeding mvmnt	0.92	0.93
Movement Capacity	101	
Results for Two-stage process:		
a	0.95	0.95
У	0.22	
Ct	216	

Worksheet 8-Shared Lane Calculations

Movement	7	8	9	10	11	12
	\mathbf{L}	т	R	L	т	R
Volume (vph)	9		4			
Movement Capacity (vph) Shared Lane Capacity (vph)	216		482			

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7	8	9	10	11	12
	I,	T	R	L	т	R
C sep	216		482	<u></u>		
Volume	9		4			
Delay						
Q sep						
Q sep +1						
7 (7)						

round (Qsep +1)

n max C sh SUM C sep n C act

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config		L	L		R			
v (vph)		42	9		4			
C(m) (vph)		507	216		482			
v/c		0.08	0.04		0.01			
95% queue length		0.27	0.13		0.03			
Control Delay		12.7	22.4		12.5			
LOS		В	С		В			
Approach Delay				19.4				
Approach LOS				С				

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	0.92
v(il), Volume for stream 2 or 5		
v(i2), Volume for stream 3 or 6		
s(il), Saturation flow rate for stream 2 or 5		
s(i2), Saturation flow rate for stream 3 or 6		
P*(oj)		
d(M,LT), Delay for stream 1 or 4		12.7
N, Number of major street through lanes		
d(rank,1) Delay for stream 2 or 5		

TWO-WAY STOP CONTROL SUMMARY___

Analyst: KHA Agency/Co.: KHA Date Performed: 12/15/2008 Analysis Time Period: A.M. Peak Hour Intersection: CR 40 & Heavy Haul Driveway Jurisdiction: Levy County Units: U. S. Customary Analysis Year: 2015 Peak Construction Traffic Project ID: Levy County Advanced Reactor - Heavy Haul Route 2 East/West Street: CR 40 North/South Street: Heavy Haul Driveway Intersection Orientation: EW Study period (hrs): 0.25

Major Street:	Approach	Eas	tbound		Wes	stbound		
···· j ···· ···························	Movement	1	2	3	4	5	6	
		L	T	R	L	T	R	
Volume		0	72	0	0	119	0	
Peak-Hour Fact	or, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly Flow Ra	te, HFR	0	75	0	0	125	0	
Percent Heavy	Vehicles	100			100			
Median Type/St	orage	Undivi	.ded		1			
RT Channelized				No				
Lanes		0	1	1	0	1	0	
Configuration		LI	R		L	ΓR		
Upstream Signa	.1?		No			No		
Minor Street:	Approach	Nor	thboun	d	Soi	uthboun	d	
	Movement	7	8	9	10	11	12	
		L	Т	R	Ĺ	т	R	
Volume		15	0	0	0	1	0	
Peak Hour Fact	or, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly Flow Ra	te, HFR	15	0	0	0	1	0	
Percent Heavy	Vehicles	100	100	100	100	100	100	
Percent Grade	(웅)		0			0		
Flared Approac	h: Exists?/	Storage		No	/		No	1
Lanes		Ō	1	0	0	1	0.	
Configuration			LTR			LTR		

Approach	_Delay, (EB	WB	h, and Level of Northbound		hound
Movement Lane Config	1 LT	4 7 LTR	8 9 LTR		L1. 12 GTR
v (vph)	0	0	15		<u>.</u>
C(m) (vph)	1026	1078	586	t,	553
v/c	0.00	0.00	0.03	(0.00
95% queue length	0.00	0.00	0.08	(0.01
Control Delay	8.5	8.3	11.3	-	11.5
LOS	А	А	В		В
Approach Delay			11.3		11.5
Approach LOS			В		В

Phone: E-Mail: Fax:

__TWO-WAY STOP CONTROL(TWSC) ANALYSIS__

KHA		
KHA		
12/15/2008	·	
A.M. Peak Hour		
CR 40 & Heavy Haul Driv	veway	
Levy County .		
Z		
2015 Peak Construction	Traffic	
nty Advanced Reactor - H	Heavy Haul Route 2	
CR 40		
Heavy Haul Driveway		
ion: EW	Study period (hrs):	0.25
	KHA 12/15/2008 A.M. Peak Hour CR 40 & Heavy Haul Driv Levy County Y 2015 Peak Construction	KHA 12/15/2008 A.M. Peak Hour CR 40 & Heavy Haul Driveway Levy County Y 2015 Peak Construction Traffic nty Advanced Reactor - Heavy Haul Route 2 CR 40 Heavy Haul Driveway

	Vehicle V	olumes	and Ad	justment	ts		
Major Street Movements	1	2	3	4	5	6	
	L	Т	R	L	т	R	
Volume	0	72	0	0	119	0	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Peak-15 Minute Volume	0	19	0	0	31	0	
Hourly Flow Rate, HFR	0	75	0	0	125	0	
Percent Heavy Vehicles	100			100			
Median Type/Storage	Undiv	vided		/			
RT Channelized?			No				
Lanes	0	1	1	0	1	0	
Configuration	$^{\cdot}$ L1	. I	ર	L	ſR		
Upstream Signal?		No			No		
Minor Street Movements	7	8	9	10	11	12	
	L	T	R	L	т	R	
Volume	15	0	0	0	1	0	· · · ·
Peak Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Peak-15 Minute Volume	4	0	0	0	.0	0	
Hourly Flow Rate, HFR	15	0	0	0	1	0	
Percent Heavy Vehicles	100	100	100	100	100	100	
Percent Grade (%)		0			0		
Flared Approach: Exist	s?/Storage	2	No	1		No	/
RT Channelized?				•			
Lanes	0	1	0	0	1	0	
Configuration		LTR			LTR		

edestrian Vo	olumes	and Adju	ustments	
13	14	15	16	
0	0	0	0	
12.0	12.0	12.0	12.0	
4.0	4.0	4.0	4.0	
. 0	0	0	0	
	13 0 12.0	13 14 0 0 12.0 12.0 4.0 4.0	13 14 15 0 0 0 12.0 12.0 12.0 4.0 4.0 4.0	0 0 0 0 12.0 12.0 12.0 12.0 4.0 4.0 4.0 4.0

		Up	stream Sig	ynal Dat	a		
	Prog. Flow Vph	Sat Flow vph			-	-	Distance to Signal feet
S2 Left-Turn							

Through

S5 Left-Turn

Through

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

	Movement 2	Movement 5
Shared ln volume, major th vehicles:	75	125
Shared ln volume, major rt vehicles:	0	0
Sat flow rate, major th vehicles:	1700	1700
Sat flow rate, major rt vehicles:	1700	1700
Number of major street through lanes:	1	1

Worksheet 4-Critical Gap and Follow-up Time Calculation

Critical Gap Cal	lculatio	on						
Movement	1	4	7	8	9	10	11	12
	L	L	L	т	R	L	т	R
t(c,base)	4.1	4.1	7.1	6.5	6.2	7.1	6.5	6.2
t(c,hv)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
P(hv)	100	100	100	100	100	100	100	100
t(c,g)			0.20	0.20	0.10	0.20	0.20	0.10
Percent Grade			0.00	0.00	0.00	0.00	0.00	0.00
t(3,1t)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t(c,T): 1-stage	e 0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-stage	e 0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
t(c) 1-stage	e 5.1	5.1	8.1	7.5	7.2	8.1	7.5	7.2
2-stag	е							
Follow-Up Time	Calculat	tions						
Movement	1	4	7	8	9	10	11	12
	L	\mathbf{L}	L	т	R	L	Т	R
t(f,base)	2.20	2.20	3.50	4.00	3.30	3.50	4.00	3.30
t(f,HV)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
P(HV)	100	100	100	100	100	100	100	100
t(f)	3.1	3.1	4.4	4.9	4.2	4.4	4.9	4.2

Worksheet 5-Effect of Upstream Signals

Computation	1-Queue	Clearance	Time	at	Upstream	Signal		
					Mov	vement 2	Mov	vement 5
					V(t)	V(l,prot)	V(t)	V(l,prot)

V prog Total Saturation Flow Rate, s (vph) Arrival Type Effective Green, g (sec) Cycle Length, C (sec) Rp (from Exhibit 16-11) Proportion vehicles arriving on green P



g(q1) g(q2) g(q)

Computation 2-Proport	ion of	TWSC Int	ersect					ь г
			v	Movem (t) V	ent 2 (1,prot		Movemen	t 5 ,prot)
					(=)p=0		, , , , , , , , , , , , , , , , , , ,	, proc,
alpha								
beta Translation t(s) (se	-							
Travel time, t(a) (se	C)							
Smoothing Factor, F								
Proportion of conflic		ow, f						
Max platooned flow, V								
Min platooned flow, V								
Duration of blocked p		t(p)						
Proportion time block	ed, p			0.0	00		0.000	
Computation 3-Platoor	Event	Periods	Re	sult				
 p(2)			0	000			÷	
p(5)			υ.	000				
p(dom)								
p(subo)								*
Constrained or uncons	trained	?						
Proportion				· ··· · ··· ·			······	
unblocked	(1)		(2)		(3)		
for minor		e-stage			tage Pi			
			<u>0</u> +		caye P		тт	
movements, p(x)	P1.0	cess	SC	age I		Stage	τŢ	
p(1)				<u>_</u>				
p(4)								
p(7)								
p(8)								
p(9)								
p(10)								
p(10)								
p(12)								
Computation 4 and 5			····		_,_,			
Single-Stage Process								
Movement	1	4	7	8	9	10	11	12
	L	L	L	т	R	L	т	R
				-				
V c,x	125	75	201	200	75	200	200	125
S								
Px								
V c,u,x								
C r,x				<u> </u>				
C plat,x								
Two-Stage Process						· · · · · · · · · · · · · · · · · · ·		
THE DEAGE TICEDD	7		8		10		1	1
Stage1	Stage2	Stage1		e2 Sta		tage2		Stage2
V(c,x)								
S	1500		1500	•	1	500		1500
P(x)								
P(x) V(c,u,x)								

C(plat, x)

Worksheet 6-Impedance and Capacity Equations 9 12 Step 1: RT from Minor St. 75 Conflicting Flows 125 Potential Capacity 770 717 Pedestrian Impedance Factor 1.00 1.00 Movement Capacity 770 717 Probability of Queue free St. 1.00 1.00 Step 2: LT from Major St. 4 1 Conflicting Flows 75 125 1078 Potential Capacity 1026 Pedestrian Impedance Factor 1.00 1.00 Movement Capacity 1078 1026 Probability of Queue free St. 1.00 1.00 Maj L-Shared Prob Q free St. 1.00 1.00 Step 3: TH from Minor St. 8 11 Conflicting Flows 200 200 Potential Capacity 553 553 Pedestrian Impedance Factor 1.00 1.00 Cap. Adj. factor due to Impeding mvmnt 1.00 1.00 Movement Capacity 553 553 Probability of Queue free St. 1.00 1.00 Step 4: LT from Minor St. 7 10 Conflicting Flows 201 200 Potential Capacity 587 588 Pedestrian Impedance Factor 1.00 1.00 Maj. L, Min T Impedance factor 1.00 1.00 Maj. L, Min T Adj. Imp Factor. 1.00 1.00 Cap. Adj. factor due to Impeding mvmnt 1.00 1.00 Movement Capacity 586 588

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St. 8 11 Part 1 - First Stage Conflicting Flows Potential Capacity Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mvmnt Movement Capacity Probability of Queue free St. Part 2 - Second Stage Conflicting Flows Potential Capacity Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mvmnt Movement Capacity Part 3 - Single Stage Conflicting Flows 200 200

1 1 5 	53 .00 .00 53 53 .00 7		553 1.00 1.00 553 553 1.00 10	
1 5 5	.00 53 53 .00		1.00 553 553 1.00	
. 5	53 53 .00		553 553 1.00	
. 5	53		553	
	.00	· · · · · · · · · · · · · · · · · · ·	1.00	
	.00	· · · · · · · · · · · · · · · · · · ·	1.00	
	.00	· · · · · · · · · · · · · · · · · · ·	1.00	
	.00		1.00	
	7		10	
		•		
				<u>.</u>
		• • •		
				<u>.</u>
2	01		200	
5	87		588	
1	0.0		1.00	
5	80		288	
	· · · · · ·	•		
5	86		588	
•				
8	9	10	11	12
т	R	L	\mathbf{T}^{-1}	R
· 0	0	0	1	0
				717
586			553	
ed Minor	Street	Approa	ches	
8	. 9	10	11	12
Т	R	L	T	R
553	770	588	552	717
				0
v	U	J,	-	
		•		
1 (F				
	5 1 1 1 1 5 5 5 5 5 5 6 4 Minor 8	T R 0 0 553 770 586 ed Minor Street 8 9 T R 553 770	$ \begin{array}{r} 587 \\ 1.00 \\ 1.00 \\ 1.00 \\ 586 \\ \end{array} $ $ \begin{array}{r} 586 \\ 586 \\ \hline 53 770 588 \\ 586 \\ \hline 6 & 9 10 \\ T R L \\ 0 & 0 \\ 553 770 588 \\ 586 \\ \hline 8 & 9 10 \\ T R L \\ 553 770 588 \\ \end{array} $	$ \begin{array}{ccccccccccccccccccccccccccccccccc$



n max C sh SUM C sep n C act

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config	\mathbf{LT}	LTR		LTR			LTR	
v (vph)	0	0	·	15			1	
C(m) (vph)	1026	1078		586			553	
v/c	0.00	0.00		0.03			0.00	
95% queue length	0.00	0.00		0.08			0.01	
Control Delay	8.5	8.3		11.3			11.5	
LOS	А	А		В			В	
Approach Delay				11.3			11.5	
Approach LOS				в			В	

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	1.00
v(il), Volume for stream 2 or 5	75	125
v(i2), Volume for stream 3 or 6	0	0
s(il), Saturation flow rate for stream 2 or 5	1700	1700
s(i2), Saturation flow rate for stream 3 or 6	1700	1700
P*(oj)	1.00	1.00
d(M,LT), Delay for stream 1 or 4	8.5	8.3
N, Number of major street through lanes	1	1
d(rank,1) Delay for stream 2 or 5	0.0	0.0

TWO-WAY STOP CONTROL SUMMARY

Analyst: KHA Agency/Co.: KHA Date Performed: 12/8/2008 Analysis Time Period: P.M. Peak Hour U.S. 19 & SR 121 Intersection: Jurisdiction: FDOT District 2 Units: U. S. Customary Analysis Year: 2015 Peak Construction Traffic Project ID: Levy County Advanced Reactor - Heavy Haul Route 2 SR 121 East/West Street: North/South Street: U.S. 19 Intersection Orientation: NS Study period (hrs): 0.25 _Vehicle Volumes and Adjustments_ Major Street: Approach Northbound Southbound 2 5 Movement 1 3 4 6 \mathbf{L} Т R · L т R Volume 192 416 20 170 Peak-Hour Factor, PHF 0.97 0.97 0.97 0.97 Hourly Flow Rate, HFR 197 20 428 175 Percent Heavy Vehicles - --4 Median Type/Storage Raised curb / 2 RT Channelized? No Lanes 2 1 1 2 Configuration т R т L Upstream Signal? No No Minor Street: Approach Westbound Eastbound Movement 7 8 9 10 12 11 L т R L т R Volume 9 121 Peak Hour Factor, PHF 0.97 0.97 Hourly Flow Rate, HFR 124 9 Percent Heavy Vehicles 1 1 Percent Grade (%) 0 0 Flared Approach: Exists?/Storage Lanes 1 1 Configuration R \mathbf{L} Delay, Queue Length, and Level of Service Approach NB SB Westbound Eastbound Movement 1 4 7 9 · 10 8 11 12 Lane Config L L R 20 9 v (vph) 124 C(m) (vph) 939 732 960 v/c 0.02 0.17 0.01 95% queue length 0.07 0.61 0.03 Control Delay 8.9 10.9 8.8 LOS А В А Approach Delay 10.8 Approach LOS В

Phone: E-Mail: Fax:

_TWO-WAY STOP CONTROL(TWSC) ANALYSIS___ Analyst: KHA Agency/Co.: KHA 12/8/2008 Date Performed: Analysis Time Period: P.M. Peak Hour U.S. 19 & SR 121 Intersection: Jurisdiction: FDOT District 2 Units: U. S. Customary 2015 Peak Construction Traffic Analysis Year: Project ID: Levy County Advanced Reactor - Heavy Haul Route 2 East/West Street: SR 121 North/South Street: U.S. 19 Study period (hrs): 0.25 Intersection Orientation: NS _Vehicle Volumes and Adjustments_ 5 Major Street Movements 1 2 3 4 6 L т R т L R Volume 20 170 192 416 Peak-Hour Factor, PHF 0.97 0.97 0.97 0.97 Peak-15 Minute Volume 107 44 49 5 Hourly Flow Rate, HFR 197 428 20 175 Percent Heavy Vehicles -----_ _ 4 Median Type/Storage Raised curb / 2 RT Channelized? No Lanes 2 1 1 2 Configuration т R L т Upstream Signal? No No Minor Street Movements 7 8 9 10 11 12 L т R т \mathbf{L} R Volume 121 9 Peak Hour Factor, PHF 0.97 0.97 Peak-15 Minute Volume 31 2 Hourly Flow Rate, HFR 124 9 Percent Heavy Vehicles 1 1 Percent Grade (%) 0 0 Flared Approach: Exists?/Storage RT Channelized? No Lanes 1 1 Configuration R \mathbf{L} _Pedestrian Volumes and Adjustments_ Movements 13 14 15 16 Flow (ped/hr) 0 0 0 0 Lane Width (ft) 12.0 12.0 12.0 12.0 Walking Speed (ft/sec) 4.0 4.0 4.0 4.0 Percent Blockage 0 0 0 0

		Prog. Flow vph	Sat Flow vph	Arriv Type	\mathbf{T}_{i}^{2}		Cycle Length sec	Prog. Speed mph	Distance to Signal feet
	left-Turn Through								
	eft-Turn Through								
Works	heet 3-Data	for Co	omputing	Effect	of De	lay to	Major S	Street V	ehicles
					I	loveme	nt 2	Moveme	nt 5
Sat f Sat f Numbe	ed ln volume low rate, ma low rate, ma er of major s sheet 4-Crit.	ajor th ajor ru street	n vehicl t vehicl through	es: es: lanes:	n Time	Calcu	lation		
	Cal Gap Cal								
Movem			4	7	8	9	10	11	12
10000		Ĺ	L	L	т	R	L	T	
		Ц	₩.,	1	1	A	1	T	R
t(c,k			4.1	7.5		6.2			
t(c,k t(c,h P(hv)	iv)	2.00			2.00	· · · ·	2.00	2.00	2.00
t(c,h P(hv) t(c,g	1)		4.1 2.00	7.5 2.00 1 0.20	2.00	6.2 2.00 1 0.10	2.00	2.00	2.00
t(c,h P(hv) t(c,g Perce	nv) g) ent Grade		4.1 2.00 4	7.5 2.00 1 0.20 0.00	2.00	6.2 2.00 1 0.10 0.00	2.00	2.00	2.00
t(c,h P(hv) t(c,g Perce t(3,1	uv) ent Grade .t)	2.00	4.1 2.00 4 0.00	7.5 2.00 1 0.20 0.00 0.70	2.00 0.20 0.00	6.2 2.00 1 0.10 0.00 0.00	2.00 0.20 0.00	2.00 0.20 0.00	2.00 0.10 0.00
t(c,h P(hv) t(c,g Perce	nv) ent Grade .t) ?): 1-stage	2.00	4.1 2.00 4 0.00 0.00	7.5 2.00 1 0.20 0.00 0.70 0.00	2.00 0.20 0.00 0.00	6.2 2.00 1 0.10 0.00 0.00 0.00	2.00 0.20 0.00 0.00	2.00 0.20 0.00 0.00	2.00 0.10 0.00 0.00
t(c,h P(hv) t(c,g Perce t(3,1 t(c,1	nv) ent Grade .t) ?): 1-stage 2-stage	2.00 0.00 0.00	4.1 2.00 4 0.00 0.00 0.00	7.5 2.00 1 0.20 0.00 0.70 0.00 1.00	2.00 0.20 0.00	6.2 2.00 1 0.10 0.00 0.00 0.00 0.00	2.00 0.20 0.00	2.00 0.20 0.00	2.00 0.10 0.00
t(c,h P(hv) t(c,g Perce t(3,1	nv) ent Grade .t) ?): 1-stage	2.00 0.00 0.00	4.1 2.00 4 0.00 0.00	7.5 2.00 1 0.20 0.00 0.70 0.00	2.00 0.20 0.00 0.00	6.2 2.00 1 0.10 0.00 0.00 0.00	2.00 0.20 0.00 0.00	2.00 0.20 0.00 0.00	2.00 0.10 0.00 0.00
t(c,h) P(hv) t(c,g Perce t(3,1 t(c,T t(c,T t(c)	ov) ent Grade .t) C): 1-stage 2-stage 1-stage 2-stage ow-Up Time C	2.00 0.00 0.00	4.1 2.00 4 0.00 0.00 0.00 4.2 4.2 4.2	7.5 2.00 1 0.20 0.00 0.70 0.00 1.00 6.8 5.8	2.00 0.20 0.00 0.00 1.00	$\begin{array}{c} 6.2\\ 2.00\\ 1\\ 0.10\\ 0.00\\ 0.00\\ 0.00\\ 0.00\\ 6.2\\ 6.2\\ 6.2 \end{array}$	2.00 0.20 0.00 0.00 1.00	2.00 0.20 0.00 0.00 1.00	2.00 0.10 0.00 0.00 0.00
t(c,h P(hv) t(c,g Perce t(3,1 t(c,T t(c)	ov) ent Grade .t) C): 1-stage 2-stage 1-stage 2-stage ow-Up Time C	2.00 0.00 0.00	4.1 2.00 4 0.00 0.00 0.00 4.2 4.2	7.5 2.00 1 0.20 0.00 0.70 0.00 1.00 6.8	2.00 0.20 0.00 0.00	6.2 2.00 1 0.10 0.00 0.00 0.00 0.00 6.2	2.00 0.20 0.00 0.00	2.00 0.20 0.00 0.00	2.00 0.10 0.00 0.00
t(c,h P(hv) t(c,g Perce t(3,l t(c,T t(c) Follc Movem	nv) ent Grade t) c): 1-stage 2-stage 2-stage ow-Up Time Conent	2.00 0.00 0.00 alculat	4.1 2.00 4 0.00 0.00 0.00 4.2 4.2 4.2 tions 4 L	7.5 2.00 1 0.20 0.00 0.70 0.00 1.00 6.8 5.8 7 L	2.00 0.20 0.00 0.00 1.00	6.2 2.00 1 0.10 0.00 0.00 0.00 6.2 6.2 9 R	2.00 0.20 0.00 0.00 1.00	2.00 0.20 0.00 0.00 1.00	2.00 0.10 0.00 0.00 0.00
t(c,h P(hv) t(c,g Perce t(3,1 t(c,T t(c) Follc Moven t(f,k	<pre>by) ent Grade t) f): 1-stage 2-stage 1-stage 2-stage bw-Up Time Comment base)</pre>	2.00 0.00 0.00 alculat 1 L	4.1 2.00 4 0.00 0.00 0.00 4.2 4.2 4.2 tions 4 L 2.20	7.5 2.00 1 0.20 0.00 0.70 0.00 1.00 6.8 5.8 7 L 3.50	2.00 0.20 0.00 0.00 1.00	6.2 2.00 1 0.10 0.00 0.00 0.00 6.2 6.2 9 R 3.30	2.00 0.20 0.00 1.00 10 L	2.00 0.20 0.00 1.00 11 T	2.00 0.10 0.00 0.00 0.00 12 R
t(c,h P(hv) t(c,g Perce t(3,l t(c,T t(c) Follc Movem	<pre>by) ent Grade t) f): 1-stage 2-stage 1-stage 2-stage bw-Up Time Consent base) IV)</pre>	2.00 0.00 0.00 alculat	4.1 2.00 4 0.00 0.00 0.00 4.2 4.2 4.2 tions 4 L	7.5 2.00 1 0.20 0.00 0.70 0.00 1.00 6.8 5.8 7 L	2.00 0.20 0.00 0.00 1.00	6.2 2.00 1 0.10 0.00 0.00 0.00 6.2 6.2 9 R	2.00 0.20 0.00 0.00 1.00	2.00 0.20 0.00 0.00 1.00	2.00 0.10 0.00 0.00 0.00
t(c,h P(hv) t(c,g Perce t(3,1 t(c,T t(c,T t(c) Follc Moven t(f,k t(f,F	<pre>by) ent Grade t) f): 1-stage 2-stage 1-stage 2-stage bw-Up Time Consent base) IV)</pre>	2.00 0.00 0.00 alculat 1 L	4.1 2.00 4 0.00 0.00 0.00 4.2 4.2 4.2 tions 4 L 2.20 1.00	7.5 2.00 1 0.20 0.00 0.70 0.00 1.00 6.8 5.8 7 L 3.50 1.00	2.00 0.20 0.00 0.00 1.00	6.2 2.00 1 0.10 0.00 0.00 0.00 6.2 6.2 9 R 3.30 1.00	2.00 0.20 0.00 1.00 10 L	2.00 0.20 0.00 1.00 11 T	2.00 0.10 0.00 0.00 0.00 12 R
t(c,h P(hv) t(c,g Perce t(3,1 t(c,T t(c,T t(c,T t(c,T t(c,T t(c) Moven t(f,k t(f,F P(HV) t(f)	<pre>by) ent Grade t) f): 1-stage 2-stage 1-stage 2-stage bw-Up Time Consent base) IV)</pre>	2.00 0.00 0.00 alculat 1 L 1.00	4.1 2.00 4 0.00 0.00 0.00 4.2 4.2 4.2 tions 4 L 2.20 1.00 4 2.2	7.5 2.00 1 0.20 0.00 0.70 0.00 1.00 6.8 5.8 7 L 3.50 1.00 1 3.5	2.00 0.20 0.00 1.00 8 T 1.00	6.2 2.00 1 0.10 0.00 0.00 0.00 6.2 6.2 9 R 3.30 1.00 1	2.00 0.20 0.00 1.00 10 L	2.00 0.20 0.00 1.00 11 T	2.00 0.10 0.00 0.00 0.00 12 R

Movement 2

V(t) V(l,prot) V(t) V(l,prot)

Movement 5

V prog Total Saturation Flow Rate, s (vph) Arrival Type Effective Green, g (sec) Cycle Length, C (sec) Rp (from Exhibit 16-11) Proportion vehicles arriving on green P g(q1) g(q2) g(q)

Computation 2-F	roport	ion of T	WSC Inte	ersecti		ne bloc nent 2		Movemen	+ 5
				V (/(l,prot			,prot)
alpha beta									
Travel time, t(a) (se	c)							
Smoothing Facto		-,							
Proportion of c		ting flo	w.f						
Max platooned f			., -						
Min platooned f									
Duration of blo			(n)						
Proportion time			(2)		0 0	000		0.000	
Computation 3-E	Platoon	Event P	eriods	Res	ılt				
p(2)				0.0					
p(5)				0.0	00				
p(dom)									
p(subo)									
Constrained or	uncons	trained?							
Proportion			`		(0)				
unblocked		(1			(2)	~· .	(3)		
for minor		_	-stage	- .		Stage Pi		-	
movements, p(x)		Proc	ess	Sta	ge I		Stage	II	
p(1)						,			
p(4)									
p(7)									
p(8)									
p(9)									
p(10)									
p(11)									
p(12)									
D(12)									
Computation 4 a									
Single-Stage Pr	ocess								
Movement		1	4	7	8	9	10	11	12
		L	L	L	\mathbf{T}	R	L	т	R
			<u> </u>	204		0.0			
Vc,x			625	324		98			
S									
Px									
V c,u,x									
C r,x									-
C plat,x									
Two-Stage Proce	ess								
_		7		8		10		1	1
5	Stage1	Stage2	Stage1	Stage	2 St	agel S	tage2	Stage1	Stage2
V(c,x)	L97	127							·····
S		3000							
P(x)									
V(c,u,x)									

C(plat,x)

Step 1: RT from Minor St.	9	12
Conflicting Flows	98	
Potential Capacity	960	•
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	960	• .
Probability of Queue free St.	0.99	1.00
Step 2: LT from Major St.	4	1
Conflicting Flows	625	
Potential Capacity	939	•
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	939	
Probability of Queue free St.	0.98	1.00
Maj L-Shared Prob Q free St.	, -	
Step 3: TH from Minor St.	8	11
Conflicting Flows	· · ·	
Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt Movement Capacity	0.98	0.98
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Conflicting Flows	324	· · · · · ·
Potential Capacity	647	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.98
Maj. L, Min T Adj. Imp Factor.		0.98
Cap. Adj. factor due to Impeding mvmnt	0.98	0.97
Movement Capacity	633	*

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
Part 1 - First Stage		· · · · · · · · · · · · · · · · · · ·
Conflicting Flows		
Potential Capacity	742	729
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.98
Movement Capacity	742	713
Probability of Queue free St.	1.00	1.00
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity	729	480
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.98	1.00
Movement Capacity	713	480

Conflicting Flows

Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt Movement Capacity	0.98	0.98
Result for 2 stage process:		
a	0.95	0.95
У		
Ct		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Part 1 - First Stage		
Conflicting Flows	197	
Potential Capacity	820	806
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.98
Movement Capacity	820	789
Part 2 - Second Stage		
Conflicting Flows	127	
Potential Capacity	888	921
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.98	0.99
Movement Capacity	869	912
Part 3 - Single Stage		
Conflicting Flows	324	
Potential Capacity	647	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.98
Maj. L, Min T Adj. Imp Factor.		0.98
Cap. Adj. factor due to Impeding mvmnt	0.98	0.97
Movement Capacity	633	
Results for Two-stage process:		
a	0.95	0.95
У	0.79	
Ct	732	
	152	

Worksheet 8-Shared Lane Calculations

Movement	7	8	9	10	11	12
	\mathbf{L}	T	R	L	Т	R
Volume (vph)	124		9			
Movement Capacity (vph) Shared Lane Capacity (vph)	732		960			

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7	8	9	10	11	12
	L	Ţ	R	L	Т	R
C sep	732		960	·····		
C sep Volume	124		9			
Delay						
Q sep						

Q sep +1

round (Qsep +1)

n max C sh SUM C sep n C act

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config		L	L		R			
v (vph)		20	124		9			
C(m) (vph)		939	732		960			
v/c		0.02	0.17		0.01			
95% queue length		0.07	0.61		0.03			
Control Delay		8.9	10.9		8.8			
LOS		A	В		А			
Approach Delay				10.8				
Approach LOS				В				

Worksheet 11-Shared Major LT Impedance and Delay

Movement 2Movement 5p(oj)1.000.98v(i1), Volume for stream 2 or 51.000.98v(i2), Volume for stream 3 or 655s(i1), Saturation flow rate for stream 2 or 556s(i2), Saturation flow rate for stream 3 or 678.9P*(oj)08.98.9N, Number of major street through lanes8.9d(rank,1) Delay for stream 2 or 55

Analyst: KHAInter.: U.S. 19 & CR 40Agency: KHAArea Type: All other areasDate: 12/8/2008Jurisd: FDOT District 2Period: P.M. Peak HourYear : 2015 Peak Construction TrafficProject ID: Levy County Advanced Reactor - Heavy Haul Route 2E/W St: CR 40/Follow That Dream PkwyN/S St: U.S. 19

	Eas	stbound	Westh	bound	Nor	thbou	nd	Sou	thbo	und	- 1
	L	TR	L I	r R	L	т	R	L	т	R	
No. Lane	es 0	1 1	0	1 1	_	2	0	1	2	0	
LGConfig			U	LT R		Z TR	· · ·	Ľ	Z TR	U	
Volume		1	71 61				100			20	
	27				1			124	1209	30	
Lane Wid		12.0 12.0	12	2.0 12.0	12.0			12.0	12.0	_	1
RTOR Vol	• _ ,	24		19	1		33			5	
Duration	0.25	Area I		ll other al Opera							
Phase Co	mbination	n 1 2	Bigin	4	<u></u>	5	6	7		8	
EB Left	:	А		NB	Left	А					
Thru	L	A		Ì	Thru		А				
Righ	it	A			Right		A				
Peds					Peds						
WB Left		А		SB		А					
Thru		A			Thru	~*	А				
Righ	-	A			Right		A				
Peds					Peds		11				
NB Righ				EB							
SB Righ				WB							
SB RIGH Green	1.	9.5		I MR	Right		25.5				
		2.5				10.0	∠⊃.⊃				
VOLLETT		4 0					4 0				
		4.0				4.0	4.0				
		4.0				4.0 1.0	1.0		60.0		sec
		1.0 Intersec	tion Pe	erforman	ce Summ	4.0 1.0 Cyc	1.0 le Len		60.0		sec
All Red	Lane	1.0	tion Pe Rat:		ce Summ Lane	4.0 1.0 Cyc ary	1.0 le Len				sec
All Red	Lane Group	1.0 Intersec			Lane	4.0 1.0 Cyc ary Group	1.0 le Len App	gth:			sec
All Red Appr/ Lane		1.0 Intersec Adj Sat Flow Rate				4.0 1.0 Cyc ary Group	1.0 le Len App	gth:	ב		sec
All Red Appr/ Lane Grp	Group Capacity	1.0 Intersec Adj Sat Flow Rate	Rat	ios	Lane	4.0 1.0 Cyc ary Group	1.0 le Len App	gth: proach	ב		sec
All Red Appr/ Lane Grp Eastboun	Group Capacity	1.0 Intersec Adj Sat Flow Rate	Rat	ios	Lane	4.0 1.0 Cyc ary Group	1.0 le Len App	gth: proach y LOS	ב		sec
All Red Appr/ Lane Grp Eastboun LT	Group Capacity nd 287	1.0 Intersec Adj Sat Flow Rate (s) 1640	Rat: 	ios g/C 0.17	Lane Delay 22.6	4.0 1.0 Cyc ary Group LOS	1.0 le Len App Dela	gth: proach y LOS	ב		sec
All Red Appr/ Lane Grp Eastboun LT R	Group Capacity nd 287 277	1.0 Intersec Adj Sat Flow Rate (s)	Rat: v/c	ios g/C	Lane Delay	4.0 1.0 Cyc ary Group	1.0 le Len App Dela	gth: proach y LOS	ב		sec
Lane Grp Eastboun LT R Westboun	Group Capacity nd 287 277 nd	1.0 Intersec Adj Sat Flow Rate (s) 1640 1583	Rat: v/c	0.17 0.17	Lane Delay 22.6 21.7	4.0 1.0 Cyc Group LOS C C	1.0 le Len App Dela 22.3	gth: proach y LOS C	ב		Seci
All Red Appr/ Lane Grp Eastboun LT R Westboun LT	Group Capacity nd 287 277 nd 253	1.0 Intersec Adj Sat Flow Rate (s) 1640 1583 1444	Rat: v/c 0.37 0.23 0.56	ios g/C 0.17 0.17 0.17	Lane 	4.0 1.0 Cyc Group LOS C C	1.0 le Len App Dela	gth: proach y LOS C	ב		sec
All Red Appr/ Lane Grp Eastboun LT R Westboun LT R	Group Capacity ad 287 277 ad 253 277	1.0 Intersec Adj Sat Flow Rate (s) 1640 1583	Rat: v/c	0.17 0.17	Lane Delay 22.6 21.7	4.0 1.0 Cyc Group LOS C C	1.0 le Len App Dela 22.3	gth: proach y LOS C	ב		sec
All Red Appr/ Lane Grp Eastboun LT R Westboun LT R Northbou	Group Capacity ad 287 277 ad 253 277 and	1.0 Intersec Adj Sat Flow Rate (s) 1640 1583 1444 1583	Rat: v/c 0.37 0.23 0.56 0.15	0.17 0.17 0.17 0.17 0.17	Lane Delay 22.6 21.7 25.4 21.2	4.0 1.0 Cyc Group LOS C C C	1.0 le Len App Dela 22.3	gth: proach y LOS C	ב		sec
All Red Appr/ Lane Grp Eastboun LT R Westboun LT R Northbou L	Group Capacity id 287 277 id 253 277 ind 321	1.0 Intersec Adj Sat Flow Rate (s) 1640 1583 1444 1583 1752	Rat: v/c 0.37 0.23 0.56 0.15 0.41	0.17 0.17 0.17 0.17 0.17 0.18	Lane Delay 22.6 21.7 25.4 21.2 22.5	4.0 1.0 Cyc Group LOS C C C C	1.0 le Len Dela 22.3 24.4	gth: roach y LOS C	ב		Sec
All Red Appr/ Lane Grp Eastboun LT R Westboun LT R Northbou L	Group Capacity ad 287 277 ad 253 277 and	1.0 Intersec Adj Sat Flow Rate (s) 1640 1583 1444 1583	Rat: v/c 0.37 0.23 0.56 0.15	0.17 0.17 0.17 0.17 0.17	Lane Delay 22.6 21.7 25.4 21.2	4.0 1.0 Cyc Group LOS C C C	1.0 le Len App Dela 22.3	gth: roach y LOS C	ב		sec
All Red Appr/ Lane Grp Eastboun LT R Westboun LT R Northbou L TR	Group Capacity ad 287 277 ad 253 277 and 321 1516	1.0 Intersec Adj Sat Flow Rate (s) 1640 1583 1444 1583 1752	Rat: v/c 0.37 0.23 0.56 0.15 0.41	0.17 0.17 0.17 0.17 0.17 0.18	Lane Delay 22.6 21.7 25.4 21.2 22.5	4.0 1.0 Cyc Group LOS C C C C	1.0 le Len Dela 22.3 24.4	gth: roach y LOS C	ב		sec
All Red Appr/ Lane Grp Eastboun LT R	Group Capacity ad 287 277 ad 253 277 and 321 1516	1.0 Intersec Adj Sat Flow Rate (s) 1640 1583 1444 1583 1752	Rat: v/c 0.37 0.23 0.56 0.15 0.41	0.17 0.17 0.17 0.17 0.17 0.18	Lane Delay 22.6 21.7 25.4 21.2 22.5	4.0 1.0 Cyc Group LOS C C C C	1.0 le Len Dela 22.3 24.4	gth: roach y LOS C	ב		sec
All Red Appr/ Lane Grp Eastboun LT R Westboun LT R Northbou L TR Southbou	Group Capacity ad 287 277 ad 253 277 and 321 1516 and	1.0 Intersec Adj Sat Flow Rate (s) 1640 1583 1444 1583 1752 3433	Rat: v/c 0.37 0.23 0.56 0.15 0.41 0.34	0.17 0.17 0.17 0.17 0.17 0.18 0.44	Lane Delay 22.6 21.7 25.4 21.2 22.5 11.1	4.0 1.0 Cyc Group LOS C C C C C B	1.0 le Len Dela 22.3 24.4	gth: proach y LOS C C B	ב		sec

HCS+: Signalized Intersections Release 5.3

Phone: E-Mail: Fax:

OPERATIONAL ANALYSIS

Analyst: KHA Agency/Co.: KHA Date Performed: 12/8/2008 Analysis Time Period: P.M. Peak Hour Intersection: U.S. 19 & CR 40 Area Type: All other areas Jurisdiction: FDOT District 2 Analysis Year: 2015 Peak Construction Traffic Project ID: Levy County Advanced Reactor - Heavy Haul Route 2 E/W St: CR 40/Follow That Dream Pkwy N/S St: U.S. 19

				<u></u> r	JOLUMI	e data						
	Eas	stbou	nd	Wes	stbou	nd	No:	rthbo	und	So	uthboi	ınd
	ь	т	R	L	т	R	L	Т	R	L	т	R
Volume	27	71	83	71	61	58	123	414	106	124	1209	30
% Heavy Veh	2	2	2	2	2	2	3	3	3	3	3	3
PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PK 15 Vol Hi Ln Vol	7	19	22	19 	16	15	33	110	28	33	322	8
% Grade	Ì	0		İ.	0		i	0		İ	0	
Ideal Sat	ĺ	1900	1900	İ	1900	1900	1900	1900		1900	1900	
ParkExist	1											
NumPark							1					
No. Lanes	0	1	1	0	1	1	1	2	0	1	2	0
LGConfig		LT	R		LT	R	L	TR		L	TR	
Lane Width		12.0	12.0		12.0	12.0	12.0	12.0		12.0	12.0	
RTOR Vol	Ì		24	ĺ		19	İ		33	i		5
Adj Flow	ĺ	105	63	İ	141	41	131	518		132	1313	
%InSharedLn	ĺ			İ			i i			i		
Prop LTs	İ	0.2	76	İ	0.5	39	i	0.0	00	i	0.0	00
Prop RTs	0	.000	1.000	j o	.000	1.000	j o	.151		j o	.021	
Peds Bikes	j o			j o			j o			i o		
Buses	İ	0	0	i	0	0	0	0		İo	0	
%InProtPhase	e			i			i i			i		
Duration	0.25		Area '	Type:	All (other	areas					

OPERATING PARAMETERS

	Eastbound			We	Westbound		No	Northbound			Southbound		
	L	т	R	L	T	R	L	т	R	L	т	R	
Init Unmet		0.0	0.0		0.0	0.0	-	0.0		0.0	0.0		
Arriv. Type		3	3		3	3	3	3		3	3		
Unit Ext.		3.0	3.0	İ	3.0	3.0	3.0	3.0		3.0	3.0	i	
I Factor		1.00	0	1	1.00	0	1	1.000)	1	1.000	ĺ	
Lost Time		2.0	2.0	}	2.0	2.0	2.0	2.0		2.0	2.0	j	
Ext of g		3.0	3.0	1	3.0	3.0	3.0	3.0		3.0	3.0	j	
Ped Min g		3.2		1	3.2		1	3.2			3.2		
					PHAS	E DAT	A						
											· · ·		
Phase Combir	natic	on 1	2	3	4	:		5	6	7	8		

EB	Left Thru Right Peds	А А А	NB	Left Thru Right Peds	A	A A
WB	Left Thru Right Peds	A A A	SB	Left Thru Right Peds	А	A A
NB	Right		EB	Right		
SB	Right		WB	Right		
Gre Yel All		9.5 4.0 1.0	I		10.0 4.0 1.0	25.5 4.0 1.0

Cycle Length: 60.0 secs

thbound
TR
1209 30
0.94 0.94
1286 27
2 0
TR
1313
0.000
021
1 1 1

Saturatio	on Flow Ra	ate (see E:	xhibit 1	6-7 to	deteri	mine the	adjustment	factors)
	Eastbound	ı E	Westbound	d	Nort	thbound	Sout	hbound
LG	LT	R	LT	R	\mathbf{L}	TR	L	TR
So	1900	1900	1900	1900	1900	1900	1900	1900
Lanes O	1	1 0	1	1	1	2 0	1	2 0
fW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
fHV	0.980	0.980	0.980	0.980	0.971	0.971	0.971	0.971
fG	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
fP	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
fBB	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
fA	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
fLU	1.000	1.000	1.000	1.000	1.000	0.952	1.000	0.952
fRT	1.000	0.850	1.000	0.850		0.977		0.997
fLT	0.880		0.775		0.950	1.000	0.950	1.000
Sec.								
fLpb	1.000		1.000		1.000	1.000	1.000	1.000
fRpb	1.000	1.000	1.000	1.000		1.000		1.000
S	1640	1583	1444	1583	1752	3433	1752	3501
Sec.								
		CA	PACITY A	ND LOS	WORKS	HEET		
Capacity	Analysis	and Lane (Group Ca	pacity				
		Adj	Adj	Sat :	Flow	Green	Lane G	roup
Appr/	Lane	Flow Rat	e Flow	Rate :	Ratio	Ratio	Capacity	v/c
Mvmt	Group	(v)	(s)	(v/s)	(g/C)	(c)	Ratio

Eastbound Prot

•	R 0.23 Westbound LT 0.56 R 0.15 Northbound L 0.41 TR 0.34 Southbound L 0.41 TR 0.85	0.17 0.17 0.17 0.18 0.44 0.18 0.44	Del d1 21.8 21.3 22.6 21.0 21.6 11.0 21.6 15.0	Adj Fact 1.000 1.000 1.000 1.000 1.000 1.000 1.000	Lane Grp Cap 287 277 253 277 321 1516 321 1546	Increm Factor k 0.11 0.11 0.15 0.11 0.11	Del d2 0.8 0.4 2.7 0.2 0.8 0.1 0.9 4.7	0.0 0.0 0.0 0.0 0.0	Dela 22.6 21.7 25.4 21.2 22.5 11.1 22.5 19.7	C C C B C B	24.4 13.4 19.9	
•	Grp v/c Eastbound LT 0.37 R 0.23 Westbound LT 0.56 R 0.15 Northbound L 0.41 TR 0.34 Southbound L 0.41 TR 0.85	0.17 0.17 0.17 0.17 0.18 0.44 0.18 0.44	Del d1 21.8 21.3 22.6 21.0 21.6 11.0 21.6 15.0	Adj Fact 1.000 1.000 1.000 1.000 1.000 1.000 1.000	Lane Grp Cap 287 277 253 277 321 1516 321 1546	Increm Factor k 0.11 0.11 0.15 0.11 0.11 0.11 0.11 0.38	Del d2 0.8 0.4 2.7 0.2 0.8 0.1 0.9 4.7	Del d3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Dela 22.6 21.7 25.4 21.2 22.5 11.1 22.5 19.7	C C C C C B C B C B	Delay 22.3 24.4 13.4 19.9	C C B
•	Grp v/c Eastbound LT 0.37 R 0.23 Westbound LT 0.56 R 0.15 Northbound L 0.41 TR 0.34 Southbound L 0.41	0.17 0.17 0.17 0.17 0.18 0.44 0.18	Del d1 21.8 21.3 22.6 21.0 21.6 11.0 21.6	Adj Fact 1.000 1.000 1.000 1.000 1.000 1.000	Lane Grp Cap 287 277 253 277 321 1516 321	Increm Factor k 0.11 0.11 0.15 0.11 0.11 0.11 0.11	Del d2 0.8 0.4 2.7 0.2 0.8 0.1 0.9	Del d3 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Dela 22.6 21.7 25.4 21.2 22.5 11.1 22.5	C C C C C C B C C C C C C C C C C C C C	Delay 22.3 24.4 13.4	C C B
	Grp v/c Eastbound LT 0.37 R 0.23 Westbound LT 0.56 R 0.15 Northbound L 0.41 TR 0.34	0.17 0.17 0.17 0.17 0.17 0.18 0.44	Del d1 21.8 21.3 22.6 21.0 21.6	Adj Fact 1.000 1.000 1.000 1.000 1.000	Lane Grp Cap 287 277 253 277 321	Increm Factor k 0.11 0.11 0.15 0.11 0.11	Del d2 0.8 0.4 2.7 0.2 0.8	Del d3 0.0 0.0 0.0 0.0 0.0	Dela 22.6 21.7 25.4 21.2 22.5	C C C C C C C C C	Delay 22.3 24.4	C C
	Grp v/c Eastbound LT 0.37 R 0.23 Westbound LT 0.56 R 0.15 Northbound	0.17 0.17 0.17 0.17	Del d1 21.8 21.3 22.6 21.0	Adj Fact 1.000 1.000 1.000 1.000	Lane Grp Cap 287 277 253 277	Increm Factor k 0.11 0.11 0.15 0.11	Del d2 0.8 0.4 2.7 0.2	Del d3 0.0 0.0 0.0	Dela 22.6 21.7 25.4 21.2	C C C C C C	Delay 22.3 24.4	C LO
	Grp v/c Eastbound LT 0.37 R 0.23	0.17	Del d1 21.8	Adj Fact 1.000	Lane Grp Cap 287	Increm Factor k 0.11	Del d2 0.8	Del d3 0.0	 Dela 22.6	ty LOS	Delay	r LO
	Grp v/c	g/C	Del	Adj	Lane Grp	Increm Factor	Del	Del				
		g/C	Del	Adj	Lane Grp	Increm Factor	Del	Del				.
	T.ane			÷.	Lane	Increm			Lane	Group	Appro	ach
	Total lost Critical f Control De Appr/ Rat	low ra	te to	capacit Determi	y rat	io,		: = (Yc	:)(C)/(C-L) =	0.69	
	Sum of flow							: = 5	Sum (v/	's) =	0.55	
	Perm Thru Right	P R	1	313 .	35	01 #	0.38	0.	44	1546	0.85	
	Perm Left I Prot	L	1	32	17	52 #	0.08	0.	18 '	321	0.41	
	Southbound Prot					·						
	Perm Thru I Right	R	5	18	34	33 -	0.15	0.	44	1516	0.34	
	Left I Prot	L	1	31 ,	17!	52	0.07	0.	18	321	0.41	,
	Northbound Prot Perm			· ,					•			
	Thru I Right F	/Т {	1 4	41 1	144 158		0.10 0.03			253 277 .	0.56 0.15	
	Left Prot Perm										· ,	
	Westbound Prot Perm				r				×	•		
	Thru I Right F	μ T	1 6	05 3	164 158		0.06 0.04		17 17	287 277	0.37 0.23	
	Perm											
	Left Prot											

Analyst: KHAInter.: U.S. 19 & Construction AccessAgency: KHAArea Type: All other areasDate: 12/11/2008Jurisd: FDOTPeriod: P.M. Peak HourYear : 2015 Peak Construction TrafficProject ID: Levy County Advanced Reactor - Heavy Haul Route 2E/W St: Construction AccessN/S St: U.S. 19

		E	ast	bou	nd	Wes	stbou	nd	Nor	thbou	ind	So	lthbou	nd	
		L		Т	R	L	т	R	L	т	R	L	т	R	
No.	Lanes		0	0	0	2	0	1	0	2	1	2	2	0	
LGCc	onfig	ĺ				L		R		т	R	ĹL	т		Ì
Volu	ıme	Ì				900		385		322	105	45	333		i
Lane	e Width	ı İ				12.0		12.0	1	12.0	12.0	12.0	12.0		i
RTOR	R Vol	1				1		0	Ì		0	Ì			İ
Dura	ation	0.2	5		Area 7	Type:	A11	other	areas						
<u></u>						Sig	ynal	Operat	ions						
	se Comb	oinati	on	1	2	3	· 4			5	6	7	8	}	
	Left							NB	Left						
	Thru								Thru		А				
	Right								Right		А				
	Peds								Peds						
WB	Left			А				SB	Left						
	Thru								Thru		A				
	Right			А					Right						
	Peds								Peds						
	Right			A				EB	Right						
	Right							WB	Right			•			
Gree			-	5.0						10.0		-			
	Low			.0						4.0					
ALL	Red		Ŧ	0						1.0					
				-	~ + ~ ~ ~ ~ ~	ation	Dowf	ormone	e Summ	.*	cle Le	-	120.0	} 5	secs
Appr	c/ T.	ane						ormanc S				proac			
Lane		roup			y Sat w Rate			b	Darre	Grouj	é vh	proac			
Grp		-			(s)		c	1/C	Delay	1.0.5	- <u>-</u>	ay LO	s		
312		~pucit	- <u>x</u>		(0)	v / C	S.	,, C	Derdy	100	DCT	~1 10	~		

	_								
Westbo									
L	1031	3437	0.92	0.30	53.3	D			
							45.8	D	
R	673	1583	0.60	0.43	28.2	С			
Northb	ound								
			, š						
т	1768	3478	0.19	0.51	16.1	В	12.6	В	
R	1332	1583	0.08	0.84	1.6	А			
Southb	ound								
L	315	3437	0.15	0.09	50.4	D			
Т	2203	3478	0.16	0.63	9.0	А	13.9	В	
	Interse	ction Dela	y = 33.2	(sec/v	veh) II	nters	ection 1	LOS =	С

HCS+: Signalized Intersections Release 5.3

Phone: E-Mail: Fax:

OPERATIONAL ANALYSIS

Analyst: KHA KHA Agency/Co.: Date Performed: 12/11/2008 Analysis Time Period: P.M. Peak Hour Intersection: U.S. 19 & Construction Access Area Type: All other areas Jurisdiction: FDOT 2015 Peak Construction Traffic Analysis Year: Project ID: Levy County Advanced Reactor - Heavy Haul Route 2 E/W St: Construction Access N/S St: U.S. 19

	Eas	stbou	nd	Wes	tbo	und	No	rthbo	und	So	uthbou	ınd
	L	т	R	L \	Т	R	L	т	R	L	т	R
Volume				900		385		322	105	45	333	
% Heavy Veh	ĺ			2		2		4	2	2	4	
PHF	ĺ			0.95		0.95		0.95	0.95	0.95	0.95	
PK 15 Vol	ĺ			237		101		85	28	12	88	
Hi Ln Vol	ĺ			ĺ			ĺ			j .		
% Grade					0			0 .		-	0	
Ideal Sat				1900		1900		1900	1900	1900	1900	
ParkExist												
NumPark										1		
No. Lanes	0	0	0	2	0	1	0	2	1	2	2	0
LGConfig				L		R		т	R	L	т	
Lane Width				12.0		12.0	1	12.0	12.0	12.0	12.0	
RTOR Vol						0			0			
Adj Flow				947		405		339	111 -	47	351	
%InSharedLn	l											
Prop LTs								0.0	00		0.00	00
Prop RTs						1.000	0	.000	1.000	0	.000	
Peds Bikes	0			0			0					
Buses				0		0		0	0	0	0	
%InProtPhase	Ð											
Duration	0.25		Area	Type:	A11	other a	areas					

____VOLUME DATA_

OPERATING PARAMETERS

	Ea	stbou	nd	We	stboi	ınd	No	orthbo	und	So	uthbou	ind
	L	т	R	L	т	R	L	т	R	L	т	R
Init Unmet	 			0.0		0.0	. 	0.0	0.0	0.0	0.0	
Arriv. Type	İ			3		3	Ì	3	3	3	3	
Unit Ext.	Ì			3.0		3.0	i	3.0	3.0	3.0	3.0	
I Factor	Ì			i	1.00	00	i.	1.00	0	İ	1.000)
Lost Time	İ			2.0		2.0	i	2.0	2.0	2.0	2.0	
Ext of g	İ			3.0		3.0	Í	3.0	3.0	3.0	3.0	
Ped Min g	İ	3.2			3.2		İ	3.2		İ		

 Phase Combination 1
 2
 3
 4
 5
 6
 7
 8

EB	Left Thru Right Peds		NB 	Left Thru Right Peds		A A
WB	Left Thru Right Peds	A	SB 	Left Thru Right Peds	A A	A
NB	Right	А	' EB	Right		
ND.	itigiit	A.		Rigiic		
SB	Right		WB	Right	A	
	en low Red	35.0 4.0 1.0	ļ		10.0 4.0 1.0	60.0 4.0 1.0

Cycle Length: 120.0 secs

Volume Adjus	stmen		ME AD	JUSTMEN	T AN	ID SATU	RATIC	ON FLO	W WORK	SHEET		
		stbou	nd	Wes	tbou	ınd	No	orthbo	und	Southbound		
	L	т	R	L	Т	R	L	т	R	L	т	R
Volume, V				900		385	 	322	105	45	333	
PHF	İ			0.95		0.95	Í	0.95	0.95	0.95	0.95	
Adj flow	1			947		405	İ	339	111	47	351	
No. Lanes	0	0	0	2	0	1	j) 2	1	j [•] 2	2	0
Lane group				L		R	İ	т	R	ĹL	т	
Adj flow	1			947		405		339	111	47	351	
Prop LTs]						1	0.0	00		0.0	00
Prop RTs	1			1		1.000) (0.000	1.000	0	.000	

Saturatio	n Flow R	ate (s	ee Exh	ibit	16-7	to	deter	nine t	he adju	ustmen	t facto	ors)
	Eastboun	d	We	stboı	ınd		Nor	thboun	d	Sou	thbound	E
LG			\mathbf{L}		R			т	R	L	Т	
So			1900		1900	0		1900	1900	1900	1900	
Lanes O	0	0	2	0	1		0	2	1	2	2	0
fW			1.000		1.00	00		1.000	1.000	1.000	1.000	
fhv			0.980	•	0.9	80		0.962	0.980	0.980	0.962	
fG			1.000		1.0	00		1.000	1.000	1.000	1.000	
fP			1.000		1.0	00		1.000	1.000	1.000	1.000	
fBB			1.000		1.0	00		1.000	1.000	1.000	1.000	
fA			1.000		1.0	00		1.000	1.000	1.000	1.000	
fLU			0.971		1.0	00		0.952	1.000	0.971	0.952	
fRT					0.8	50		1.000	0.850		1.000	
fLT			0.950					1.000		0.950	1.000	
Sec.												
fLpb			1.000					1.000		1.000	1.000	•
fRpb					1.0	00		1.000	1.000		1.000	
S			3437		158	3		3478	1583	3437	3478	
Sec.												
			CAPA	CITY	AND LO	os	WORKS	HEET				
Capacity	Analysis	and L	ane Gr	oup (Capaci	ty						
		A	dj	Ad	j Sat	F	low	Gre	en:	Lane G	roup	
Appr/	Lane	Flow	Rate	Flow	w Rate	R	atio	Rat	io Caj	pacity	v/c	
Mvmt	Group	(`	V)		(s)	(v/s)	(g/	C)	(c)	Ratio	C

Eastbound Prot

	Prot Perm											
	Thru											
	Right											
Wes	tbound	E										
	Prot											
	Perm											
	Left	L .	9	47	34	37 #	0.28	0.	30	1031	0.92	
	Prot											
	Perm Thru											
	Right	R	1	05	15	02	0.26	0	43	673	0.60	
	thbour		4	05	15	00	0.20	0.	.43	0/3	0.60	
NOL	Prot	10										
	Perm											
	Left											
	Prot											
	Perm											
	Thru	T	3	39	34	78 #	0.10	0.	51	1768	0.19	
	Right	R	1	11	15	83	0.07	0.	84	1332	0.08	
Sou	thbour	nd										
	Prot											
	Perm											
	Left	\mathbf{L}	. 4	.7	34	37 #	0.01	0.	.09	315	0.15	
	Prot											
	Perm											
		~	2	– 1	24		0 1 0	^	C D		0 1 6	
	Thru Right	T ·	3	51	34	78	0.10	0.	. 63	2203	0.16	
	Thru Right	T low rati							.63 Sum (v/		0.16	
Sum Tot	Thru Right of fical los	low rati st time	os for per cy	critic	cal la L = 12	ne grou .00 sec	ips, Yo	= \$	Sum (v/	s) =	0.39	
Sum Tot Cri	Thru Right n of fi cal los itical	low rati st time flow ra	os for per cy ite to	c critic cle, 1 capacit	cal la L = 12 ty rat	ne grou .00 sec io,	ips, Yo	= \$		s) =	0.39	
Sum Tot Cri	Thru Right of fical los itical	low rati st time	os for per cy ite to	c critic cle, 1 capacit	cal la L = 12 ty rat	ne gròu .00 sec io, n	ps, Yo Xo	= \$	Sum (v/ c)(C)/(s) =	0.39	a
Sum Tot Cri Con App Lar	Thru Right of fical los itical htrol I pr/ Fice	low rati st time flow ra Delay ar Ratios	os for per cy ite to id LOS Unf Del	critic cle, 1 capacit Determ: Prog Adj	cal la L = 12 ty rat inatio Lane Grp	ne grou .00 sec io, n Factor	ps, Yo Xo mental Del	Res Del	Sum (v/ c)(C)/(Lane	s) = C-L) = Group	0.39 0.43 Appro	
Sum Tot Cri Cor App	Thru Right of fical los itical htrol I pr/ Fice	low rati st time flow ra Delay ar Ratios	os for per cy ite to id LOS Unf	c critic cle, l capacit Determ: Prog	cal la L = 12 ty rat inatio Lane	ne grou .00 sec io, n Increm	ips, Yo Xo iental	= \$ = (Yo Res	Sum (v/ c)(C)/(Lane	s) = C-L) =	0.39	
Sum Tot Cri Cor App Lar Grg	Thru Right of fical los itical htrol I pr/ Fice	low rati st time flow ra Delay an Ratios c g/C	os for per cy ite to id LOS Unf Del	critic cle, 1 capacit Determ: Prog Adj	cal la L = 12 ty rat inatio Lane Grp	ne grou .00 sec io, n Factor	ps, Yo Xo mental Del	Res Del	Sum (v/ c)(C)/(Lane	s) = C-L) = Group	0.39 0.43 Appro	
Sum Tot Cri Cor App Lar Grg	Thru Right n of fical los itical htrol I pr/ F ne p v/c	low rati st time flow ra Delay an Ratios c g/C	os for per cy ite to id LOS Unf Del	critic cle, 1 capacit Determ: Prog Adj	cal la L = 12 ty rat inatio Lane Grp	ne grou .00 sec io, n Factor	ps, Yo Xo mental Del	Res Del	Sum (v/ c)(C)/(Lane	s) = C-L) = Group	0.39 0.43 Appro	
Sum Tot Cri Cor Lar Grg Eas	Thru Right a of fical los itical htrol I pr/ F ne o v/o	low rati st time flow ra Delay ar Ratios c g/C	os for per cy ite to id LOS Unf Del	critic cle, 1 capacit Determ: Prog Adj	cal la L = 12 ty rat inatio Lane Grp	ne grou .00 sec io, n Factor	ps, Yo Xo mental Del	Res Del	Sum (v/ c)(C)/(Lane	s) = C-L) = Group	0.39 0.43 Appro	
Sum Tot Cri Cor Lar Grg Eas	Thru Right a of fical los itical htrol I pr/ F ne stbound	low rati st time flow ra Delay ar Ratios c g/C d	os for per cy ite to id LOS Unf Del d1	c critic ccle, l capacit Determ: Prog Adj Fact	cal la L = 12 ty rat inatio Lane Grp Cap	ne grou .00 sec io, n Increm Factor k	nps, Yo Xo nental Del d2	Res Del d3	Sum (v/ c)(C)/(Lane Dela	s) = C-L) = Group Y LOS	0.39 0.43 Appro	
Sum Tot Cri Cor Lar Grg Eas	Thru Right a of fical los itical htrol I pr/ F ne stbound	low rati st time flow ra Delay ar Ratios c g/C	os for per cy ite to id LOS Unf Del d1	c critic ccle, l capacit Determ: Prog Adj Fact	cal la L = 12 ty rat inatio Lane Grp Cap	ne grou .00 sec io, n Increm Factor k	ps, Yo Xo mental Del	Res Del d3	Sum (v/ c)(C)/(Lane	s) = C-L) = Group	0.39 0.43 Appro Delay	I
Sum Tot Cri Cor Lar Grg Eas	Thru Right a of fical los itical ntrol I pr/ F ne stbound stbound 0.92	low rati st time flow ra Delay ar Ratios c g/C d d 2 0.30	os for per cy ite to id LOS Unf Del d1 40.6	critic capacit Determ Prog Adj Fact	cal la L = 12 ty rat inatio Lane Grp Cap Cap	ne grou .00 sec io, n Factor k 0.44	nps, Yo Xo nental Del d2 12.7	Res Del d3	Sum (v/ c)(C)/(Lane Dela	s) = C-L) = Group Ly LOS D	0.39 0.43 Appro	Ī
Sum Tot Cori Lar Grg Eas Wess L R	Thru Right a of fical los itical ntrol I pr/ F ne stbound 0.92 0.60	low rati st time flow ra Delay ar Ratios c g/C d d 2 0.30 0 0.43	os for per cy ite to id LOS Unf Del d1 40.6	c critic ccle, l capacit Determ: Prog Adj Fact	cal la L = 12 ty rat inatio Lane Grp Cap Cap	ne grou .00 sec io, n Increm Factor k	nps, Yo Xo nental Del d2	Res Del d3	Sum (v/ c)(C)/(Lane Dela	s) = C-L) = Group Y LOS	0.39 0.43 Appro Delay	I
Sum Tot Cri Cor Lar Grg Eas Wess L R	Thru Right a of fical los itical ntrol I pr/ F ne stbound stbound 0.92	low rati st time flow ra Delay ar Ratios c g/C d d 2 0.30 0 0.43	os for per cy ite to id LOS Unf Del d1 40.6	critic capacit Determ Prog Adj Fact	cal la L = 12 ty rat inatio Lane Grp Cap Cap	ne grou .00 sec io, n Factor k 0.44	nps, Yo Xo nental Del d2 12.7	Res Del d3	Sum (v/ c)(C)/(Lane Dela	s) = C-L) = Group Ly LOS D	0.39 0.43 Appro Delay	Ī
Sum Tot Cri Cor Lar Gr <u>p</u> Eas Wess L R	Thru Right a of fical los itical ntrol I pr/ F ne stbound 0.92 0.60	low rati st time flow ra Delay ar Ratios c g/C d d 2 0.30 0 0.43 nd	os for per cy ite to id LOS Unf Del d1 40.6	c critic capacit Determ Prog Adj Fact 1.000 1.000	cal la L = 12 ty rat inatio Lane Grp Cap Cap	ne grou .00 sec io, n Factor k 0.44 0.19	nps, Yo Xo nental Del d2 12.7	Res Del d3	Sum (v/ c)(C)/(Lane Dela	s) = C-L) = Group Ly LOS D	0.39 0.43 Appro Delay	
Sum Tot Cri Cor Lar Grg Eas U Wess L R Nor T R	Thru Right a of filial los litical htrol I pr/ F stbound 0.92 0.60 cthbour 0.19	low rati st time flow ra Delay ar Ratios c g/C d d 2 0.30 0 0.43 nd 9 0.51 8 0.84	os for per cy nte to dl LOS Unf Del dl 40.6 26.7	c critic capacit Determ Prog Adj Fact 1.000 1.000	cal la L = 12 ty rat inatio Lane Grp Cap 1031 673 1768	ne grou .00 sec io, n Factor k 0.44 0.19	nps, Yo Xo nental Del d2 12.7 1.5	Res Del d3	Sum (v/ c)(C)/(Lane Dela 53.3 28.2	s) = C-L) = Group Ay LOS D C	0.39 0.43 Appro Delay	I
Sum Tot Cri Cor Lar Grg Eas L R Nor T R	Thru Right a of fi- cal los itical ntrol I pr/ F e stbound 0.92 0.60 cthbour 0.19 0.08	low rati st time flow ra Delay ar Ratios c g/C d d 2 0.30 0 0.43 nd 9 0.51 8 0.84 nd	os for per cy ite to dl LOS Unf Del dl 40.6 26.7 16.1 1.6	c critic capacit Determ: Prog Adj Fact 1.000 1.000 1.000	cal la L = 12 ty rat inatio Lane Grp Cap 1031 673 1768	ne grou .00 sec io, n Factor k 0.44 0.19 0.11	12.7 1.5 0.1 0.0	Res Del d3	Sum (v/ c)(C)/(Lane Dela 53.3 28.2 16.1 1.6	s) = C-L) = Group Y LOS D C B	0.39 0.43 Appro Delay	I
Sum Tot Cri Cor Lar Grg Eas L R Nor T R	Thru Right a of fi- cal los itical ntrol I pr/ F b v/c stbound 0.92 0.60 cthbour 0.19	low rati st time flow ra Delay ar Ratios c g/C d d 2 0.30 0 0.43 nd 9 0.51 8 0.84 nd 5 0.09	os for per cy ite to dl LOS Unf Del dl 40.6 26.7 16.1	c critic capacit Determ: Prog Adj Fact 1.000 1.000 1.000 1.000 1.000	cal la L = 12 ty rat inatio Lane Grp Cap 1031 673 1768 1332	ne grou .00 sec io, n Factor k 0.44 0.19 0.11 0.11 0.11	12.7 1.5 0.1	Res Del d3	Sum (v/ c)(C)/(Lane Dela 53.3 28.2 16.1	s) = C-L) = Group Y LOS D C B	0.39 0.43 Appro Delay	I

TWO-WAY STOP CONTROL SUMMARY

Analyst: кна Agency/Co.: KHA Date Performed: 12/11/2008 Analysis Time Period: P.M. Peak Hour Intersection: U.S. 19 & Operations Access Jurisdiction: FDOT Units: U. S. Customary Analysis Year: 2015 Peak Construction Traffic Project ID: Levy County Advanced Reactor - Heavy Haul Route 2 East/West Street: **Operations** Access North/South Street: U.S. 19 Intersection Orientation: NS Study period (hrs): 0.25 _Vehicle Volumes and Adjustments_ Southbound Major Street: Approach Northbound Movement 2 3 4 5 6 1 т R т L L R Volume 392 9 4 1229 Peak-Hour Factor, PHF 0.95 0.95 0.95 0.95 Hourly Flow Rate, HFR 412 9 1293 4 2 Percent Heavy Vehicles - -- -- -- -/ 2 Median Type/Storage Raised curb RT Channelized? No 2 Lanes 1 2 1 Configuration т R L т Upstream Signal? No No Minor Street: Westbound Eastbound Approach 7 9 12 Movement 8 10 11 т \mathbf{L} т R L R Volume 80 35 Peak Hour Factor, PHF 0.95 0.95 Hourly Flow Rate, HFR 84 36 Percent Heavy Vehicles 2 2 Percent Grade (%) 0 0 Flared Approach: Exists?/Storage Lanes 1 1 Configuration L R Delay, Queue Length, and Level of Service Approach NB SB Westbound Eastbound Movement 4 7 9 1 8 10 11 12 Lane Config Г L R v (vph) 4 84 36 C(m) (vph) 1135 405 833 0.00 0.21 0.04 v/c 95% queue length 0.01 0.77 0.14 Control Delay 9.5 8.2 16.2 LOS С А А Approach Delay 14.2 Approach LOS В

Phone: E-Mail:

Fax:

E-Mail:								•
	TWO-WAY STOP	CONTRO	L(TWSÇ)	ANALY	SIS			
			·					
······································	KHA							
Agency/Co.:	KHA		•					
Date Performed:	12/11/2008		1 •					
malysis Time Period:	P.M. Peak Hou	ir -						
Intersection:	U.S. 19 & Ope	eration	s Acces	s				
Jurisdiction:	FDOT							
Jnits: U. S. Customary								
malysis Year:	2015 Peak Cor	istruct	ion Tra	affic				
Project ID: Levy Coun	ty Advanced F	Reactor	- Heav	ry Haul	Route	2		
	Operations Ac			-				
	U.S. 19							
Intersection Orientati	on: NS		. Sti	ıdy per	iod (hr	s):	0.25	
:	Vehicle Vol	lumes a	ınd Adju	istment	s			
Major Street Movements	1	2	3	4	5	6		· · · ·
	\mathbf{L}	т	R	L	т	R		
	· · ·							۰.
/olume	3	392	9	4	1229			
Peak-Hour Factor, PHF	·).95	0.95	0.95	0.95			
Peak-15 Minute Volume		L03	2	1	323 .			
ourly Flow Rate, HFR	1	112	9	4	1293			
Percent Heavy Vehicles				2				
fedian Type/Storage	Raised	curb		/ 2				
T Channelized?	nuibeu		No	, 1				
Lanes	. ,	2 1	NO	1	2			
Configuration		r R		L	T			•
Jpstream Signal?	-	No		11	No			
	1 							
Ainor Street Movements	s. 7	8	9	10	11 .	12		
	L	т	R	L	Т	R	4	
Jolume	80		35					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Peak Hour Factor, PHF	0.95		0.95					
Peak-15 Minute Volume	21		9		•			
Hourly Flow Rate, HFR	84		36					
Percent Heavy Vehicles	s 2		2					
Percent Grade (%)		0			0			
Flared Approach: Exis	sts?/Storage			/				1
RT Channelized?	j-		No					
Lanes	1	1						
Configuration	L	R						
	_		·					
· · · · · · · · · · · · · · · · · · ·	_Pedestrian Vo	olumes	and Ad	justmen	ts			
Movements	13	14	15	16				
Flow (ped/hr)	0	0	0	0				
Lane Width (ft)	12.0	12.0	12.0	12.0				
Valking Speed (ft/sec)	4.0	4.0	4.0	4.0				
Percent Blockage	0	0	0	0				
	-							

			Up	stream Sig	gnal Dat	a		
		Prog. Flow Vph	Sat Flow vph	Arrival Type	Green Time sec	Cycle Length sec	Prog. Speed mph	Distance to Signal feet
S2	Left-Turn Through							
S5	Left-Turn Through							. •

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

Movement 2 Movement 5

Shared ln volume, major th vehicles: Shared ln volume, major rt vehicles: Sat flow rate, major th vehicles: Sat flow rate, major rt vehicles: Number of major street through lanes:

Worksheet 4-Critical Gap and Follow-up Time Calculation

Cap Calculati	00						
-		7	ß	a	10	11	12
L	L	L	T	R	L	T	R
)	4.1	7.5		6.2			· · ·
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	2	2		2			
		0.20	0.20	0.10	0.20	0.20	0.10
Grade		0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.70		0.00			
1-stage 0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-stage 0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
1-stage	4.1	6.8		6.2			•
2-stage	4.1	5.8		6.2			
p Time Calcula	tions						
1	4	7	8	9	10	11	12
L	L	L	т	R	L	т	R
)	2.20	3.50		3.30			
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	2	2		2			
	2.2	3.5		3.3			
	1 L J 2.00 Grade 1-stage 0.00 2-stage 0.00 1-stage 2-stage p Time Calcula 1 L	L L) 4.1 2.00 2.00 2 Grade 0.00 1-stage 0.00 0.00 2-stage 0.00 0.00 1-stage 4.1 2-stage 4.1 2-stage 4.1 2-stage 4.1 2-stage 1.0 1.00 1.00 2.20	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

Worksheet 5-Effect of Upstream Signals

Computation 1-Queue	Clearance	Time	at	Upstream	Signal			
				Mov	vement 2	Mov	rement 5	
				V(t)	V(l,prot)	V(t)	V(l,prot)	

V prog Total Saturation Flow Rate, s (vph) Arrival Type Effective Green, g (sec) Cycle Length, C (sec) Rp (from Exhibit 16-11) Proportion vehicles arriving on green P

Computation 2-I	Proport	ion of T	WSC Int	ersecti				•	-
				V		Nent 2 7(1,prot		iovement V(1,	: 5 prot)
alpha									
beta									
Travel time, t	(a) (se	c)							
Smoothing Facto		,							
Proportion of a		ting flo	w, f						
Max platooned t									
Min platooned :	flow, V	(c,min)							
Duration of blo	ocked p	eriod, t	(p)						
Proportion time	e block	ed, p			0.0	000		0.000	
Computation 3-1	Platoon	Event H	Periods	Res	sult				
(2)									
p(2)				0.0					
p(5)				0.0	000				
p(dom)									
p(subo) Constrained or	uncore	trainad)						
OISCLALIEU OI		crained:							
Proportion									
unblocked		(1			(2)		(3)		
for minor		-	e-stage			Stage Pr			
movements, p(x))	Proc	cess	Sta	age I		Stage I	II	
p(1)									
p(4)									
p(7)									
p(8)									
p(9)									
p(10)									
p(11)									
p(12)									
Computation 4	and 5				·····				
Single-Stage P:									
Movement		1	4	7	8	9	10	11	12
		L	L	L	т	R	\mathbf{L}	т	R
V c,x	· · · ·		421	1066		206			
s c,x			744 1	T000		200			
Px									
V c,u,x									
C r,x C plat,x									
Two-Stage Proc	ess							_	
;	Stage1	7 Stage2	Stage1	8 Stage	e2 Sta	10 agel St	age2 s	1: Stage1	l Stage2
V(c,x)	412	654	· · · · ·						
S		3000							
P(x)									
V(c,u,x)									
C(r, x)									
C(r,x)									

С

C(plat,x)

Worksheet 6-Impedance and Capacity Equations

		1.0
tep 1: RT from Minor St.	9	12
onflicting Flows	206	
otential Capacity	833	
edestrian Impedance Factor	1.00	1.00
lovement Capacity	833	
robability of Queue free St.	0.96	1.00
tep 2: LT from Major St.	4	1
onflicting Flows	421	····
otential Capacity	1135	
edestrian Impedance Factor	1.00	1.00
lovement Capacity	1135	
robability of Queue free St.	1.00	1.00
aj L-Shared Prob Q free St.		
tep 3: TH from Minor St.	8	11
onflicting Flows	<u> </u>	
Potential Capacity		
edestrian Impedance Factor	1.00	1.00
ap. Adj. factor due to Impeding mvmnt Novement Capacity	1.00	1.00
probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
onflicting Flows	1066	
Potential Capacity	217	
Pedestrian Impedance Factor	1.00	1.00
laj. L, Min T Impedance factor		1.00
laj. L, Min T Adj. Imp Factor.		1.00
ap. Adj. factor due to Impeding mymnt	1.00	0.95

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
Part 1 - First Stage		
Conflicting Flows		
Potential Capacity	598	233
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mymnt	1.00	1.00
Movement Capacity	598	232
Probability of Queue free St.	1.00	1.00
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity	233	592
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	232	592

Part 3 - Single Stage Conflicting Flows

Potential Capacity					
Pedestrian Impedance Factor		.00		1.00	
Cap. Adj. factor due to Impeding mvmnt	1	.00		1.00	
Novement Capacity					
Result for 2 stage process:					
à	0	.95		0.95	
ł					
2 t					
Probability of Queue free St.	1	.00		1.00	
Step 4: LT from Minor St.		7		10	
Part 1 - First Stage		. <u></u>			
Conflicting Flows	4	12			
Potential Capacity	6	37		223	
Pedestrian Impedance Factor	1	.00		1.00	
Cap. Adj. factor due to Impeding mvmnt	1	.00		1.00	
Movement Capacity	6	37		222	
Part 2 - Second Stage					
Conflicting Flows	6	54			
Potential Capacity	4	79		814	
Pedestrian Impedance Factor	1	.00		1.00	
Cap. Adj. factor due to Impeding mymnt		.00		0.96	
Movement Capacity		77		779	
Part 3 - Single Stage					
Conflicting Flows	1	066			
Potential Capacity		17			
Pedestrian Impedance Factor	_	.00		1.00	
Maj. L, Min T Impedance factor	-			1.00	
Maj. L, Min T Adj. Imp Factor.				1.00	
Cap. Adj. factor due to Impeding mymnt	1	.00		0.95	
Movement Capacity		16		0.95	
Results for Two-stage process:					
a	0	.95		0.95	
a Y		.61			
r Ct		.05			
	4			,,,,	
Worksheet 8-Shared Lane Calculations					
Movement 7	8	9	10	11	12

LTRLTRVolume (vph)8436Movement Capacity (vph)405833Shared Lane Capacity (vph)

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7	8	9	10	11	12
	L	т	R	L	Т	R
C sep	405		833			
Volume	84		36			
Delay						
Q sep						

Q sep +1

round (Qsep +1)

n max C sh SUM C sep n C act

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config		L	L		R			
v (vph)		4	84		36			
C(m) (vph)		1135	405		833			
v/c		0.00	0.21		0.04			
95% queue length		0.01	0.77		0.14			
Control Delay		8.2	16.2		9.5			
LOS		·A	С		А			
Approach Delay				14.2				
Approach LOS				В				

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	1.00
v(il), Volume for stream 2 or 5		
v(i2), Volume for stream 3 or 6		
s(il), Saturation flow rate for stream 2 or 5		
s(i2), Saturation flow rate for stream 3 or 6		
P*(oj)		
d(M,LT), Delay for stream 1 or 4		8.2
N, Number of major street through lanes		
d(rank,1) Delay for stream 2 or 5		

TWO-WAY STOP CONTROL SUMMARY___

Phone: E-Mail:

Fax:

E-Mail:				•			
т	WO-WAY STO	P CONTRO)L(TWSC)	ANALYS	SIS		
Analyst: K	HA						
-	HA						
	2/15/2008						
Analysis Time Period: P			n .				
	R 40 & Hea	-	Drivewa	чy			
	evy County						
Units: U. S. Customary		•					
-	015 Peak C						
Project ID: Levy Count		Reactor	r - Heav	<i>r</i> y Haul	Route	e 2	
	R 40						
North/South Street: H	leavy Haul	Driveway	Į				
Intersection Orientatio	n: EW		Sti	udy per:	iod ()	nrs): 0.	.25
	_Vehicle V		-			·····	
Major Street Movements	1	2	3	4	- 5	6	
	${ m L}$	т	R	L	. Т	R	
Jolume	0	147	15	0	106	0	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Peak-15 Minute Volume	0.95	39	4	0.95	28	0.95	
			-	0		0	
Hourly Flow Rate, HFR	0	154	15		111	U	
Percent Heavy Vehicles	100			100			
Median Type/Storage	Undiv	ided		/			
RT Channelized?			No			_	
Lanes	0	$1 \cdot 1$		0	1	0	
Configuration	LT	' R		LT			
Jpstream Signal?		No			No		
Minor Street Movements	7	8	9	10	11	12	
	\mathbf{L}	т	R	L	т	R	
/olume	0	1	0	0	1	0	
	-						
Peak Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	
Peak Hour Factor, PHF Peak-15 Minute Volume	0.95 0	0.95 0	0.95 0	0.95 0	0.95 0	0.95 0	
Peak Hour Factor, PHF Peak-15 Minute Volume Hourly Flow Rate, HFR	0.95 0 0	0.95 0 1	0.95 0 0	0.95 0 0	0.95 0 1	0.95 0 0	
Peak Hour Factor, PHF Peak-15 Minute Volume Hourly Flow Rate, HFR Percent Heavy Vehicles	0.95 0	0.95 0 1 100	0.95 0	0.95 0	0.95 0 1 100	0.95 0	
Peak Hour Factor, PHF Peak-15 Minute Volume Hourly Flow Rate, HFR Percent Heavy Vehicles Percent Grade (%)	0.95 0 0 100	0.95 0 1 100 0	0.95 0 0 100	0.95 0 0 100	0.95 0 1	0.95 0 0 100	
Peak Hour Factor, PHF Peak-15 Minute Volume Hourly Flow Rate, HFR Percent Heavy Vehicles Percent Grade (%) Flared Approach: Exist	0.95 0 0	0.95 0 1 100 0	0.95 0 0	0.95 0 0	0.95 0 1 100	0.95 0 0	. /
Peak Hour Factor, PHF Peak-15 Minute Volume Hourly Flow Rate, HFR Percent Heavy Vehicles Percent Grade (%) Flared Approach: Exist RT Channelized?	0.95 0 100 cs?/Storage	0.95 0 1 100 0	0.95 0 100 No	0.95 0 0 100 /	0.95 0 1 100 0	0.95 0 100 No	. /
Peak Hour Factor, PHF Peak-15 Minute Volume Hourly Flow Rate, HFR Percent Heavy Vehicles Percent Grade (%) Flared Approach: Exist RT Channelized? Lanes	0.95 0 0 100	0.95 0 1 100 0 2 1 0	0.95 0 100 No	0.95 0 0 100	0.95 0 1 100 0	0.95 0 0 100	. /
Peak Hour Factor, PHF Peak-15 Minute Volume Hourly Flow Rate, HFR Percent Heavy Vehicles Percent Grade (%) Flared Approach: Exist RT Channelized? Lanes	0.95 0 0 100 cs?/Storage	0.95 0 1 100 0	0.95 0 100 No	0.95 0 0 100 /	0.95 0 1 100 0	0.95 0 100 No	. /
Peak Hour Factor, PHF Peak-15 Minute Volume Hourly Flow Rate, HFR Percent Heavy Vehicles Percent Grade (%) Flared Approach: Exist RT Channelized? Lanes Configuration	0.95 0 100 cs?/Storage 0	0.95 0 1 100 0 2 1 0 LTR	0.95 0 100 No	0.95 0 100 / 0	0.95 0 1 100 0	0.95 0 100 No	. /
RT Channelized? Lanes Configuration	0.95 0 100 cs?/Storage 0 Pedestrian	0.95 0 1 100 0 2 1 0 LTR Volumes	0.95 0 100 No and Ad	0.95 0 100 / 0 justmen	0.95 0 1 100 0	0.95 0 100 No	· /
Peak Hour Factor, PHF Peak-15 Minute Volume Hourly Flow Rate, HFR Percent Heavy Vehicles Percent Grade (%) Flared Approach: Exist RT Channelized? Lanes Configuration	0.95 0 100 cs?/Storage 0	0.95 0 1 100 0 2 1 0 LTR	0.95 0 100 No	0.95 0 100 / 0	0.95 0 1 100 0	0.95 0 100 No	· /
Peak Hour Factor, PHF Peak-15 Minute Volume Hourly Flow Rate, HFR Percent Heavy Vehicles Percent Grade (%) Flared Approach: Exist RT Channelized? Lanes Configuration	0.95 0 100 cs?/Storage 0 Pedestrian	0.95 0 1 100 0 2 1 0 LTR Volumes	0.95 0 100 No and Ad	0.95 0 100 / 0 justmen	0.95 0 1 100 0	0.95 0 100 No	· /
Peak Hour Factor, PHF Peak-15 Minute Volume Hourly Flow Rate, HFR Percent Heavy Vehicles Percent Grade (%) Flared Approach: Exist RT Channelized? Lanes Configuration Movements	0.95 0 100 cs?/Storage 0 Pedestrian 13	0.95 0 1 100 0 2 1 LTR Volumes 14 0	0.95 0 100 No and Ad 15 0	0.95 0 100 / justmen 16 0	0.95 0 1 100 0 1 LTR ts	0.95 0 100 No	. /
Peak Hour Factor, PHF Peak-15 Minute Volume Hourly Flow Rate, HFR Percent Heavy Vehicles Percent Grade (%) Flared Approach: Exist RT Channelized? Lanes Configuration	0.95 0 100 cs?/Storage 0 Pedestrian 13 0	0.95 0 1 100 0 2 1 LTR Volumes 14 0	0.95 0 100 No and Ad 15 0	0.95 0 100 / justmen 16 0	0.95 0 1 100 0 1 LTR ts	0.95 0 100 No	. /

			<i>t</i>	stream Sig	J			
		Prog. Flow vph	Sat Flow vph	Arrival Type	Green Time sec	Cycle Length sec	Speed	Distance to Signal feet
S2	Left-Turn Through	n <u>, 1 aut, 1</u> 20, <u>1</u> , <u>1</u> , <u>1</u> , <u>1</u> , <u>1</u> , <u>1</u> , <u>1</u> , <u>1</u>						

S5 Left-Turn

DJ DELC-IUL

Through

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

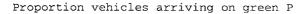
	Movement 2	Movement 5
Shared in volume, major th vehicles:	154	111
Shared ln volume, major rt vehicles:	0	0
Sat flow rate, major th vehicles:	1700	1700
Sat flow rate, major rt vehicles:	1700	1700
Number of major street through lanes:	1	1

Worksheet 4-Critical Gap and Follow-up Time Calculation

Critical	. Gap Cal	culatio	on						
Movement		1	4	7	8	9	10	11	12
		L	L	L	т	R	L	Т	R
t(c,base	2)	4.1	4.1	7.1	6.5	6.2	7.1	6.5	6.2
t(c,hv)		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
P(hv)		100	100	100	100	100	100	100	100
t(c,g)				0.20	0.20	0.10	0.20	0.20	0.10
Percent	Grade			0.00	0.00	0.00	0.00	0.00	0.00
t(3,1t)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t(c,T):	1-stage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2-stage	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
t(c)	1-stage	5.1	5.1	8.1	7.5	7.2	8.1	7.5	7.2
	2-stage								
Follow-U	Jp Time C	alcula	tions						
Movement	:	1	4	7	8	9	10	11	12
		L	L	L	т	R	L	Т	R
t(f,base	2)	2.20	2.20	3.50	4.00	3.30	3.50	4.00	3.30
t(f,HV)		0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
P(HV)		100	100	100	100	100	100	100	100
t(f)		3.1	3.1	4.4	4.9	4.2	4.4	4.9	4.2

Worksheet 5-Effect of Upstream Signals

Computation 1-Queue Clearance Time at U	-	Signal vement 2	Movement 5			
	V(t)	V(l,prot)	V(t)	V(l,prot)		
V prog Total Saturation Flow Rate, s (vph)						
Arrival Type						



g(q1) g(q2) g(q)

Computation 2-Proporti		iwsc inc	ersect				orrom '	- 5
· · · · · · · · · · · · · · · · · · ·			۲7	Movem (t) V	ent 2 (1,prot		ovement v(1	prot)
			v	() V	(1,0100) (()	v (±,	procy
alpha						, ,		
peta				*				
Fravel time , t(a) (see	2)							
Smoothing Factor, F								
Proportion of conflict		ow, f						
Max platooned flow, V								
Min platooned flow, V						•		
Duration of blocked pe		t(p)						
Proportion time blocks	ed, p			0.0	00		0.000	
Computation 3-Platoon	Event	Periods	Re	sult				
o(2)			. 0.	000				
p(5)				000				
o(dom)								
p(subo)								
Constrained or unconst	rained	?						
				· · · · · · · · · · · · · · · · · · ·				
Proportion		<i>.</i>						
unblocked		1)		(2)		(3)		
for minor		e-stage	_		tage Pr			
movements, p(x)	Pro	Cess	St	age I		Stage I	Ŧ	
p(1)								
p(4)								
p(7)								
p(8)								
p(9)								
p(10)								
p(11)			•					
p(12)								
Computation 4 and 5							·	
Single-Stage Process								
Movement	1	. 4	7	. 8	9	10	11	12
Movement	L L	L.	, L	T	R	L	T	R
	Ц		Ц	Ţ	K	<u>با</u>	T	К
V c,x	111	169	266	265	154	273	280	111
S								
Px								
V c,u,x								
Cr,x								- <u>.</u>
C plat,x								
Two-Stage Process	7		8		10		1	1
Stage1	/ Stage2	Stage1	o L Stag	ge2 Sta		.age2 S	tage1	
			·····					
V(c,x) s	1500		1500	١	15	.00		1500
	1000		100	,	ψL			1000
P(x) V(c,u,x)								

C(plat, x)

Movement Capacity

Worksheet 6-Impedance and Capacity Equations Step 1: RT from Minor St. 9 12 Conflicting Flows 154111 Potential Capacity 688 732 Pedestrian Impedance Factor 1.00 1.00 Movement Capacity 688 732 Probability of Queue free St. 1.00 1.00 Step 2: LT from Major St. 4 1 Conflicting Flows 169 111 Potential Capacity 982 1040 Pedestrian Impedance Factor 1.00 1.00 Movement Capacity 982 1040 Probability of Queue free St. 1.00 1.00 Maj L-Shared Prob Q free St. 1.00 1.00 8 Step 3: TH from Minor St. 11 Conflicting Flows 265 280 Potential Capacity 504 493 Pedestrian Impedance Factor 1.00 1.00 Cap. Adj. factor due to Impeding mymnt 1.00 1.00 Movement Capacity 504 493 Probability of Queue free St. 1.00 1.00 Step 4: LT from Minor St. 7 10 273 Conflicting Flows 266 Potential Capacity 527 521 Pedestrian Impedance Factor 1.00 1.00 Maj. L, Min T Impedance factor 1.00 1.00 Maj. L, Min T Adj. Imp Factor. 1.00 1.00 Cap. Adj. factor due to Impeding mvmnt 1.00 1.00

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St. 8 11 Part 1 - First Stage Conflicting Flows Potential Capacity Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mymnt Movement Capacity Probability of Queue free St. Part 2 - Second Stage Conflicting Flows Potential Capacity Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mvmnt Movement Capacity Part 3 - Single Stage Conflicting Flows 265 280

526

520

Potential Capacity Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mvmn Movement Capacity	it.	1 1	04 .00 .00 04		493 1.00 1.00 493	
			V4		4JJ	
Result for 2 stage process: a						
čt	-	5	04 .		493	
Probability of Queue free St.		1	.00		1.00	
Step 4: LT from Minor St.			7		10	
Part 1 - First Stage						· · · ·
Conflicting Flows						
Potential Capacity						
Pedestrian Impedance Factor						•
Cap. Adj. factor due to Impeding mvmr	it					
Movement Capacity						
Part 2 - Second Stage		· · · · · · · · · · · · · · · · · · ·				
Conflicting Flows						
Potential Capacity						
Pedestrian Impedance Factor						
Cap. Adj. factor due to Impeding mvmr	it					
Movement Capacity						
Part 3 - Single Stage				<u></u>		
Conflicting Flows		2	66		273	
Potential Capacity		5	27		521	
Pedestrian Impedance Factor		1	.00		1.00	
Maj. L, Min T Impedance factor		. 1	.00		1.00	
Maj. L, Min T Adj. Imp Factor.		1	.00		1.00	
Cap. Adj. factor due to Impeding mvmr	ıt		.00		1.00	
Movement Capacity		5	26		520	
Results for Two-stage process:						
a Y						
C t		5	26	•	520	
Worksheet 8-Shared Lane Calculations					, <u></u> ,,	
Movement	7	8	9	10	11	12
	L	Т	R	L	т	R
Volume (vph)	0	1	0	0	1	0
Movement Capacity (vph)	526	504	688	520	493	732
Shared Lane Capacity (vph)	· •	504		•	493	
	Flare	d Minor	Street	: Approa	iches	
Worksheet 9-Computation of Effect of		8	9	10	11	12
Worksheet 9-Computation of Effect of	7					12
	7 L	8 T	R	L	Т	R
Movement					т 493	
Movement C sep	L	Т	R	L		R 732 0
Worksheet 9-Computation of Effect of Movement C sep Volume Delay	L 526	т 504	R 688	L 520	493	732
Movement C sep Volume	L 526	т 504	R 688	L 520	493	732

round (Qsep +1)



n màx C sh SUM C sep n C act

493

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config	\mathbf{LT}	LTR		LTR			LTR	
v (vph)	0	0		1		······	1	·····
C(m) (vph)	1040	982		504			493	
v/c	0.00	0.00		0.00			0.00	
95% queue length	0.00	0.00		0.01			0.01	
Control Delay	8.5	8.7		12.2			12.3	
LOS	А	А		в			в	
Approach Delay				12.2			12.3	
Approach LOS				В			в	

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	1.00
v(il), Volume for stream 2 or 5	154	111
v(i2), Volume for stream 3 or 6	0	0
s(il), Saturation flow rate for stream 2 or 5	1700	1700
s(i2), Saturation flow rate for stream 3 or 6	1700	1700
P*(oj)	1.00	1.00
d(M,LT), Delay for stream 1 or 4	8.5	8.7
N, Number of major street through lanes	1	1
d(rank,1) Delay for stream 2 or 5	0.0	0.0

2015 Roaday Analysis



U.S. 19	Adopted	Minimum	P.N	И. Peak-H	our Roadway T	affic Volumes		
		ndard		2015 Background Traffic**		2015 Total Traffic		
Segment	LOS	Volume (Two-way)*	Volume (Two-way)	LOS	Volume (Two-way)	Volume (Two-way)	LOS	
SR 121 to Project Site	В	2,800	510	А	469	979	А	
Project Site to CR 40	В	2,800	522	A	1,109	1,631	В	
SR 121	Adopted	Minimum	P.M. Peak-Hour Roadway Traffic Volumes					
		ndard	2015 Back Traffic	-	Project Traffic	2015 Total	Traffic	
Segment	LOS	Volume (Two-way)*	Volume (Two-way)	LOS	Volume (Two-way)	Volume (Two-way)	LOS	
U.S. 19 to NW 27th Street	с	770	160	A	406	566	с	
US 41	Adopted	Minimum	P.M. Peak-Hour Roadway Traffic Volumes					
	Adopted Minimum Standard		2015 Background Traffic**		Project Traffic 2015 Total Tra		Traffic	
Segment	LOS	Volume (Two-way)*	Volume (Two-way)	LOS	Volume (Two-way)	Volume (Two-way)	LOS	
SE 80th Street/NW 27th Street to CR 328	с	770	449	С	326	775	C***	
CR 40	Adapted	Minimum	P.1	И. Peak-H	lour Roadway T	raffic Volumes		
		ndard	2015 Back Traffic		Project Traffic	2015 Total	Traffic	
Segment	LOS	Volume (Two-way)*	Volume (Two-way)	LOS	Volume (Two-way)	Volume (Two-way)	LOS	
U.S. 19 to Heavy Haul Driveway	с	1,070	199	С	79	278	C	

*These volumes were attained from the FDOT 2007 Generalized Level of Service Tables.

**These two-way volumes along segments between counted intersections were estimated based upon the average of the intersection volumes counted along the segment.

***LOS is based on a detailed HIGHPLAN analysis of the segment.

HIGHPLAN 2007 Conceptual Planning Analysis

Description/File Information	Descri	ption	/File	Inform	ation
-------------------------------------	--------	-------	-------	--------	-------

File Name	HP_US 41.xml	Road Name	US 41	Study Period	К100
Analyst	КНА	From	CR 328	Analysis Type	Segment
Date Prepared	2/24/2009	То	NW 27th Street	Version Date	11/9/07
Agency	FDOT	Peak Direction	Northbound		
District	2	Off Peak Direction	Southbound		
User Notes		·····			

Segment Data

	Roadway	Variables			Traffic Variables			
Area Type	Rural Undeveloped	Segment Length	1	AADT	4400	PHF	.93	
# Thru Lanes	2	Median	No	к	.111	% Heavy Vehicles	3	
Terrain	Level	Left Turn Lanes	Yes	D	5916	Base Capacity	1700	
Posted Speed	60	Pass Lane Spacing	N/A	Peak Dir. Hrly. Vol.	289	Local Adj. Factor	1	
Free Flow Speed	65	% NPZ	20	Off Peak Dir. Hrly. Vol.	199	Adjusted Capacity	1675	

LOS Results

v/c Ratio	0.18	Density	N/A	PTSF	53.66	ATS	58.8	% FFS	90.40
FFS Delay	5.90	LOS Thresh. Delay	0.00	Service Measure	PTSF	LOS	с		

Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1500 vphpl.

Α	В	С	D	Ξ
	Hourly Vo	lume In Peak Direc	tion	
130	250	460	790	1570
			·	
	Hourly Vo	lume In Both Direct	ions	
220	420	780	1340	2650
	Annual	Average Daily Traff	ïc	
2000	3800	7000	12100	23900
1				
		Hourly Vo 130 250 Hourly Vo 220 420 420	Hourly Volume In Peak Direct 130 250 460 Hourly Volume In Both Direct 220 420 780 Annual Average Daily Traff	Hourly Volume In Peak Direction 130 250 460 790 Hourly Volume In Both Directions 220 420 780 1340 Annual Average Daily Traffic

Lanes		Service	e Measure Threshold	S	
1	35.00	50.00	65.00	80.00	80.00
2]				
3]				
4	1				

be achieved based on input data provided.

Peak Operational Workforce Traffic Conditions

_TWO-WAY STOP CONTROL SUMMARY___

Analyst: KHA Agency/Co.: KHA Date Performed: 12/11/2008 Analysis Time Period: A.M. Peak Hour Intersection: U.S. 19 & Operations Access Jurisdiction: FDOT Units: U. S. Customary Analysis Year: 2017 Peak Operations Traffic Project ID: Levy County Advanced Reactor East/West Street: **Operations Access** U.S. 19 North/South Street: Intersection Orientation: NS Study period (hrs): 0.25 _Vehicle Volumes and Adjustments_ Northbound Major Street: Approach Southbound

Movement	1 L	2 T	3 R		4 L	5 T	6 R	
			1.1.0	1	<i></i>	0.50		
Volume		298	148		64	253		
Peak-Hour Factor, PHF		0.95	0.95		0.95	0.95		
Hourly Flow Rate, HFR		313	155		67	266		
Percent Heavy Vehicles					2			
Median Type/Storage	Raised	curb			/ 2			
RT Channelized?			No					
Lanes		2 1			1	2		
Configuration		TR			L	T		
Upstream Signal?		No			_	No		
opportoin prijnar,		110						
Minor Street: Approach	Wes	tbound			Eas	tbound		
Movement	7	8	9	1	10	11	12	
	Ŀ	Т	R	İ	L	т	R	
Volume	14	·	6					
Peak Hour Factor, PHF	0.95		0.95					
Hourly Flow Rate, HFR	14		6					
Percent Heavy Vehicles	2		2					
Percent Grade (%)	2	0	2			0		
	7	U		,		U		
Flared Approach: Exists?/S Lanes	÷			/				/
	1							
Configuration	L	R	•					

Delay, Queue Length, and Level of Service Approach NB SBWestbound Eastbound Movement 1 4 7 8 9 10 11 12 \mathbf{L} Lane Config L R 1 v (vph) 67 6 14 C(m) (vph) 1090 582 888 0.06 0.02 v/c 0.01 95% queue length 0.20 0.07 0.02 Control Delay 8.5 11.3 9.1 LOS А В А Approach Delay 10.7 Approach LOS в





Phone: E-Mail: Fax:

E-Mail:					,			
				יז אזא אי	Vere			•
· · · · · · · · · · · · · · · · · · ·	TWO-WAY STO	JP CONTR	OL (TWSC) ANAL	1212			
Analyst:	KHA				•			
	KHA							
	12/11/2008							
Analysis Time Period:		Hour						
			na 1 aa					
	U.S. 19 & (operatio	IS ACCO	255				
	FDOT							
Units: U. S. Customary								
	2017 Peak (-		LIC				
Project ID: Levy Coun	-		r					
• • • •	Operations	Access						
	U.S. 19							
Intersection Orientati	on: NS		S	tudy pe	riod (h:	rs):	0.25	
	Vehicle	Volumes	and Ad	iustmon	te			
Major Street Movements		2	3	4	5	6		
	L.	- ጥ	R	Ľ	T	R		
		-			*			
Volume		298	148	64	253			
Peak-Hour Factor, PHF		298	0.95	0.95	0.95			
Peak-15 Minute Volume		78	39	17	67			
Hourly Flow Rate, HFR		313	39 155	67	266			
		212	100	2	200			
Percent Heavy Vehicles								
Median Type/Storage	Rais	ed curb		/ 2				
RT Channelized?		· ·	No		•			
Lanes		2 1	•	1	2			
Configuration		T R		L				
Upstream Signal?		No			No			
Minor Street Movements	; 7	8	9	10	11	12		
	\mathbf{L}	Т	R	L	т	R		
Volume	. 14		. 6					
	0.95		0.95			1		
Peak Hour Factor, PHF			2					
Peak-15 Minute Volume	4							
Hourly Flow Rate, HFR	14		6					
Percent Heavy Vehicles	s 2	•	2			•		
Percent Grade (%)		0.			0		,	
	sts?/Storag	е		/			/	
RT Channelized?	-		No					
Lanes	1	_	L					
Configuration	L	R						,
				•				
	Pedestrian	Volumes	s and A	djustme	nts			
Movements	13	14	15	16				
Flow (ped/hr)	0	0	0	0				
Lane Width (ft)	12.				0			
Walking Speed (ft/sec)			4.0					
Percent Blockage	0	0	0	0				
Leroche Drochage	U	U	U	v				

		Upstream Signal Data							
		Prog. Flow Vph	Sat Flow vph	Arrival Type	Green Time sec	Cycle Length sec	Prog. Speed mph	Distance to Signal feet	
S2	Left-Turn Through								
<i>S</i> 5	Left-Turn Through								

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

	Movement 2	Movement 5	
Shared ln volume, major th vehicles: Shared ln volume, major rt vehicles: Sat flow rate, major th vehicles: Sat flow rate, major rt vehicles: Number of major street through lanes:			

Worksheet 4-Critical Gap and Follow-up Time Calculation

Critical	l Gap Cal	culatio	on							
Movement	2	1	4	7	8	9	10	11	12	
		L	\mathbf{L}	\mathbf{L}	Т	R	\mathbf{L}	T	R	
t(c,base	e)		4.1	7.5		6.2				
t(c,hv)		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
P(hv)			2	2		2 .				
t(c,g)				0.20	0.20	0.10	0.20	0.20	0.10	
Percent	Grade			0.00	0.00	0.00	0.00	0.00	0.00	
t(3,1t)			0.00	0.70		0.00				
t(c,T):	1-stage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2-stage		0.00	1.00	1.00	0.00	1.00	1.00	0.00	
t(c)	1-stage		4.1	6.8		6.2				
	2-stage		4.1	5.8		6.2				
Follow-U	Jp Time C	alcula	tions		· · · · · · · ·					
Movement	t	1	4	7	8	9	10	11	12	
		L	L	L	т	R	L	т	R	
t(f,base t(f,HV) P(HV) t(f)	2)	1.00	2.20 1.00 2 2.2	3.50 1.00 2 3.5	1.00	3.30 1.00 2 3.3	1.00	1.00	1.00	

Worksheet 5-Effect of Upstream Signals

Computation	1-Queue	Clearance	Time	at	Upstream	Signal		
·					Mov	vement 2	Mov	vement 5
					V(t)	V(l,prot)	V(t)	V(l,prot)

V prog Total Saturation Flow Rate, s (vph) Arrival Type Effective Green, g (sec) Cycle Length, C (sec) Rp (from Exhibit 16-11) Proportion vehicles arriving on green P g(q1) g(q2) g(q)

			v(t)		nent 2			vement	- 5
			V(L)		/(1,pr	ot) V	(t)	V(1,	prot)
~~\									
2C)									
atima fl	£								
	OW, I								
	+(n)								
				0 0	000			0 000	
icu, p				0.0				0.000	
n Event	Periods	R	.esu]	lt					
		0	.000)					
		0	.000	D					
strained	?								
1	1)		13	2)		(3)		
•	•				Stage				
-	-	.9			ugu				
						Jeag			
							·····		
1	4	7		8	. 9	10		11	12
\mathbf{L}	L	L		т	R			т	R
ween and	160	E 0 0			150			·	
	400	500			130				
		·							
7		8							
Stage2	Stage:	1 Sta	ge2	Sta	age1	Stage2	St	age1	Stage2
267				· · · · ·					
	V(c,max) V(c,min) period, ked, p n Event strained (Singl Pro 1 L	cting flow, f V(c,max) V(c,min) period, t(p) ked, p n Event Periods strained? (1) Single-stage Process 1 4 L L 468 7 Stage2 Stage2 267	cting flow, f V(c,max) V(c,min) period, t(p) ked, p n Event Periods R (1) Single-stage Process S 1 4 7 L L L 468 580 7 8 Stage2 Stage1 Sta 267	<pre>cting flow, f V(c,max) V(c,min) period, t(p) ked, p n Event Periods Resu:</pre>	<pre>cting flow, f V(c,max) V(c,min) period, t(p) ked, p 0.0 n Event Periods Result 0.000 0.000 strained? (1) (2) Single-stage Two-S Process Stage I 1 4 7 8 L L L T 468 580 7 8 Stage2 Stage1 Stage2 Sta 267</pre>	cting flow, f V(c,max) V(c,min) period, t(p) ked, p 0.000 n Event Periods Result 0.000 0.000 strained? (1) (2) Single-stage Two-Stage Process Stage I 1 4 7 8 9 L L L T R 468 580 156 7 8 10 Stage2 Stage1 Stage2 Stage1 267	cting flow, f V(c,max) V(c,min) period, t(p) ked, p 0.000 n Event Periods Result 0.000 strained? (1) (2) (1) (2) (1) (2) (1) (2) Single-stage Two-Stage Process Process Stage I 1 4 468 580 156 7 8 5tage2 Stage1 5tage2 Stage1 5tage2 Stage1	cting flow, f V(c,max) y(c,min) period, t(p) ked, p 0.000 n Event Periods Result 0.000 strained? (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (3) Single-stage Process Stage I Stage Stage 1 4 7 8 7 8 10 Stage2 Stage1 Stage2 Stage2 267	cting flow, f V(c,max) V(c,min) period, t(p) ked, p 0.000 n Event Periods Result 0.000 strained? (1) (2) (1) (2) (1) (2) (1) (2) Single-stage Two-Stage Process Process Stage I 1 4 7 8 7 8 7 8 7 8 10 11 7 8 7 8 7 8 7 8 5tage2 Stage1 267

C(plat,x)

Worksheet 6-Impedance and Capacity Equation	ns	
Step 1: RT from Minor St.	9	12
Conflicting Flows	156	
Potential Capacity	888	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	888	
Probability of Queue free St.	0.99	1.00
Step 2: LT from Major St.	4	1
Conflicting Flows	468	
Potential Capacity	1090	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	1090	
Probability of Queue free St.	0.94	1.00
Maj L-Shared Prob Q free St.		
Step 3: TH from Minor St.	8	11
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.94	0.94
Movement Capacity		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Conflicting Flows	580	· · · · · · · · · · · · · · · · · · ·
Potential Capacity	445	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0:94
Maj. L, Min T Adj. Imp Factor.		0.95
Cap. Adj. factor due to Impeding mvmnt	0.94	0.95
Movement Capacity	418	

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
Part 1 - First Stage		·····
Conflicting Flows		
Potential Capacity	661	605
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.94
Movement Capacity	661	568
Probability of Queue free St.	1.00	1.00
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity	605	565
Pedestrian Impedance Factor	1.00 .	1.00
Cap. Adj. factor due to Impeding mvmnt	0.94	1.00
Movement Capacity	568	565

Part 3 - Single Stage Conflicting Flows

Potential Capacity Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mvmnt Movement Capacity	1.00 0.94	1.00 0.94
Result for 2 stage process:		
a	0.95	0.95
У		
Ct	i	
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Part 1 - First Stage		······································
Conflicting Flows	313	
Potential Capacity	715	652
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.94
Movement Capacity	715	612
Part 2 - Second Stage		
Conflicting Flows	267	
Potential Capacity	754	862
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.94	0.99
Movement Capacity	708	856
Part 3 - Single Stage		
Conflicting Flows	580	
Potential Capacity	445	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.94
Maj. L, Min T Adj. Imp Factor.		0.95
Cap. Adj. factor due to Impeding mvmnt	0.94	0.95
Movement Capacity	418	
Results for Two-stage process:		
a	0.95	0.95
У	1.02	
Ct	582	
		·····

Worksheet 8-Shared Lane Calculations

Movement	7	8	9	10	11	12
	L	Т	R	\mathbf{L}	т	R
Volume (vph)	14		6		<u> </u>	
Movement Capacity (vph) Shared Lane Capacity (vph)	582		888			

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7	8	9	10	11	12
	L .	т	R	L	\mathbf{T}_{\perp}	R
C sep	582		888			
Volume	 14		6			
Delay						
Q sep						

Q sep +1 round (Qsep +1) n max C sh SUM C sep n C act

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config		L	L		R			
v (vph)		67	14		6			
C(m) (vph)		1090	582		888			
v/c		0.06	0.02		0.01			
95% queue length		0.20	0.07		0.02			
Control Delay		8.5	11.3		9.1			
LOS		А	В		А			
Approach Delay				10.7				
Approach LOS				в				

Worksheet 11-Shared Major LT Impedance and Delay

Movement 2	Movement 5
1.00	0.94
	8.5

TWO-WAY STOP CONTROL SUMMARY_

Analyst: KHA Agency/Co.: KHA Date Performed: 12/8/2008 Analysis Time Period: P.M. Peak Hour Intersection: U.S. 19 & SR 121 Jurisdiction: FDOT District 2 Units: U. S. Customary Analysis Year: 2017 Peak Operations Traffic Project ID: Levy County Advanced Reactor East/West Street: SR 121 North/South Street: U.S. 19 Intersection Orientation: NS Study period (hrs): 0.25 Vehicle Volumes and Adjustments_ Major Street: Southbound Approach Northbound Movement 1 2 3 5 4 6 т \mathbf{L} т L R R Volume 149 .103 21 171 Peak-Hour Factor, PHF 0.97 0.97 0.97 0.97 Hourly Flow Rate, HFR 153 106 21 176 Percent Heavy Vehicles 4 -----------Median Type/Storage / 2 Raised curb **RT** Channelized? No Lanes 2 1 1 2 Configuration т R L т Upstream Signal? No No Minor Street: Westbound Eastbound Approach 7 8 9 10 Movement 11 12 т т R L R \mathbf{L} Volume 88 10 Peak Hour Factor, PHF 0.97 0.97 Hourly Flow Rate, HFR 90 10 Percent Heavy Vehicles 1 1 Percent Grade (%) 0 0 Flared Approach: Exists?/Storage Lanes 1 1 Configuration \mathbf{L} R Delay, Queue Length, and Level of Service Approach SB NB Westbound Eastbound Movement 1 4 7 8 9 10 11 12 Lane Config L L R 1 v (vph) 21 90 10 1288 C(m) (vph) 762 987 0.02 v/c 0.12 0.01 95% queue length 0.05 0.40 0.03 Control Delay 7.8 10.4 8.7

А

В

Α

10.2

В

LOS

Approach Delay

Approach LOS

Phone: E-Mail:

Percent Blockage

Fax:

TWO-WAY STOP CONTROL(TWSC) ANALYSIS____ Analyst: KHA Agency/Co.: KHA Date Performed: 12/8/2008 Analysis Time Period: P.M. Peak Hour Intersection: U.S. 19 & SR 121 Jurisdiction: FDOT District 2 Units: U. S. Customary Analysis Year: 2017 Peak Operations Traffic Project ID: Levy County Advanced Reactor East/West Street: SR 121 North/South Street: U.S. 19 Intersection Orientation: NS Study period (hrs): 0.25 Vehicle Volumes and Adjustments Major Street Movements 1 5 6 2 3 4 L т R L т R Volume 103 149 21 171 Peak-Hour Factor, PHF 0.97 0.97 0.97 0.97 Peak-15 Minute Volume 38 27 5 44 Hourly Flow Rate, HFR 153 106 21 176 Percent Heavy Vehicles _ _ _ _ 4 -----Median Type/Storage Raised curb / 2 RT Channelized? No Lanes 2 1 1 2 Configuration т R т L Upstream Signal? No No Minor Street Movements 7 8 9 10 11 12 L т R L т R Volume 88 10 Peak Hour Factor, PHF 0.97 0.97 Peak-15 Minute Volume 23 3 Hourly Flow Rate, HFR 90 10 Percent Heavy Vehicles 1 1 Percent Grade (%) 0 0 Flared Approach: Exists?/Storage RT Channelized? No Lanes 1 1 Configuration L R _Pedestrian Volumes and Adjustments_ Movements 13 14 15 16 Flow (ped/hr) 0 0 0 0 Lane Width (ft) 12.0 12.0 12.0 12.0 Walking Speed (ft/sec) 4.0 4.0 4.0 4.0

0

0

0

0

		Prog. Flow vph	Sat Flow vph	Arrival Type	Green Time sec	Cycle Length sec	Prog. Speed mph	Distance to Signal feet
s2	Left-Turn							
	Through							
S5	Left-Turn							
	Through							

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

Movement 2

Movement 5

Shared ln volume, major th vehicles: Shared ln volume, major rt vehicles: Sat flow rate, major th vehicles: Sat flow rate, major rt vehicles: Number of major street through lanes:

Worksheet 4-Critical Gap and Follow-up Time Calculation

Critical	Gap Calc	ulatio	on			*****			
Movement		1	4	7	. 8	9	10	11	12
		L	L	L	т	R	L	т	R
t(c,base	:)		4.1	7.5		6.2	• • • •		
t(c,hv)		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
P(hv)			4	1		1			
t(c,g)				0.20	0.20	0.10	0.20	0.20	0.10
Percent	Grade			0.00	0.00	0.00	0.00	0.00	0.00
t(3,1t)			0.00	0.70		0.00			
t(c,T):	1-stage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2-stage	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
t(c)	1-stage		4.2	6.8		6.2			
	2-stage		4.2	5.8		6.2			
Follow-U	Jp Time Ca	lcula	tions						
Movement		1	4	7	8	9	10	11	12
		L	L	L	т	R	L	т	R
t(f,base t(f,HV) P(HV)	2)	1.00	2.20 1.00 4	3.50 1.00 1	1.00	3.30 1.00 1	1.00	1.00	1.00
t(f)			4 2.2	1 3.5		1 3.3			

Worksheet 5-Effect of Upstream Signals

Computation	1-Queue	Clearance	Time	at	Upstream	Signal		
					Mov	vement 2	Mov	vement 5
					V(t)	V(l,prot)	V(t)	V(l,prot)

V prog Total Saturation Flow Rate, s (vph) Arrival Type Effective Green, g (sec) Cycle Length, C (sec) Rp (from Exhibit 16-11) Proportion vehicles arriving on green P

g(q1) g(q2) g(q)

Computation 2-Pro	oport	ion of 1	wsc Int	ersect		ne bloc: nent 2		Movement	- 5
				· v		V(l,prot			prot)
•		-					, ,,	, v(±	, proc,
alpha									
peta									
Fravel time, t(a) (se	c)							
Smoothing Factor									
Proportion of con	nflic	ting flo	w, f						
Max platooned flo	ow, V	(c,max)	· ·						
Min platooned flo	ow, V	(c,min)							
Duration of bloc	ked p	eriod, t	(p)						
Proportion time 1					0.0	000		0.000	
Computation 3-Pla	atoon	Event F	Periods	Re	sult	· · · · · · · · · · · · · · · · · · ·			
p(2)					000				
p(5)				0.	000				
o (dom)									
o(subo)						1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -			
Constrained or u	ncons	trained?							
Proportion		11			(0)		(2)		
unblocked		(1			(2)	· -	(3)		
for minor			e-stage			Stage Pr			
movements, p(x)		Proc	cess	St	age I		Stage	II	
p(1)									
p(4)						•			
p(7)									
2(7) 2(8)									
p(0)									
p(10)									
p(11)									
-									
p(12)									
Computation 4 and	d 5							* * *	
Single-Stage Pro	cess								
Movement		1	4	7	8	9	10	11	12
		г	L	\mathbf{L}	т	R	L	Ť	R
Vc,x			259	283		76			
5									
Px ·		•							
Vc,u,x						÷			
Cr,x					i				
C plat,x									
Iwo-Stage Proces		7		8 -		10		1	1
, ,	age1	, Stage2	Stage1		6) C+		200)		
SU	uyei	Scayez	Stage1	. stag	54 DC	agel St	ayez	Stage1	Scagez
V(c,x) 15	3	130							
5		3000					•		
P(x)									
V(c,u,x)		•							
· · · · · · · · · · · · · · · · · · ·									

C(plat,x)

worksheet 6-impedance and capacity Equation	15	
Step 1: RT from Minor St.	9	12
Conflicting Flows	76	
Potential Capacity	987	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	987	
Probability of Queue free St.	0.99	1.00
Step 2: LT from Major St.	4	1
Conflicting Flows	259	, <u>, , , , , , , , , , , , , , , , , , </u>
Potential Capacity	1288	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	1288	
Probability of Queue free St.	0.98	1.00
Maj L-Shared Prob Q free St.		
Step 3: TH from Minor St.	8	11
Conflicting Flows	· · · · · · · · · · · · · · · · · · ·	
Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt Movement Capacity	0.98	0.98
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Conflicting Flows	283	
Potential Capacity	687	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.98
Maj. L, Min T Adj. Imp Factor.		0.99
Cap. Adj. factor due to Impeding mymnt	0.98	0.98
Movement Capacity	676	
The second second second second second second second second second second second second second second second se		

Worksheet 6-Impedance and Capacity Equations

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
Part 1 - First Stage		
Conflicting Flows		
Potential Capacity	775	726
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.98
Movement Capacity	775	714
Probability of Queue free St.	1.00	1.00
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity	726	697
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.98	1.00
Movement Capacity	714	697

Part 3 - Single Stage Conflicting Flows

Potential Capacity Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mvmnt Movement Capacity	1.00 0.98	1.00 0.98
Result for 2 stage process:		·
a	0.95	0.95
Y C t		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Part 1 - First Stage	· · · · · · · · · · · · · · · · · · ·	
Conflicting Flows	153	
Potential Capacity	862	803
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.98
Movement Capacity	862	790
Part 2 - Second Stage	· · · · · · · · · · · · · · · · · · ·	
Conflicting Flows	130	
Potential Capacity	885	944
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.98	0.99
Movement Capacity	871	934
Part 3 - Single Stage		
Conflicting Flows	283	
Potential Capacity	687	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.98
Maj. L, Min T Adj. Imp Factor.		0.99
Cap. Adj. factor due to Impeding mvmnt	0.98	0.98
Movement Capacity	676	
Results for Two-stage process:	M.	
a	0.95	0.95
У	0.95	
Ct	762	

Worksheet 8-Shared Lane Calculations

Movement	7	8	9	10	11	12
	\mathbf{L}	T	R	\mathbf{L}	Т	R
Volume (vph)	90		10			
Movement Capacity (vph) Shared Lane Capacity (vph)	762		987			

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7		9	10	11	12
•	L	T	R	L	Т	R
C sep	762		987	·		
Volume	90		10			
Delay						
0 sep						

Q sep

Q sep +1 round (Qsep +1)



n max C sh SUM C sep n C act

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config		L	L		R			
v (vph)		21	90		10			•
C(m) (vph)		1288	762		987			
v/c		0.02	0.12		0.01			
95% queue length		0.05	0.40		0.03			
Control Delay		7.8	10.4		8.7			
LOS		A	В		А			
Approach Delay				10.2				
Approach LOS				в				

Worksheet 11-Shared Major LT Impedance and Delay

Movement 2Movement 5p(oj)1.000.98v(il), Volume for stream 2 or 51.000.98v(i2), Volume for stream 3 or 651.00s(il), Saturation flow rate for stream 2 or 551.00s(i2), Saturation flow rate for stream 3 or 67.8P*(oj)7.8d(M,LT), Delay for stream 1 or 47.8N, Number of major street through lanes7.8

Analyst: KHAInter.: U.S. 19 & CR 40Agency: KHAArea Type: All other areasDate: 12/8/2008Jurisd: FDOT District 2Period: P.M. Peak HourYear : 2017 Peak Operations TrafficProject ID: Levy County Advanced ReactorE/W St: CR 40/Follow That Dream PkwyN/S St: U.S. 19

				SIC	GNALI	ZED I	NTERSE	CTION	SUMMA	NRY				
		Eas	tbour	nd	We	stbou	ind	Nor	thbou	ınd	Sc	uthbo	ound	· [
	I	-	Т	R	L	т	R	L	т	R	L	т	R	
No. Lar	nes	0	1	1	0	1	1		2	0		. 2	0	
LGConfi			LT	R	-	LI		L	TR		L L	- <u>-</u> TF	-	ł
Volume	21	7	74	86	74	63	55	129	334	111	62	433	. 18	
Lane Wi	1		12.0		• -		12.0	12.0		***	1	12.0		
RTOR Vo			12.0	24		12.0	12.0	12.0	12.0	33	12.0	12.0	5	1
—		0.5				~ 7 7								
Duratio	on U	.25		Area '			other Operat							
	Combinat	cior		2	3	4			5	6	7		8	
EB Lef			A				NB	Left	А					
Thr	cu		А					Thru		А				
Rig	ght		А					Right	2	А				
Pec	ls						İ	Peds						
WB Lef	Et		А				SB	Left	А					
Thr	cu		А				Ì	Thru		А				
Rig	ght		А				i	Right		A				
Ped							i	Peds						
NB Rig							EB	Right	=					
SB Rig	-						WB	Right						
Green	<i>_</i>		10.0				1 112		10.0	25.	0			
Yellow			4.0						4.0	4.0				
All Red	4		1.0						1.0	1.0				
	~		1.0							cle Le		60.0	0	secs
·							ormanc		-					
Appr/	Lane		-	j Sat	R	atios	5	Lane	Grou	o Ap	proad	ch		
Lane	Group			v Rate										
Grp	Capac	ity		(s)	v/c	ç	J/C	Delay	7 LOS	Del	ay LO	DS		
Eastbou	und	•						•.•						
LT	302		164	18	0.3	6 ().18	22.1	с	21.	8 (-		
R	. 290		158		0.2).18	21.3	C	22.	0	-		
Westbou			100		0.2	5 0		21.5	C C					
westbou	Inc													
LT	264		144	10	0.5	5 ().18	24.8	С	23.	9 (2		
R	290		158		0.1		0.18	20.7	C					
Northbo	ound													
L	321		175	52	0.4	3 (0.18	22.6	С					
TR	1479		343		0.3).43	11.2		13.	9 1	3		
	1117		54.		0.0	5 (±±.2	<u>د</u>	19.		~		
Southbo														
L	321		17	52	0.2	1 ().18	21.1	С					
TR	1515		349	97	0.3	1 ().43	11.3	В	12.	5 I	3		
	Inte	rsed	ction	Delay	= 15	.6	(sec/ve	eh) :	Inter	sectio	n LOS	5 = B		

____SIGNALIZED INTERSECTION SUMMARY

Phone: E-Mail: Fax:

____OPERATIONAL ANALYSIS___

Analyst: KHA Agency/Co.: KHA Date Performed: 12/8/2008 Analysis Time Period: P.M. Peak Hour Intersection: U.S. 19 & CR 40 Area Type: All other areas Jurisdiction: FDOT District 2 Analysis Year: 2017 Peak Operations Traffic Project ID: Levy County Advanced Reactor E/W St: CR 40/Follow That Dream Pkwy N/S St: U.S. 19

____VOLUME DATA__

	Eas	stbour	nd	Wes	stbou	nd	No	rthbou	und	Sou	lthbo	ind
	L	т	R	L	т	R	L	т	R	L	\mathbf{T}	R
Volume	27	74	86	74	63	55	129	334	111	62	433	18
% Heavy Veh	2	2	2	2	2	2	3	3	3	3	3	3
PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PK 15 Vol	7	20	23	20	17	15	34	89	30	16	115	5
Hi Ln Vol	ĺ			ĺ			Ì			ĺ		
% Grade	ĺ	0		ĺ	0		Ì	0		İ	0	
Ideal Sat		1900	1900		1900	1900	1900	1900		1900	1900	
ParkExist							· ·			ĺ		
NumPark		•		1								
No. Lanes	0	1	1	0	1	1	1	2	0	1	2	0
LGConfig		LT	R		\mathbf{LT}	R	L	TR		L	ΤR	
Lane Width		12.0	12.0		12.0	12.0	12.0	12.0		12.0	12.0	
RTOR Vol			24			19			33			5
Adj Flow		108	66		146	38	137	438		66	475	
%InSharedLn												
Prop LTs		0.20			0.5			0.0	00		0.0	00
Prop RTs	0	.000	1.000	0	.000	1.000	0	.189		0	.029	
Peds Bikes	0			0			0			0		
Buses		0	0	1	0	0	0	0		0	0	
%InProtPhase	9						1					
Duration	0.25		Area '	Type:	All	other .	areas					

	Eastbound	Westbound	Northbound	Southbound
	LTR	LTR	LTR	LTR
Init Unmet	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Arriv. Type	3 3	3 3	3 3	3 3
Unit Ext.	3.0 3.0	3.0 3.0	3.0 3.0	3.0 3.0
I Factor	1.000	1.000	1.000	1.000
Lost Time	2.0 2.0	2.0 2.0	2.0 2.0	2.0 2.0
Ext of g	3.0 3.0	3.0 3.0	3.0 3.0	3.0 3.0
Ped Min g	3.2	3.2	3.2	3.2
	, ,			1
		PHASE DATA	·	

___OPERATING PARAMETERS_

Pha	se Combination	1	2	3	4			5	6	7	8
EB	Left Thru Right Peds	`А А А			and decided Statistics Made	NB	Left Thru Right Peds	А	A A		
WB	Left Thru Right Peds	A A A			-	SB	Left Thru Right Peds	A	A A		
NB	Right					EB	Right				
SB	Right					WB	Right				
		10.0 4.0 1.0			I			10.0 4.0 1.0	25.0 4.0 1.0	۰.	

Cycle Length: 60.0 secs

Volume Adju	stment	t.										
	Eas	stbou	nd	Wes	stbour	nđ	Northbound			Southbound		
	L	т	R	L'	т	R	L	T.	R	L	т	R
Volume, V	27	74	86	74	63	55	129	334	111	62	433	18
PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj flow	29	79	66	79	67	38	137	355	83	66	461	14
No. Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Lane group	1	\mathbf{LT}	R	Ì.	LT	R	L	TR		L	TR	
Adj flow	i	108	66	Ì	146	38	137	438		66	475	
Prop LTs	İ	0.2	69		0.54	41	1	0.0	00	ļ	0.0	00
Prop RTs	j 0	.000	1.000	0	.000	1.000	j 0	.189		0	.029	

VOLUME ADJUSTMENT AND SATURATION FLOW WORKSHEET

Saturation 1	Flow Ra	ate (se	ee Exhi	ibit 1	6-7 to	deterr	nine the	e adju	stment	facto	ors)
Eas	stbound	1 ·	Wes	stbound	đ	Nort	hbound	· .	Sout	hbound	9
LG							TR				
So	1900	1900		1900	1900	1900	1900		1900	1900	
	1						2 (2	0
fW	1.000	1.000		1.000	1.000	1.000	1.000		1.000	1.000	
							0.971				
fG	1.000	1.000		1.000	1.000	1.000	1.000		1.000	1.000	
fP	1.000						1.000				
fBB	1.000	1.000		1.000	1.000	1.000	1.000		1.000	1.000	
fA	1.000	1.000		1.000	1.000	1.000	1.000		1.000	1.000	
fLU	1.000	1.000		1.000	1.000	1.000	0.952		1.000	0.952	
fRT	1.000	0.850		1.000	0.850		0.972			0.996	
flt							1.000				
Sec.											
fLpb	1.000			1.000		1.000	1.000		1.000	1.000	
fRpb	1.000	1.000		1.000	1.000		1.000			1.000	
S	1648	1583		1440	·1583	1752	3412		1752	3497	
Sec.											
					ND LOS						
Capacity An	alysis	and La	ane Gr	oup Caj	pacity						
		A	dj	Adj	Sat 1	Flow	Green	1I	Jane G	roup	
Appr/ L	ané	Flow	Rate	Flow 1	Rate 1	Ratio	Ratio	o Car	pacity	v/c	
Mvmt G	roup	()	V)	(s)	(v/s)	(g/C))	(c)	Ratio	C

Right R 66 1583 0.04 0.18 290 0.23 Westbound Prot Perm Left Prot Perm 146 1440 # 0.10 0.18 264 0.55 Right R 38 1583 0.02 0.18 290 0.13 Northbound Prot Perm Left L 137 1752 # 0.08 0.18 321 0.43 Prot Perm Left L 137 1752 # 0.08 0.18 321 0.43 Prot Perm Left L 66 1752 0.04 0.18 321 0.21 Southbound Prot Perm Left L 66 1752 0.04 0.18 321 0.21 Southbound Prot Perm Thru TR 475 3497 # 0.14 0.43 1515 0.31 Sum of flow ratios for critical lane groups, Yc = Sum (v/s) = 0.32 0.21 Total lost time per cycle, L = 12.00 sec Critical flow rate to capacity ratio, Xc = (Yc) (C)/(C-L) = 0.39 Delay LOS Delay LOS	R 0.2 Westboun LT 0.5 R 0.1 Northbou L 0.4 IR 0.3 Southbou L 0.2	5 0.18 3 0.18 and 3 0.18 4 0.43 and 2 0.18	20.5 21.7 11.1 20.8	1.000 1.000 1.000	290 321 1479 321	0.11 0.11 0.11	0.2 0.9 0.1 0.3	0.0 0.0 0.0	20.7 22.6 11.2 21.1	C C B C	13.9	B
Right R661583 0.04 0.18 290 0.23 WestboundProtPermLeftProtPermThru LT1461440 \ddagger 0.10 0.18 264 0.55 Right R381583 0.02 0.18 290 0.13 NorthboundProtPermLeft L1371752 \ddagger 0.08 0.18 321 0.43 ProtPermThru TR4383412 0.13 0.43 1479 0.30 RightSouthboundProtPermLeft L661752 0.04 0.18 321 0.21 ProtPermThru TR4753497 \ddagger 0.14 0.43 1515 0.31 RightSum of flow ratios for critical lane groups, Yc =Sum (v/s) = 0.32 0.32 Control Delay and LOS DeterminationAppr/RatiosUfProgLaneIncrementalResLane GroupApproachLaneDel AdjGrpFactor DelDelDelay LOSDelay LOSDelay LOSEastboundLT0.360.1821.41.0003020.110.70.022.1C21.8CR0.130.1820.91.0002900.110.40.021.3CNorthboundLaneCol1.0002900.110.7<	R 0.2 Westboun LT 0.5 R 0.1 Northbou L 0.4 TR 0.3 Southbou	5 0.18 3 0.18 ind 3 0.18 0 0.43 ind	20.5 21.7 11.1	1.000 1.000 1.000	290 321 1479	0.11 0.11 0.11	0.2 0.9 0.1	0.0 0.0 0.0	20.7 22.6 11.2	C C		
Right R 66 1583 0.04 0.18 290 0.23 Perot Perm Left Prot Perm 0.18 264 0.55 Right R 38 1583 0.02 0.18 290 0.13 Northbound Prot Perm 146 1440 # 0.10 0.18 264 0.55 Northbound Prot Perm 137 1752 # 0.08 0.18 321 0.43 Prot Perm Thru TR 438 3412 0.13 0.43 1479 0.30 Right Southbound Prot Perm 0.43 1479 0.30 Right 66 1752 0.04 0.18 321 0.21 Prot Perm Thru TR 475 3497 # 0.14 0.43 1515 0.31 Sum of flow ratios for critical lane groups, Yc = Sum (v/s) = 0.32 0.12 0.14 1515 0.31 Control Delay and LOS Determination	R 0.2 Westboun LT 0.5 R 0.1 Northbou L 0.4	5 0.18 3 0.18 and 3 0.18	20.5 21.7	1.000	290 321	0.11	0.2 0.9	0.0	20.7 22.6	C C		
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Right R 66 1583 0.04 0.18 290 0.23 Perto Perm Left Prot Perm 0.02 0.18 290 0.23 Perm Left Prot Perm 0.00 0.18 264 0.55 Right R 38 1583 0.02 0.18 290 0.13 Northbound Prot Perm 137 1752 # 0.08 0.18 321 0.43 Prot Perm Left L 137 1752 # 0.08 0.18 321 0.43 Prot Perm Thru TR 438 3412 0.13 0.43 1479 0.30 Right 66 1752 0.04 0.18 321 0.21 Perm Left L 66 1752 0.04 0.18 321 0.21 Perm Thru TR 475 3497 # 0.14 0.43 1515 0.31 Right Subouthbound Perm Left L 0.17 0.02 C(C)/(C-L) = 0.39 Sum of flow	 0.2 Vestboun T 0.5 0.1 	5 0.18 3 0.18									23.9	С
Right R6615830.040.182900.23PersboundProtPermLeftProtPermThru LT1461440# 0.100.182640.55Right R3815830.020.182900.13IorthboundProtPermLeft L1371752# 0.080.183210.43ProtPermThru TR43834120.130.4314790.30RightSouthboundProtPermLeft L6617520.040.183210.21PermLeft L6617520.040.183210.21PermLeft L6617520.040.183210.21PermThru TR4753497# 0.140.4315150.31RightSum of flow ratios for critical lane groups, Yc =Sum (v/s) = 0.320.39Control Delay and LOS Determination	R 0.2 Vestboun	5 0.18									23.9	С
Right R 66 1583 0.04 0.18 290 0.23 Prot Perm Left Prot Perm 0.18 290 0.18 Perm Left Prot Perm 0.02 0.18 290 0.13 Northbound Prot Perm 146 1440 # 0.02 0.18 290 0.13 Northbound Prot Perm 137 1752 # 0.08 0.18 321 0.43 Perm Left L 137 1752 # 0.08 0.18 321 0.43 Perm Left L 137 1752 # 0.08 0.18 321 0.43 Perm Left L 66 1752 0.04 0.18 321 0.21 Prot Perm Thru TR 475 3497 # 0.14 0.43 1515 0.31 Right Southbound Prot Perm Thru TR 475 3497 # 0.14 0.43 1515 0.31 Sum of flow ratios for critical lane groups, Yc = Sum (v/s) = 0.32 <td< td=""><td>R 0.2 Westboun</td><td></td><td>22.3</td><td>1.000</td><td>264</td><td>0.15</td><td>2.5</td><td>0.0</td><td>24.8</td><td>С</td><td>23.9</td><td>С</td></td<>	R 0.2 Westboun		22.3	1.000	264	0.15	2.5	0.0	24.8	С	23.9	С
Right R 66 1583 0.04 0.18 290 0.23 Pert Perm Image: Second Se	२ 0.2											
Right R661583 0.04 0.18 290 0.23 PersProtPermLeftProtPermThru LT1461440# 0.10 0.18 264 0.55 Right R381583 0.02 0.18 290 0.13 NorthboundProtPermLeft L1371752# 0.08 0.18 321 0.43 ProtPermThru TR4383412 0.13 0.43 1479 0.30 RightSouthboundProtPermLeft L661752 0.04 0.18 321 0.21 PermThru TR4753497# 0.14 0.43 1515 0.31 RightSoun of flow ratios for critical lane groups, Yc =Sum (v/s) = 0.32 0.32 0.14 0.43 1515 0.31 RightSoun of flow ratios for critical lane groups, Yc = (Yc)(C)/(C-L) = 0.39 0.13 0.14 0.43 1515 0.31 Control Delay and LOS DeterminationAppr/RatiosUnfProgLaneIncrementalResLane GroupApproachAppr/RatiosUnfProgLaneIncrementalResLane GroupApproachAppr/RatiosUnfProgLaneIncrementalResLane GroupApproachControl Delay and LOS DeterminationIncrementa	R 0.2	D.										
Right R 66 1583 0.04 0.18 290 0.23 Perst Perm Left Prot Perm 0.18 264 0.55 Right R 38 1583 0.02 0.18 290 0.13 Northbound Prot Perm 146 1440 # 0.10 0.18 264 0.55 Northbound Prot Perm 1752 # 0.08 0.18 321 0.43 Prot Perm 137 1752 # 0.08 0.18 321 0.43 Prot Perm Thru TR 438 3412 0.13 0.43 1479 0.30 Right Southbound Prot Perm 14 0.43 1479 0.30 Right Southbound Perm Thru TR 438 3412 0.14 0.43 1479 0.30 Southbound Perm Thru TR 475 3497 # 0.14 0.43 1515 0.31 Southbound Perm Thru TR			20.9	1.000	290	0.11	0.4	0.0	21.3	С		
Right R 66 1583 0.04 0.18 290 0.23 Pertound Port Perm 0.18 290 0.23 Perm Left Perm 0.00 0.18 290 0.23 Perm Left Perm 0.00 0.18 264 0.55 Right R 38 1583 0.02 0.18 290 0.13 Northbound Perm 146 1440 # 0.08 0.18 221 0.43 Prot Perm Thru TR 438 3412 0.13 0.43 1479 0.30 Right Southbound Prot Perm 0.18 321 0.21 Prot Perm Eeft L 66 1752 0.04 0.18 321 0.21 Prot Perm Thru TR 475 3497 # 0.14 0.43 1515 0.31 Right Sum of flow ratios for critical lane groups, Yc = Sum (v/s) = 0.32 0.32 0.14 0.43 1515 0.31 Sum of flow rate to capacity ratio, <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>21.8</td><td>С</td></t<>											21.8	С
Right R6615830.040.182900.23Pestbound Prot Perm Left Prot Perm14614400.100.182640.55Right R3815830.020.182900.13Northbound Prot Perm Left L1371752#0.080.183210.43Prot Perm Thru TR43834120.130.4314790.300.30Right Southbound Prot Perm Thru TR43834120.130.4314790.30Right Southbound Prot Perm Thru TR6617520.040.183210.21Southbound Prot Perm Thru TR4753497#0.140.4315150.31Southbound Prot Perm Control Delay and LOS Determination Lane Perm Thru TRA753497#0.140.4315150.32Control Delay and LOS Determination Lane Perm DelAdjGrpFactor DelDelApproach Approach Delay LOS	sastboun						•				•	
Right R 66 1583 0.04 0.18 290 0.23 Jestbound Prot Perm Left Prot Perm 146 1440 # 0.10 0.18 290 0.23 Thru LT 146 1440 # 0.10 0.18 264 0.55 Right R 38 1583 0.02 0.18 290 0.13 Northbound Perm Left L 137 1752 # 0.08 0.18 321 0.43 Prot Perm Left L 137 1752 # 0.08 0.18 321 0.43 Post Perm Left L 66 1752 0.04 0.18 321 0.21 Prot Perm Left L 66 1752 0.04 0.18 321 0.21 Prot Perm Left L 66 1752 0.04 0.18 321 0.21 Perm Left L 66 1752 0.04 0.18 321 </td <td></td> <td></td> <td></td> <td></td> <td>•</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>__</td> <td></td>					•						_ _	
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Right R 66 1583 0.04 0.18 290 0.23 Vestbound Prot Perm Left Prot Perm Left Prot Perm 146 1440 0.10 0.18 264 0.55 Right R 38 1583 0.02 0.18 290 0.13 Northbound Pot Perm 137 1752 # 0.08 0.18 321 0.43 Prot Perm Left L 137 1752 # 0.08 0.18 321 0.43 Prot Perm Thru TR 438 3412 0.13 0.43 1479 0.30 Right Bouthbound Prot Perm Left L 66 1752 0.04 0.18 321 0.21 Prot Perm Left L 66 1752 0.04 0.18 321 0.21 Prot Perm Thru TR 475 3497 # 0.14 0.43 1515 0.31 Right time per cycle, L = 1		Ratios		-					Lane	Group	Appro	ach
Right R661583 0.04 0.18 290 0.23 PestboundProtPermLeftProtPermThru LT1461440 # 0.10 0.18 264 0.55 Right R381583 0.02 0.18 290 0.13 NorthboundProtPermLeft L1371752# 0.08 0.18 321 0.43 ProtPermThru TR4383412 0.13 0.43 1479 0.30 RightSouthboundProtPermLeft L661752 0.04 0.18 321 0.21 ProtPermThru TR4753497# 0.14 0.43 1515 0.31 SouthboundProtPermContraction for critical lane groups, Yc =Sum (v/s) = 0.32 0.32 Fotal lost time per cycle, L = 12.00 secCritical flow rate to capacity ratio,Xc = (Yc)(C)/(C-L) = 0.39												<u> </u>
Right R 66 1583 0.04 0.18 290 0.23 Vestbound Prot Perm Left Prot Perm 146 1440 # 0.10 0.18 264 0.55 Right R 38 1583 0.02 0.18 290 0.13 Northbound Prot Perm 137 1752 # 0.08 0.18 321 0.43 Prot Perm 137 1752 # 0.08 0.18 321 0.43 Prot Perm 137 1752 # 0.08 0.18 321 0.43 Prot Perm Thru TR 438 3412 0.13 0.43 1479 0.30 Right Southbound Prot Perm 145 0.43 1479 0.31 Prot Perm 145 0.66 1752 0.04 0.18 321 0.21 Prot Perm Thru TR 475 3497 # 0.14 0.43 1515 0.31 Right		id		capacit	-y rat	-0,	AC	. – (10	., (0,) (- 10 -	0.32	
Right R 66 1583 0.04 0.18 290 0.23 Westbound Prot Perm 146 1440 0.10 0.18 264 0.55 Perm Thru LT 146 1440 # 0.10 0.18 264 0.55 Right R 38 1583 0.02 0.18 290 0.13 Northbound Prot Perm 137 1752 # 0.08 0.18 321 0.43 Prot Perm Thru TR 438 3412 0.13 0.43 1479 0.30 Right Southbound Prot Perm 145 0.18 321 0.21 Prot Perm Thru TR 438 3412 0.13 0.43 1479 0.30 Right Southbound Prot Perm 1475 0.04 0.18 321 0.21 Prot Perm Thru TR 475 3497 # 0.14 0.43 1515 0.31 Sum of flow ratios for critical lane groups, Yc = Sum (v/s) = 0.32 0.								r = 1 V c	1 (C) / /	(C-T.) -	0 30	
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Right R 66 1583 0.04 0.18 290 0.23 Mestbound Prot Perm 146 140 </td <td>Right</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Right											
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Right R 66 1583 0.04 0.18 290 0.23 estbound Prot Perm 146 1440 146 147 146 Perm 146 1440 # 0.10 0.18 264 0.55 Right R 38 1583 0.02 0.18 290 0.13 orthbound Prot Perm 146 1440 # 0.10 0.18 264 0.55 Right R 38 1583 0.02 0.18 290 0.13 orthbound Prot Perm 137 1752 # 0.08 0.18 321 0.43 Prot Perm 137 1752 # 0.08 0.18 321 0.43 Prot Perm 1479 0.30 1479 0.30 Right Outhbound Prot Perm Perm 1479 0.30 Perm Left L 66 1752 0.04 0.18 321 0.21												
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Right R 66 1583 0.04 0.18 290 0.23 estbound Prot Perm 146 1440 140 </td <td></td> <td>T</td> <td>-</td> <td>6</td> <td>1 7</td> <td>50</td> <td>0.04</td> <td>0</td> <td>10</td> <td>201</td> <td>0 21</td> <td></td>		T	-	6	1 7	50	0.04	0	10	201	0 21	
Right R 66 1583 0.04 0.18 290 0.23 estbound Prot Perm 146 1440 140 </td <td>Prot</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Prot											
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Right R 66 1583 0.04 0.18 290 0.23 estbound Prot Perm 146 1440 150 150 </td <td></td> <td>TR</td> <td>Δ</td> <td>38</td> <td>34</td> <td>12</td> <td>0.13</td> <td>Ο</td> <td>43</td> <td>1479</td> <td>0.30</td> <td></td>		TR	Δ	38	34	12	0.13	Ο	43	1479	0.30	
Right R 66 1583 0.04 0.18 290 0.23 estbound Prot Perm 1												
Right R 66 1583 0.04 0.18 290 0.23 Westbound Prot Perm 146 1440 140<		L	1	37	17	52 1	ŧ 0.08	0.	18	321	0.43	
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Right R 66 1583 0.04 0.18 290 0.23 Nestbound Prot -	Prot											
Right R 66 1583 0.04 0.18 290 0.23 Vestbound Prot Perm 100 </td <td>-</td> <td></td> <td>-</td> <td></td> <td>_•</td> <td>-</td> <td></td> <td>- •</td> <td></td> <td></td> <td></td> <td></td>	-		-		_•	-		- •				
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Right R 66 1583 0.04 0.18 290 0.23 Jestbound Prot Perm Left Prot		T.T	1	46	14	40 ±	ŧ 0.10	0	18	264	0.55	
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Right R 66 1583 0.04 0.18 290 0.23 Vestbound Prot Perm												
Right R 66 1583 0.04 0.18 290 0.23 Vestbound												
Right R 66 1583 0.04 0.18 290 0.23	Prot											
	lestbound											
	-											
Thru LT 108 1648 0.07 0.18 302 0.36		LT	1	08	16	48	0.07	0.	18	302	0.36	
Perm	Thru											
Prot	Perm Thru											
	Prot Perm Thru											
Perm	Perm Thru											
Prot	Left Prot Perm Thru											
astbound	Perm Left Prot Perm Thru											

Intersection delay = 15.6 (sec/veh) Intersection LOS = B

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_TWO-WAY STOP CONTROL SUMMARY___ Analyst: KHA KHA Agency/Co.: 12/11/2008 Date Performed: Analysis Time Period: P.M. Peak Hour U.S. 19 & Operations Access Intersection: FDOT Jurisdiction: Units: U. S. Customary Analysis Year: 2017 Peak Operations Traffic Project ID: Levy County Advanced Reactor East/West Street: Operations Access North/South Street: U.S. 19 Intersection Orientation: NS Study period (hrs): 0.25 Vehicle Volumes and Adjustments_ Southbound Major Street: Approach Northbound 2 3 5 6 Movement 1 4 т \mathbf{L} т R \mathbf{L} R Volume 298 14 6 341 0.95 0.95 0.95 Peak-Hour Factor, PHF 0.95 Hourly Flow Rate, HFR 313 14 6 358 Percent Heavy Vehicles 2 --/ 2 Median Type/Storage Raised curb RT Channelized? No 2 2 Lanes 1 1 Configuration т R т Ŀ Upstream Signal? No No Minor Street: Approach Westbound Eastbound 7 Movement 8 9 10 11 12 т \mathbf{L} т R \mathbf{L} R Volume 130 55 Peak Hour Factor, PHF 0.95 0.95 Hourly Flow Rate, HFR 136 57 Percent Heavy Vehicles 2 2 Percent Grade (%) 0 0 Exists?/Storage Flared Approach: Lanes 1 1 Configuration \mathbf{L} R Delay, Queue Length, and Level of Service_ Eastbound Approach NB SB Westbound 4 7 8 9 10 11 12 Movement 1 R Lane Config L L v (vph) 6 136 57 C(m) (vph) 1229 633 888 0.00 0.21 0.06 v/c 95% queue length 0.01 0.81 0.21 7.9 12.2 9.3 Control Delay LOS А В А Approach Delay 11.4 Approach LOS В

Phone: E-Mail: Fax:

	TWO-WAY ST	TOP CONTR	ROL (TWS	SC) ANAL	YSIS			
Analyst:	KHA							
Agency/Co.:	KHA							
Date Performed:	12/11/200	8						
Analysis Time Period:	P.M. Peak	Hour						
Intersection:	U.S. 19 &	Operatio	ons Aco	cess				
Jurisdiction:	FDOT							
Units: U. S. Customar	У							
Analysis Year:	2017 Peak	Operatio	ons Tra	affic				
Project ID: Levy Cou	nty Advance	ed Reacto	or					
East/West Street:	Operation	s Access						
North/South Street:	U.S. 19							
Intersection Orientat	ion: NS		:	Study pe	riod ()	hrs):	0.25	
	Vehicle	Volumes	and A	djustmen	its			
Major Street Movement	s 1	2	3	4	5	6		
	\mathbf{L}	т	R	L	Т	R		

Major Street Movements	1	2	3	4	5	6	
	L	т	R	L	Т	R	
Volume		298	14	6	341		
Peak-Hour Factor, PHF		0.9	5 0.95	0.95	0.95		
Peak-15 Minute Volume		78	4	2	90		
Hourly Flow Rate, HFR		313	14	6	358		
Percent Heavy Vehicles				2			
Median Type/Storage	Raise	d cu	rb	/ 2			
RT Channelized?			No				
Lanes		2	1	1	2		
Configuration		т	R	L	т		
Upstream Signal?		No			No		
Minor Street Movements	7	8	9	10	11	12	
	L	т	R	L	т	R	
Volume	130		55				
Peak Hour Factor, PHF	0.95		0.95				
Peak-15 Minute Volume	34		14				
Hourly Flow Rate, HFR	136		57				
Percent Heavy Vehicles	2		2				
Percent Grade (%)		0			0		
Flared Approach: Exists	?/Storage	•		/			/
RT Channelized?			No				
Lanes	1		1				
Configuration	L		R				

Pedestrian Volumes and Adjustments					
Movements	13	14	15	16	
Flow (ped/hr)	0	0	0	0	
Lane Width (ft)	12.0	12.0	12.0	12.0	
Walking Speed (ft/sec)	4.0	4.0	4.0	4.0	

Percent Blockage 0 0 0

		Prog.	Sat	Arriv	ral 4	Green	Cycle	Prog.	Distance
		Flow	Flow	л Туре	е і	Time	Length	Speed	to Signal
		vph	vph			sec	sec	mph	feet
S2 Left	-Turn								·····
Thro	5								
S5 Left	-Turn								
Thro	ough								
Workshee	et 3-Data	for C	omputing	f Effect	t of D	elay to	o Major	Street N	Vehicles
······						Movem	ent 2	Moveme	ent 5
Workshee	et 4-Criti	ical G	ap and H	Follow-1	up Tim	e Calc	ulation		
	et 4-Crit			rollow-u	up Tim	e Calc	ulation		
Critical	Gap Calo	culati	.on	<u></u>	-			11	12
	Gap Calo			Follow-1 7 L	up Tim 8 T	e Calc 9 R	ulation 10 L	11 T	12 R
Critical	Gap Calo	culati 1 L	.on 4 L 4.1	7 L 7.5	8 T	9 R 6.2	10 L	Т	R
Critical Movement t(c,base t(c,hv)	Gap Calo	culati 1	.on 4 L 4.1 2.00	7 L 7.5 2.00	- 8	9 R 6.2 2.0	10 L	Т	R
Critical Movement t(c,base t(c,hv) P(hv)	Gap Calo	culati 1 L	.on 4 L 4.1	7 L 7.5 2.00 2	8 T 2.00	9 R 6.2 2.0 2	10 L 0 2.00	т 2.00	R 2.00
Critical Movement t(c,base t(c,hv) P(hv) t(c,g)	Gap Calo	culati 1 L	.on 4 L 4.1 2.00	7 L 7.5 2.00 2 0.20	8 T 2.00 0.20	9 R 6.2 2.0 2 0.1	10 L 0 2.00 0 0.20	T 2.00 0.20	R 2.00 0.10
Critical Movement t(c,base t(c,hv) P(hv) t(c,g) Percent	Gap Calo	culati 1 L	L 4.1 2.00 2	7 L 7.5 2.00 2 0.20 0.00	8 T 2.00	9 R 6.2 2.0 2 0.1 0.0	10 L 0 2.00 0 0.20 0 0.20	T 2.00 0.20	R 2.00 0.10
Critical Movement t(c,base t(c,hv) P(hv) t(c,g) Percent t(3,lt)	Grade	culati 1 L 2.00	.on 4 L 4.1 2.00 2 0.00	7 L 7.5 2.00 2 0.20 0.00 0.70	8 T 2.00 0.20 0.00	9 R 6.2 2.0 2 0.1 0.0 0.0	10 L 0 2.00 0 0.20 0 0.00 0	T 2.00 0.20 0.00	R 2.00 0.10 0.00
Critical Movement t(c,base t(c,hv) P(hv) t(c,g) Percent	Grade	culati 1 2.00	.on 4 L 4.1 2.00 2 0.00 0.00	7 L 7.5 2.00 2 0.20 0.00 0.70 0.00	8 T 2.00 0.20 0.00 0.00	9 R 6.2 2.0 2 0.1 0.0 0.0 0.0	10 L 0 2.00 0 0.20 0 0.00 0 0.00	T 2.00 0.20 0.00 0.00	R 2.00 0.10 0.00 0.00
Critical Movement t(c,base t(c,hv) P(hv) t(c,g) Percent t(3,1t) t(c,T):	Grade 1-stage 2-stage	culati 1 2.00	.on 4 L 4.1 2.00 2 0.00 0.00 0.00 0.00	7 L 7.5 2.00 2 0.20 0.00 0.70 0.00 1.00	8 T 2.00 0.20 0.00	9 R 6.2 2.0 2 0.1 0.0 0.0 0.0 0.0	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 0.00 0 1.00	T 2.00 0.20 0.00 0.00	R 2.00 0.10 0.00 0.00
Critical Movement t(c,base t(c,hv) P(hv) t(c,g) Percent t(3,lt)	Grade	culati 1 2.00	.on 4 L 4.1 2.00 2 0.00 0.00	7 L 7.5 2.00 2 0.20 0.00 0.70 0.00	8 T 2.00 0.20 0.00 0.00	9 R 6.2 2.0 2 0.1 0.0 0.0 0.0	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 0.00 0 1.00	T 2.00 0.20 0.00 0.00	R 2.00 0.10 0.00 0.00
Critical Movement t(c,base t(c,hv) P(hv) t(c,g) Percent t(3,lt) t(c,T): t(c)	Grade 1-stage 2-stage 2-stage 2-stage	Culati 1 2.00 0.00 0.00	.on 4 L 4.1 2.00 2 0.00 0.00 0.00 4.1 4.1	7 L 7.5 2.00 2 0.20 0.00 0.70 0.00 1.00 6.8	8 T 2.00 0.20 0.00 0.00	9 R 6.2 2.0 2 0.1 0.0 0.0 0.0 0.0 0.0 6.2	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 0.00 0 1.00	T 2.00 0.20 0.00 0.00	R 2.00 0.10 0.00 0.00
Critical Movement t(c,base t(c,hv) P(hv) t(c,g) Percent t(3,lt) t(c,T): t(c) Follow-U	Grade 1-stage 2-stage 1-stage 2-stage 2-stage 2-stage	Culati 1 2.00 0.00 0.00	Con 4 L 4.1 2.00 2 0.00 0.00 0.00 4.1 4.1 4.1	7 L 7.5 2.00 2 0.20 0.00 0.70 0.00 1.00 6.8 5.8	8 T 2.000 0.20 0.00 0.00 1.00	9 R 6.2 2.0 2 0.1 0.0 0.0 0.0 0.0 6.2 6.2	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 1.00	T 2.00 0.20 0.00 0.00 1.00	R 2.00 0.10 0.00 0.00 0.00
Critical Movement t(c,base t(c,hv) P(hv) t(c,g) Percent t(3,lt) t(c,T): t(c)	Grade 1-stage 2-stage 1-stage 2-stage 2-stage 2-stage	Culati 1 2.00 0.00 0.00 alcula 1	Con 4 L 4.1 2.00 2 0.00 0.00 0.00 4.1 4.1 4.1	7 L 7.5 2.00 2 0.20 0.00 0.70 0.00 1.00 6.8 5.8 7	8 T 2.000 0.200 0.000 0.000 1.000	9 R 6.2 2.0 2 0.1 0.0 0.0 0.0 0.0 6.2 6.2 9	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 1.00	T 2.00 0.20 0.00 0.00 1.00	R 2.00 0.10 0.00 0.00 0.00
Critical Movement t(c,base t(c,hv) P(hv) t(c,g) Percent t(3,lt) t(c,T): t(c) Follow-U	Grade 1-stage 2-stage 1-stage 2-stage 2-stage 2-stage	Culati 1 2.00 0.00 0.00	Con 4 L 4.1 2.00 2 0.00 0.00 0.00 4.1 4.1 4.1	7 L 7.5 2.00 2 0.20 0.00 0.70 0.00 1.00 6.8 5.8	8 T 2.000 0.20 0.00 0.00 1.00	9 R 6.2 2.0 2 0.1 0.0 0.0 0.0 0.0 6.2 6.2	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 1.00	T 2.00 0.20 0.00 0.00 1.00	R 2.00 0.10 0.00 0.00 0.00
Critical Movement t(c,base t(c,hv) P(hv) t(c,g) Percent t(3,lt) t(c,T): t(c) Follow-t Movement	Grade 1-stage 2-stage 1-stage 2-stage 2-stage Jp Time Ca	Culati 1 L 2.00 0.00 0.00 alcula 1 L	2.00 4 L 4.1 2.00 2 0.00 0.00 0.00 0.00 4.1 4.1 0.00 4.1 4.1 2.20	7 L 7.5 2.00 2 0.20 0.00 0.70 0.00 1.00 6.8 5.8 7 L 3.50	8 T 2.000 0.200 0.000 1.000 8 T	9 R 6.2 2.0 2 0.1 0.0 0.0 0.0 0.0 6.2 6.2 9 R 3.3	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 1.00 10 L 0	T 2.00 0.20 0.00 0.00 1.00	R 2.00 0.10 0.00 0.00 0.00 12 R
Critical Movement t(c,base t(c,hv) P(hv) t(c,g) Percent t(3,lt) t(c,T): t(c) Follow-U	Grade 1-stage 2-stage 1-stage 2-stage 2-stage Jp Time Ca	Culati 1 2.00 0.00 0.00 alcula 1	Con 4 L 4.1 2.00 2 0.00 0.00 0.00 4.1 4.1 4.1 Ctions 4 L	7 L 7.5 2.00 2 0.20 0.00 0.70 0.00 1.00 6.8 5.8 7 L	8 T 2.000 0.200 0.000 0.000 1.000	9 R 6.2 2.0 2 0.1 0.0 0.0 0.0 0.0 6.2 6.2 9 R 3.3 1.0	10 L 0 2.00 0 0.20 0 0.00 0 0.00 0 1.00 10 L 0	T 2.00 0.20 0.00 0.00 1.00	R 2.00 0.10 0.00 0.00 0.00 12 R
Critical Movement t(c,base t(c,hv) P(hv) t(c,g) Percent t(3,lt) t(c,T): t(c) Follow-t Movement	Grade 1-stage 2-stage 1-stage 2-stage 2-stage Jp Time Ca	Culati 1 L 2.00 0.00 0.00 alcula 1 L	2.00 4 L 4.1 2.00 2 0.00 0.00 0.00 0.00 4.1 4.1 0.00 4.1 4.1 2.20	7 L 7.5 2.00 2 0.20 0.00 0.70 0.00 1.00 6.8 5.8 7 L 3.50	8 T 2.000 0.200 0.000 1.000 8 T	9 R 6.2 2.0 2 0.1 0.0 0.0 0.0 0.0 6.2 6.2 9 R 3.3	10 L 0 2.000 0 0.20 0 0.00 0 0.00 0 1.00 10 L 0 1.00	T 2.00 0.20 0.00 0.00 1.00	R 2.00 0.10 0.00 0.00 0.00 12 R

0

Worksheet 5-Effect of Upstream Signals

Computation 1	l-Queue	Clearance	Time	at	Upstream	Signal		
					Mov	vement 2	Mov	ement 5
					V(t)	V(l,prot)	V(t)	V(l,prot)

V prog Total Saturation Flow Rate, s (vph) Arrival Type Effective Green, g (sec) Cycle Length, C (sec)

Rp (from Exhibit 16-11) Proportion vehicles arriving on green P g(q1) g(q2) g(q)

Movement 2 Moveme V(t) V(1, prot) V(t) V alpha beta Travel time, t(a) (sec) Smoothing Factor, F Proportion of conflicting flow, f Max platooned flow, V(c,max) Min platooned flow, V(c,min) Duration of blocked period, t(p) Proportion time blocked, p 0.000 0.0 Computation 3-Platoon Event Periods Result () () () () () () () () () ()	(l,prot)
Alpha Deta Cravel time, t(a) (sec) Smoothing Factor, F Proportion of conflicting flow, f Max platooned flow, V(c,max) fin platooned flow, V(c,min) Duration of blocked period, t(p) Proportion time blocked, p Outputation 3-Platoon Event Periods Result Decision D(2) O(2) O(3) O(40m) O(40m) O(5) O(5) Constrained or unconstrained? Proportion mblocked (1) (2) (3) for minor Single-stage	
beta Pravel time, t(a) (sec) Smoothing Factor, F Proportion of conflicting flow, f Max platooned flow, V(c,max) Min platooned flow, V(c,min) Duration of blocked period, t(p) Proportion time blocked, p 0.000 Computation 3-Platoon Event Periods Result p(2) 0.000 p(5) 0.000 p(dom) 0.000 p(subo) Constrained or unconstrained? Proportion (1) (2) (3) for minor Single-stage Two-Stage Process	00
Travel time, t(a) (sec)Smoothing Factor, FProportion of conflicting flow, fMax platooned flow, V(c,max)Min platooned flow, V(c,min)Duration of blocked period, t(p)Proportion time blocked, p0.000Computation 3-Platoon Event PeriodsResultp(2)p(5)p(dom)p(subo)Constrained or unconstrained?Proportionunblocked(1)(2)(3)for minorSingle-stageTwo-Stage Process	00
Smoothing Factor, F Proportion of conflicting flow, f Max platooned flow, V(c,max) Min platooned flow, V(c,min) Duration of blocked period, t(p) Proportion time blocked, p 0.000 Computation 3-Platoon Event Periods Result p(2) 0.000 p(5) 0.000 p(dom) 0.000 p(subo) Constrained or unconstrained? Proportion (1) (2) (3) for minor Single-stage Two-Stage Process	00
Proportion of conflicting flow, f Max platooned flow, V(c,max) Min platooned flow, V(c,min) Duration of blocked period, t(p) Proportion time blocked, p 0.000 0.0 Computation 3-Platoon Event Periods Result p(2) 0.000 p(5) 0.000 p(dom) p(subo) Constrained or unconstrained? Proportion unblocked (1) (2) (3) for minor Single-stage Two-Stage Process	00
Max platooned flow, V(c,max) Min platooned flow, V(c,min) Duration of blocked period, t(p) Proportion time blocked, p 0.000 0.0 Computation 3-Platoon Event Periods Result p(2) 0.000 p(5) 0.000 p(dom) p(subo) Constrained or unconstrained? Proportion unblocked (1) (2) (3) for minor Single-stage Two-Stage Process	00
Min platooned flow, V(c,min) Duration of blocked period, t(p) Proportion time blocked, p 0.000 0.0 Computation 3-Platoon Event Periods Result p(2) 0.000 p(5) 0.000 p(dom) p(subo) Constrained or unconstrained? Proportion unblocked (1) (2) (3) for minor Single-stage Two-Stage Process	00
Duration of blocked period, t(p) Proportion time blocked, p 0.000 0.0 Computation 3-Platoon Event Periods Result p(2) 0.000 p(5) 0.000 p(dom) p(subo) Constrained or unconstrained? Proportion unblocked (1) (2) (3) for minor Single-stage Two-Stage Process	00
Proportion time blocked, p0.0000.0Computation 3-Platoon Event PeriodsResultp(2)0.000p(5)0.000p(dom)0.000p(subo)Constrained or unconstrained?Proportion(1)unblocked(1)for minorSingle-stageTwo-Stage Process	00
p(2) 0.000 p(5) 0.000 p(dom) p(subo) Constrained or unconstrained? Proportion unblocked (1) (2) (3) for minor Single-stage Two-Stage Process	
p(2) 0.000 p(5) 0.000 p(dom) p(subo) Constrained or unconstrained? Proportion unblocked (1) (2) (3) for minor Single-stage Two-Stage Process	
p(5) 0.000 p(dom) p(subo) Constrained or unconstrained? Proportion unblocked (1) (2) (3) for minor Single-stage Two-Stage Process	
p(dom) p(subo) Constrained or unconstrained? Proportion unblocked (1) (2) (3) for minor Single-stage Two-Stage Process	
p(subo) Constrained or unconstrained? Proportion unblocked (1) (2) (3) for minor Single-stage Two-Stage Process	
Constrained or unconstrained? Proportion unblocked (1) (2) (3) for minor Single-stage Two-Stage Process	
Proportion unblocked (1) (2) (3) for minor Single-stage Two-Stage Process	
unblocked (1) (2) (3) for minor Single-stage Two-Stage Process	
for minor Single-stage Two-Stage Process	
movements, p(x) Process Stage I Stage II	
p(1)	
p(4)	
p(7)	
p(8)	
p(9)	
p(10)	
p(11)	
p(12)	
Computation 4 and 5	
Single-Stage Process Movement 1 4 7 8 9 10 11	. 12
Movement 1 4 7 8 9 10 11 L L L T R L T	•
V c,x 327 504 156	
S	
Px V c,u,x	
Cr,x	
C plat,x	
Two-Stage Process 7 8 10	11
7 8 10 Stage1 Stage2 Stage1 Stage2 Stage1 Stage2 Stage	
V(c,x) = 313 + 191	
	<u></u>



C(r,x) C(plat,x)

Step 1: RT from Minor St.	9	12
Conflicting Flows	156	
Potential Capacity	888	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	888	
Probability of Queue free St.	0.94	1.00
Step 2: LT from Major St.	4	1
Conflicting Flows	327	
Potential Capacity	1229	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	1229	
Probability of Queue free St.	1.00	1.00
Maj L-Shared Prob Q free St.		
Step 3: TH from Minor St.	8	11
Conflicting Flows	· · · · · · · · · · · · · · · · · · ·	
Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Conflicting Flows	504	
Potential Capacity	497	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		1.00
Maj. L, Min T Adj. Imp Factor.	.1	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.93
Movement Capacity	495	

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
Part 1 - First Stage		•
Conflicting Flows		
Potential Capacity	661	624
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	661	621
Probability of Queue free St.	1.00	1.00
Part 2 - Second Stage		· · · · · · · · · · · · · · · · · · ·
Conflicting Flows	<i></i>	67.
Potential Capacity	624	. 651
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mymnt	1.00	1.00
Movement Capacity	621	651



Part 3 - Single Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity		
Result for 2 stage process:		
a	0.95	0.95
Y		
Ct		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Step 4: Di from Minor St.	7	10
Part 1 - First Stage		
Conflicting Flows	313	
Potential Capacity	715	675
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mymnt	1.00	1.00
Movement Capacity	715	672
Part 2 - Second Stage		
Conflicting Flows	191	
Potential Capacity	822	862
Pedestrian Impedance Factor	1.00	1.00
-		
Cap. Adj. factor due to Impeding mvmnt	1.00	0.94
Movement Capacity	818	807
Part 3 - Single Stage	·· ···	B AR. M.ARM
Conflicting Flows	504	
Potential Capacity	497	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor	1.00	1.00
Maj. L, Min T Adj. Imp Factor.	1 00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.93
Movement Capacity	495	
Results for Two-stage process:		
a	0.95	0.95
	0.68	0.75
Y C F		
Ct	633	
Worksheet 8-Shared Lane Calculations		
Movement 7	8 9 10	

,	U	2	10		12	
\mathbf{L}	т	R	L	т	R	
136		57				
633		888				
	136	L T 136	136 57	L T R L 136 57	L T R L T 136 57	L T R L T R 136 57

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7	8	9	10	11	12
	${ m L}$	т	R	\mathbf{L}	Т	R
C sep	633		888			
C sep Volume	136		57			
Delay						

Q sep



Q sep +1 round (Qsep +1)

n max		
n max C sh		
SUM C sep		
n		
C act		

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config		L	L		R			
v (vph)		6	136		57			
C(m) (vph)		1229	633		888			
v/c		0.00	0.21		0.06			
95% queue length		0.01	0.81		0.21			
Control Delay		7.9	12.2		9.3			
LOS		А	в		А			
Approach Delay				11.4				
Approach LOS				В				

Worksheet 11-Shared Major LT Impedance and Delay

Movement 2Movement 5p(oj)1.00v(il), Volume for stream 2 or 5v(i2), Volume for stream 3 or 6s(i1), Saturation flow rate for stream 2 or 5s(i2), Saturation flow rate for stream 3 or 6P*(oj)d(M,LT), Delay for stream 1 or 4N, Number of major street through lanesd(rank,1) Delay for stream 2 or 5

2017 Road Analysis



U.S. 19	Adopted Minimum			P.M. Peak-Hour Roadway Traffic Volumes					
	Standard		Background Traffic**		Project Traffic	2017 Total Traffic			
Segment	LOS	Volume (Two-way)*	Volume (Two-way)	LOS	Volume (Two-way)	Volume (Two-way)	LOS		
SR 121 to Project Site	В	2,800	533	А	61	594	А		
Project Site to CR 40	В	2,800	545	А	144	689	А		
SR 121	Adopted	Minimum	P.N	Л. Peak-H	our Roadway T	raffic Volumes			
		ndard	2017 Back Traffic	ground c**	Project Traffic	2017 Total	Traffic		
Segment	LOS	Volume (Two-way)*	Volume (Two-way)	LOS	Volume (Two-way)	Volume (Two-way)	LOS		
U.S. 19 to NW 27th Street	С	770	169	А	53	222	А		
US 41	Adopted Minimum		P.M. Peak-Hour Roadway Traffic Volumes						
	•	ndard	2017 Background Traffic**		Project Traffic	2017 Total	Traffic		
Segment	LOS	Volume (Two-way)*	Volume (Two-way)	LOS	Volume (Two-way)	Volume (Two-way)	LOS		
SE 80th Street/NW 27th Street to CR 328	C	770	474	С	42	516	с		
CR 40	Adopted Minimum		P.M. Peak-Hour Roadway Traffic Volumes						
		ndard	2017 Background Traffic**		Project Traffic	2017 Total	Traffic		
Segment	LOS	Volume (Two-way)*	.Volume (Two-way)	LOS	Volume (Two-way)	Volume (Two-way)	LOS		
U.S. 19 to Heavy Haul Driveway	С	1,070	208	с	8	216	C		

*These volumes were attained from the FDOT 2007 Generalized Level of Service Tables.

**These two-way volumes along segments between counted intersections were estimated based upon the average of the intersection volumes counted along the segment.

APPENDIX F: Turn-Lane Length Requirements Worksheets

Calculations based upon FDOT Guidelines

Intersection:	U.S. 19 & Construction Driveway
Scenario:	Peak Construction, Heavy Haul Route 2
Date of Analysis:	12/17/2008
Analyst:	KHA

GENERAL INFORMATION		
Time of Day:	AM Peak Hour	
Approach:	Northbound	
Traffic Control:	Signalized Intersection	
Geometric Conditions:	Rural Conditions	
Turn Lane Type:	Right-Turn Lane	
Number of Lanes:	1	
Design Speed:	65 Miles per Hour	

SIGNALIZED INPUT PARAMETERS		
Turning Traffic Volume:	700 vph	
Cycle Length:	120 sec	
Peak Factor:	2	

SIGNALIZED TURN LANE CALCULATIONS		
Turning Traffic Volume:	700 vph	
Cycle Length:	120 sec	
Seconds per Hour:	3600 sec	
Cycles Per Hour:	30	
Vehicles per Cycle:	23.3	
Vehicle Length:	25 feet	
Average Vehicle Queue:	582.5 feet	
Peak Factor:	2	
Peak Storage Length:	1165 feet	
Minimum Storage Length:	25 feet	
Number of Lanes:	1	
Required Design Storage per Lane:	1150 feet	
Total Deceleration Distance:	460 feet	
Total Turn Lane Length (incl. Taper):	1610 feet	

TURN LANE CALCULATION R	ESULTS
Design Storage Length:	1150 feet
Total Deceleration Distance:	460 feet
Total Turn Lane Length (incl. Taper):	1610 feet

Calculations based upon FDOT Guidelines

Intersection:	U.S. 19 & Construction Driveway	
Scenario:	Peak Construction, Heavy Haul Route 2	
Date of Analysis:	12/17/2008	
Analyst:	КНА	

GENERAL INFORMATION		
Time of Day:	AM Peak Hour	
Approach:	Southbound	
Traffic Control:	Signalized Intersection	
Geometric Conditions:	Rural Conditions	
Turn Lane Type:	Left-Turn Lane	
Number of Lanes:	2	
Design Speed:	65 Miles per Hour	

SIGNALIZED INPUT PARAMET	TERS
Turning Traffic Volume:	385 vph
Cycle Length:	120 sec
Peak Factor:	2

SIGNALIZED TURN LANE CALCULATIONS		
Turning Traffic Volume:	385 vph	
Cycle Length:	120 sec	
Seconds per Hour:	3600 sec	
Cycles Per Hour:	30	
Vehicles per Cycle:	12.8	
Vehicle Length:	25 feet	
Average Vehicle Queue:	320 feet	
Peak Factor:	2	
Peak Storage Length:	640 feet	
Minimum Storage Length:	50 feet	
Number of Lanes:	2	
Required Design Storage per Lane:	325 feet	
Total Deceleration Distance:	460 feet	
Total Turn Lane Length (incl. Taper):	785 feet	

TURN LANE CALCULATION RESULTS		
Design Storage Length:	325 feet	
Total Deceleration Distance:	460 feet	
Total Turn Lane Length (incl. Taper):	785 feet	

Calculations based upon FDOT Guidelines

Intersection:	U.S. 19 & Operations Driveway	
Scenario:	Peak Operations	
Date of Analysis:	12/17/2008	
Analyst:	KHA	

GENERAL INFORMATION		
Time of Day:	AM Peak Hour	
Approach:	Northbound	
Traffic Control:	Unsignalized Intersection	
Geometric Conditions:	Rural Conditions	
Turn Lane Type:	Right-Turn Lane	
Number of Lanes:	1	
Design Speed:	65 Miles per Hour	

UNSIGNALIZED INPUT PARAMETERS		
Turning Traffic Volume:	148 vph	
Peak Cycle Factor:	30	

UNSIGNALIZED TURN LANE CALCULATIONS		
Turning Traffic Volume:	148 vph	
Peak Cycle Factor:	30	
Expected Vehicle Queue:	N/A	
Vehicle Length:	25 feet	
Peak Storage Length:	N/A feet	
Minimum Storage Length:	0 feet	
Number of Lanes:	1	
Required Design Storage per Lane:	0 feet	
Total Deceleration Distance:	460 feet	
Total Turn Lane Length:	460 feet	

TURN LANE CALCULATION RESULTS		
Design Storage Length:	0 feet	
Total Deceleration Distance:	460 feet	
Total Turn Lane Length (incl. Taper):	460 feet	

Calculations based upon FDOT Guidelines

Intersection:	U.S. 19 & Operations Driveway
Scenario:	Peak Operations
Date of Analysis:	12/17/2008
Analyst:	KHA

GENERAL INFORMATION		
Time of Day:	AM Peak Hour	
Approach:	Northbound	
Traffic Control:	Unsignalized Intersection	
Geometric Conditions:	Rural Conditions	
Turn Lane Type:	Left-Turn Lane	
Number of Lanes:	1	
Design Speed:	65 Miles per Hour	

UNSIGNALIZED INPUT PARAMETERS		
Turning Traffic Volume:	64 vph	
Peak Cycle Factor:	30	
	· · · · · · · · · · · · · · · · · · ·	

UNSIGNALIZED TURN LANE CALCULATIONS		
Turning Traffic Volume:	64	vph
Peak Cycle Factor:	30	
Expected Vehicle Queue:	2.1	
Vehicle Length:	25	feet
Peak Storage Length:	52.5	feet
Minimum Storage Length:	50	feet
Number of Lanes:	1	
Required Design Storage per Lane;	50	feet
Total Deceleration Distance:	460	feet
Total Turn Lane Length:	510	feet

TURN LANE CALCULATION RE	SULTS
Design Storage Length:	50 feet
Total Deceleration Distance:	460 feet
Total Turn Lane Length (incl. Taper):	510 feet

Calculations based upon FDOT Guidelines

Intersection:	CR 40 & Heavy Haul Driveway	
Scenario:	Peak Construction, Heavy Haul Route 1 & 2	
Date of Analysis:	12/17/2008	
Analyst:	KHA	

GENERAL INFORMATION		
Time of Day:	PM Peak Hour	
Approach:	Eastbound	
Traffic Control:	Unsignalized Intersection	
Geometric Conditions:	Rural Conditions	
Turn Lane Type:	Right-Turn Lane	
Number of Lanes:	1	
Design Speed:	60 Miles per Hour	

UNSIGNALIZED INPUT PARAMETERS		
Turning Traffic Volume:	15 vph	
Peak Cycle Factor:	30	
	,	

UNSIGNALIZED TURN LANE CALCULATIONS		
Turning Traffic Volume:	15 vph	
Peak Cycle Factor:	30	
Expected Vehicle Queue:	N/A	
Vehicle Length:	25 feet	
Peak Storage Length:	N/A feet	
Minimum Storage Length:	0 feet	
Number of Lanes:	1	
Required Design Storage per Lane:	0 feet	
Total Deceleration Distance:	405 feet	
Total Turn Lane Length:	405 feet	

TURN LANE CALCULATION RES	SULTS
Design Storage Length:	0 feet
Total Deceleration Distance:	405 feet
Total Turn Lane Length (incl. Taper):	405 feet

Calculations based upon FDOT Guidelines

Intersection:	U.S. 19 & CR 40
Scenario:	Peak Construction, Heavy Haul Route 1 & 2
Date of Analysis:	12/17/2008
Analyst:	KHA

GENERAL INFORMATION	
Time of Day:	PM Peak Hour
Approach:	Southbound
Traffic Control:	Signalized Intersection
Geometric Conditions:	Rural Conditions
Turn Lane Type:	Left-Turn Lane
Number of Lanes:	1
Design Speed:	55 Miles per Hour

SIGNALIZED INPUT PARAME	TERS
Turning Traffic Volume:	124 vph
Cycle Length:	60 sec
Peak Factor:	2

SIGNALIZED TURN LANE CALC	JLATIONS
Turning Traffic Volume:	124 vph
Cycle Length:	60 sec
Seconds per Hour:	3600 sec
Cycles Per Hour:	60
Vehicles per Cycle:	2.1
Vehicle Length:	25 feet
Average Vehicle Queue:	52.5 feet
Peak Factor:	2
Peak Storage Length:	105 feet
Minimum Storage Length:	50 feet
Number of Lanes:	1
Required Design Storage per Lane:	100 feet
Total Deceleration Distance:	350 feet
Total Turn Lane Length (incl. Taper):	450 feet

TURN LANE CALCULATION R	ESULTS
Design Storage Length:	100 feet
Total Deceleration Distance:	350 feet
Total Turn Lane Length (incl. Taper):	450 feet

Calculations based upon FDOT Guidelines

Intersection:	U.S. 19 & CR 40
Scenario: Peak Construction, Heavy Haul Route 2	
Date of Analysis: 12/17/2008	
Analyst:	KHA

GENERAL INFORMATION		
Time of Day:	PM Peak Hour	
Approach:	Westbound	
Traffic Control:	Signalized Intersection	
Geometric Conditions:	Rural Conditions	
Turn Lane Type:	Right-Turn Lane	
Number of Lanes:	1	
Design Speed:	40 Miles per Hour	

SIGNALIZED INPUT PARAMETERS		
Turning Traffic Volume:	58 vph	
Cycle Length:	60 sec	
Peak Factor:	2	

SIGNALIZED TURN LANE CALCULATIONS		
Turning Traffic Volume:	58 vph	
Cycle Length:	60 sec	
Seconds per Hour:	3600 sec	
Cycles Per Hour:	60	
Vehicles per Cycle:	1	
Vehicle Length:	25 feet	
Average Vehicle Queue:	25 feet	
Peak Factor:	2	
Peak Storage Length:	50 feet	
Minimum Storage Length:	25 feet	
Number of Lanes:	1	
Required Design Storage per Lane:	50 feet	
Total Deceleration Distance:	290 feet	
Total Turn Lane Length (incl. Taper):	340 feet	

TURN LANE CALCULATION RESULTS		
Design Storage Length:	50 feet	
Total Deceleration Distance:	290 feet	
Total Turn Lane Length (incl. Taper):	340 feet	