Traffic Impact Statement

Wawa – Phase 1
Site Development Plan (SDP)

Collier County, FL
08/01/2016

Prepared for:

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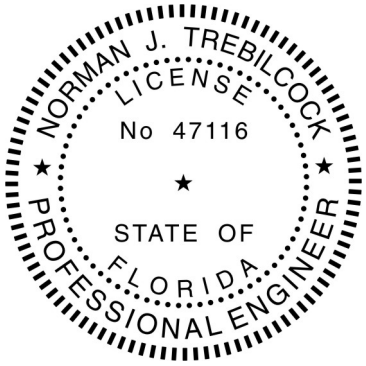
Statement of Certification

I certify that this Traffic Impact Statement has been prepared by me or under my immediate supervision and that I have experience and training in the field of Traffic and Transportation Engineering.



This item has been electronically signed and sealed by Norman J. Trebilcock, PE using a *SHA-1* authentication code.

Printed copies of this document are not considered signed and sealed, and the *SHA-1* authentication code must be verified on any electronic copies.

Norman J. Trebilcock P.E. 47116

Digitally signed by Norman J. Trebilcock P.E. 47116
DN: cn=Norman J. Trebilcock P.E. 47116, o=Trebilcock Consulting Solutions, PA, ou=Norman J. trebilcock, email=ntrebilcock@trebilcock.biz, c=US
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APPENDICES

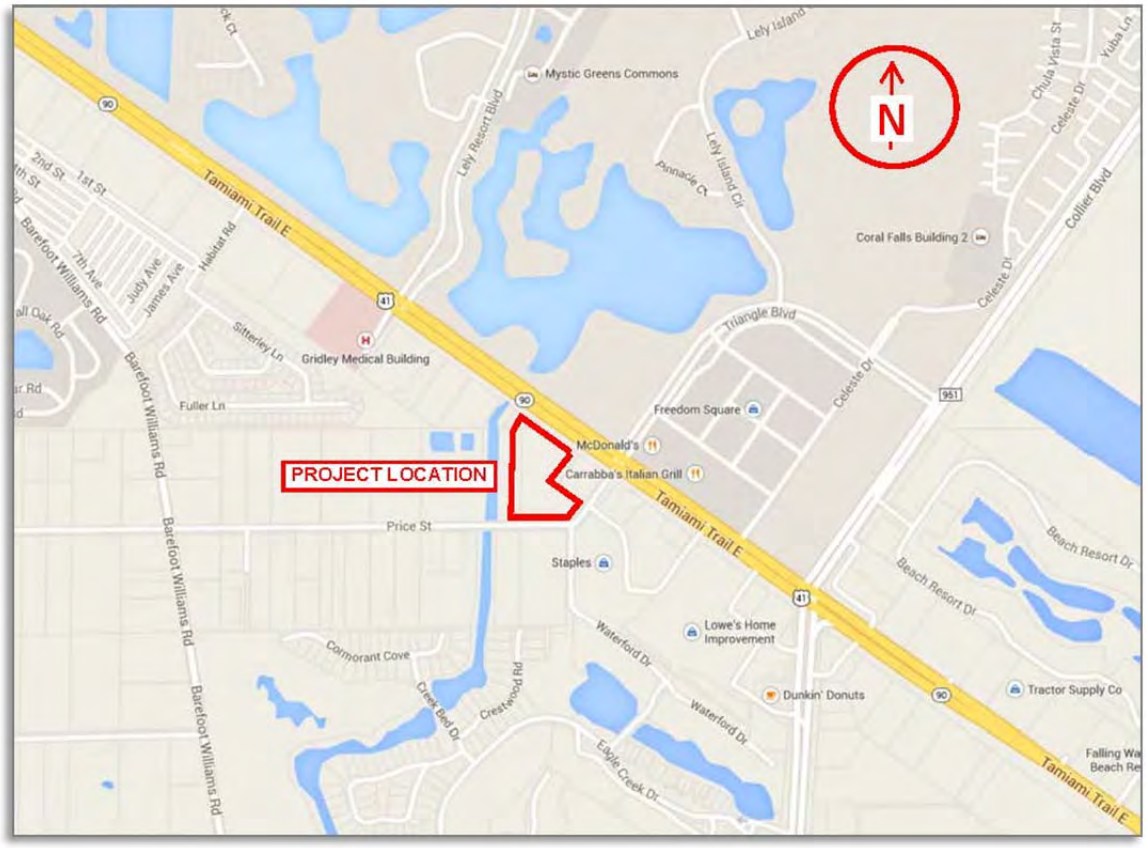
Project Description

The Wawa project is generally located in the southwest corner of US 41 (Tamiami Trail – SR 90) and Price Street intersection, in southeast Naples.

The subject site is currently vacant and is located in Section 4, Township 51S, Range 26E, Collier County, Florida.

Refer to **Fig. 1 – Project Location Map**, which follows, and **Appendix A: Project Master Site Plan**.

Fig. 1 – Project Location Map



The subject site is currently a vacant 6.56 acre ± parcel. The site is currently zoned approved for the development of Wawa convenience store and gasoline pumps. Pending zoning approval, a future development phase may allow for an additional 27,500 sf strip shopping center.

The Wawa Site Development Plan (SDP) application proposes to develop a 6,119 sf convenience market with 16 gasoline pumps – depicted as Phase 1 in this Traffic Impact Statement (TIS).

In addition, the project future overall build-out Phase 2 (pending zoning approval) is considered to illustrate project related traffic operational analysis.

A methodology meeting was held with the Florida Department of Transportation (FDOT) and Collier County Transportation Planning staff on March 17, 2015 (reference **Appendix B: Initial Meeting Checklist**).

For purposes of this evaluation, the project build-out year is assumed to be consistent with the Collier County 2017 planning horizon.

The project provides a highest and best use scenario with respect to the project's proposed trip generation. A trip generation comparison is provided for the Land Use Codes (LUC) 853 – Convenience market with gasoline pumps, and LUC 945 – Gasoline/ Service Station with Convenience Market, of the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition. For the purposes of this report, the conservative estimate of the two trip generations is used. The development program is illustrated in **Table 1.**

Table 1
Development Program

Development	Land Use	ITE Land Use Code	Total Size	Planning Horizon Year
Phase 1 – SDP Application				
Gas Station	Convenience Market with Gasoline Pumps	853	6,119 sf	2017
Phase 2 – Potential Project Build-out*				
Gas Station	Convenience Market with Gasoline Pumps	853	6,119 sf	2017
Strip Shopping Center	Shopping Center	820	27,500 sf	2017

Note(s): *Pending zoning approval.

Connections to the subject site are proposed to be provided as follows: existing right-in/right-out access on eastbound Tamiami Trail East and one new full movement access on southbound Price Street.

Trip Generation

The project's site trip generation is based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition. The software program OTISS (Online Traffic Impact Study Software), most current version is used to create the trip generation for the project. The ITE rates and equations are used for the trip generation calculations, as applicable. The ITE – OTISS

trip generation calculation worksheets are provided in **Appendix C: ITE Trip Generation Calculations**.

A trip generation comparison is provided for the LUC 853 – based on the store gross floor area, and LUC 945 – based on the fueling position. The LUC 853 – 6,119 sf GFA is the conservative estimate of the two trip generations and it is used for the purposes of this report.

The **internal capture** accounts for a reduction in external traffic because of the interaction between the multiple land uses in a site. Following county's staff recommendations, no internal capture is considered for this site.

The **pass-by trips** account for traffic that is already on the external roadway network and stops at the project on the way to a primary trip destination. It should be noted that the driveway volumes are not reduced as a result of the pass-by reduction, only the traffic added to the surrounding streets and intersections. As such, pass-by trips are not deducted for operational turn lane analysis (all external traffic is accounted for).

Consistent with Collier County TIS Guidelines and Procedures, gasoline/service stations with convenience market are allowed maximum pass-by traffic of 50% of the project's external trip generation potential. In addition, the county TIS Guidelines recommends that shopping center pass-by rates should not exceed 25% for the peak hour and the daily capture rates to be assumed 10% lower than the peak hour capture rate.

This analysis calculates LUC 853 pass-by daily rates at 40% and AM and PM peak hour rates at 50%.

Shopping center daily pass-by trips are calculated at 15% of the gross traffic with AM and PM peak hour at 25% of the gross trips.

For the purpose of this TIS, the surrounding roadway network link concurrency is analyzed based on Wawa SDP project – Phase 1 estimated PM peak hour traffic (Total external net traffic) as illustrated in **Table 2A**.

Table 2A
Trip Generation (Phase 1 - Proposed Conditions) – Average Weekday

Wawa SDP – Phase 1 Development		24 Hour Two-Way Volume	AM Peak Hour			PM Peak Hour		
Land Use	**Size**		**Enter**	**Exit**	**Total**	**Enter**	**Exit**	**Total**
Convenience Market with Gasoline Pumps	6,119 sf	**5,175**	125	125	**250**	156	156	**312**
Total pass-by Traffic		**2,070**	62	63	**125**	78	78	**156**
Total External (Net) Traffic		**3,105**	63	62	**125**	78	78	**156**

The site access turn lane analysis is calculated based on the potential future overall build-out – Phase 2 total generated traffic during the weekday AM and PM peak hour, as illustrated in **Table 2B**. Based on the trip generation results, the generated PM peak hour traffic is more intense than the AM peak hour traffic (both egress and ingress traffic). As such, the PM peak hour traffic is used in the operational analysis (Total External Traffic).

Table 2B
Trip Generation (Phase 2 - Future Build-out Conditions) – Average Weekday

Wawa SDP – Phase 2 Development		24 Hour Two-Way Volume	AM Peak Hour			PM Peak Hour		
Land Use	**Size**		**Enter**	**Exit**	**Total**	**Enter**	**Exit**	**Total**
Convenience Market with Gasoline Pumps	6,119 sf	**5,175**	125	125	**250**	156	156	**312**
Shopping Center	27,500sf	**2,934**	44	27	**71**	121	131	**252**
Total Traffic		**8,109**	169	152	**321**	277	287	**564**
Total pass-by Traffic		**2,510**	73	70	**143**	108	111	**219**
Total External (Net) Traffic		**5,599**	96	82	**178**	169	176	**345**

Trip Distribution and Assignment

Projected traffic generated by the Wawa Phase 1 development is assigned to the adjacent roadways using the knowledge of the area and as coordinated with Collier County Transportation Planning staff.

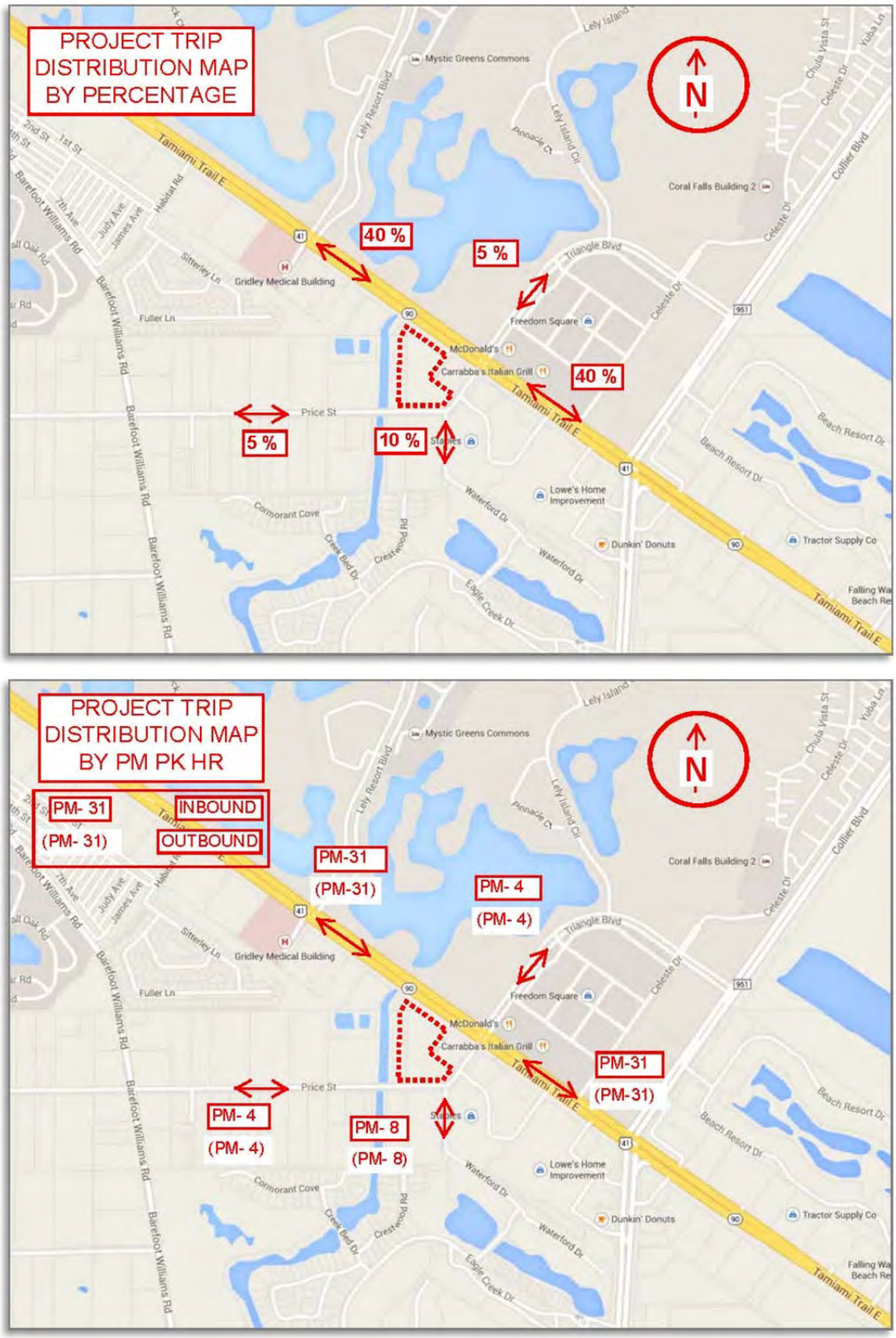
Based on the estimated Phase 1 – PM peak hour total external net traffic, the assignment of proposed site-generated trip distribution is shown in **Table 3, Project Traffic Distribution for PM Peak Hour**, and is graphically depicted on **Fig. 2 – Project Distribution by Percentage and by PM Peak Hour**.

Table 3
Project Traffic Distribution for PM Peak Hour

Roadway Link	CC AUIR Link ID #	Roadway Link Location	Distribution of Project Traffic	PM Peak Hr Project Traffic Vol.*	
				Enter	Exit
Tamiami Trail East (US 41)	93.0	Rattlesnake Hammock Rd to Triangle Blvd	40%	**EB - 31**	WB - 31
Tamiami Trail East (US 41)	94.0	Triangle Blvd to Collier Blvd	40%	WB - 31	**EB - 31**
Triangle Blvd**	N/A	North of US 41	5%	SB - 4	NB – 4
Staples Plaza**	N/A	East of Price St	10%	WB – 8	EB - 8
Price Street**	N/A	South of US 41	5%	EB - 4	WB - 4

Note(s): *Peak hour, peak direction traffic volumes are **underlined** and **bold** to be used in Roadway Link Level of Service calculations.
**Not a Collier County monitored roadway.

Fig. 2 – Project Distribution by Percentage and by PM Peak Hour



Background Traffic

Average background traffic growth rates were estimated for the segments of the roadway network in the study area using the Collier County Transportation Planning Staff guidance of a minimum 2% growth rate, or the historical growth rate from annual traffic counts (estimated from 2008 through 2015), whichever is greater. Another way to derive the background traffic is to use the 2015 Annual Update and Inventory Report (AUIR) volume plus the trip bank volume.

Table 4, Background Traffic without Project illustrates the application of projected growth rates to generate the projected background (without project) peak hour peak direction traffic volume for the future horizon year 2017.

Table 4
Background Traffic without Project (2015 - 2017)

Roadway Link	CC AUIR Link ID #	Roadway Link Location	2015 AUIR Pk Hr, Pk Dir Background Traffic Volume (trips/hr)	Projected Traffic Annual Growth Rate (%/yr)*	Growth Factor	2017 Projected Pk Hr, Peak Dir Background Traffic Volume w/out Project (trips/hr) Growth Factor**	Trip Bank	2017 Projected Pk Hr, Peak Dir Background Traffic Volume w/out Project (trips/hr) Trip Bank***
Tamiami Trail East (US 41)	93.0	Rattlesnake Hammock Rd to Triangle Blvd	1,910 (EB)	2.0%	1.0404	1,988	359	**2,269**
Tamiami Trail East (US 41)	94.0	Triangle Blvd to Collier Blvd	1,490 (EB)	2.0%	1.0404	1,551	211	**1,701**

Note(s): *Annual Growth Rate – estimated from 2008 - 2015 or 2% minimum.
**Growth Factor = (1+Annual Growth Rate) ^2. 2017 Projected Volume= 2015 AUIR Volume x Growth Factor.
***2017 Projected Volume= 2015 AUIR Volume + Trip Bank.
The projected 2017 Peak Hour – Peak Direction Background Traffic is the greater of the Growth Factor or Trip Bank calculation, which is **underlined** and **bold** as applicable.

Existing and Future Roadway Network

The existing roadway conditions are extracted from the 2015 Annual Update and Inventory Report (AUIR) and the project roadway conditions are based on the current Collier County 5-Year Work Program. Roadway improvements that are currently under construction or are scheduled to be constructed within the five year Transportation Improvement Plan (TIP) or Capital Improvement Program (CIP) are considered to be committed improvements. As no such improvements were identified in the Collier County 2015 AUIR, the evaluated roadways are anticipated to remain as such through project build-out. The existing and future roadway conditions are illustrated in **Table 5**.

Table 5
Existing and Future Roadway Conditions

Roadway Link	CC AUIR Link ID #	Roadway Link Location	Exist Roadway	Min. Standard LOS	Exist Peak Dir, Peak Hr Capacity Volume	Future Project Build out Roadway
Tamiami Trail East (US 41)	93.0	Rattlesnake Hammock Rd to Triangle Blvd	6D	E	3,000 (EB)	6D
Tamiami Trail East (US 41)	94.0	Triangle Blvd to Collier Blvd	6D	E	3,000 (EB)	6D

Note(s): 2U = 2-lane undivided roadway.
4D, 6D, 8D =4-lane, 6-lane, 8-lane divided roadway, respectively.
LOS = Level of Service.

Project Impacts to Area Roadway Network Link Analysis

The Collier County Transportation Planning Services developed Level of Service (LOS) volumes for the roadway links impacted by the project, which were evaluated to determine the project impacts to the area roadway network for future conditions (planning horizon year 2017). The Collier County Transportation Planning Services guidelines have determined that a project will be considered to have a significant and adverse impact if **both** the percentage volume capacity exceeds 2% of the capacity for the link directly accessed by the project and for the link adjacent to the link directly accessed by the project; 3% for other subsequent links **and** if the roadway is projected to operate below the adopted LOS standard.

Based on these criteria, this project does not create any significant and adverse impacts to the area roadway network. None of the analyzed links are projected to operate below the adopted LOS standard with or without the project at 2017 future conditions.

Table 6, Roadway Link Level of Service illustrates the LOS impacts of the project on the roadway network closest to the project.

Table 6
Roadway Link Level of Service (LOS) – With Project in the Year 2017

Roadway Link	CC AUIR Link ID #	Roadway Link Location	2015 Peak Dir, Peak Hr Capacity Volume	Roadway Link, Peak Dir, Peak Hr (Project Vol Added)*	2017 Peak Dir, Peak Hr Volume w/Project **	% Volume Capacity Impact By Project	Min LOS exceeded without Project? Yes/No	Min LOS exceeded with Project? Yes/No
Tamiami Trail East (US 41)	93.0	Rattlesnake Hammock Rd to Project Entrance	3,000 (EB)	**EB-31**	**2,300**	1.03%	No	No
Tamiami Trail East (US 41)	94.0	Project Entrance to Collier Blvd	3,000 (EB)	**EB-31**	**1,732**	1.03%	No	No

Note(s): *Refer to **Table 3** from this report.
2017 Projected Volume= 2017 background (refer to **Table 4) + Project Volume added.

Site Access and Intersection Analysis

Connection to the subject site are proposed to be provided as follows: existing right-in/right-out access on eastbound Tamiami Trail East and one proposed new full movement access on southbound Price Street. For more details refer to **Appendix A: Project Master Site Plan.**

The site access turn lane analysis is calculated based on the potential future overall build-out – Phase 2 traffic during the weekday AM and PM peak hour (as illustrated in **Table 2B)**. Based on the trip generation results, the PM peak hour traffic is more intense (both inbound and outbound traffic) than AM peak hour. As such, the total generated PM peak hour traffic (External – Net New and Pass-By) is used in the operational analysis.

US 41 (SR 90 – Tamiami Trail East) is a six-lane southeast-northwest urban divided arterial under the Florida Department of Transportation (FDOT) jurisdiction and has a posted legal speed of 45 mph in the vicinity of project.

Price Street is currently an undivided two-lane public local roadway, southwest of Tamiami Trail East and has a posted legal speed of 30 mph in the vicinity of the project.

The estimated project trips at driveway locations are illustrated in **Appendix D: Turning Movements Exhibits.**

Project Access – Eastbound Tamiami Trail East (US 41)

The existing eastbound right-turn lane servicing the project is approximately 360ft long.

Based on the posted speed limit of 55 mph on US 41 in the vicinity of project, the right-turning threshold volume for warranting a right-turn lane is 80-125vph, according to the FDOT Driveway Information Guide. The project is expected to accommodate 116 vph right turning movements during PM peak hour, which is between the 80 to 125 vph threshold values. As such, a dedicated eastbound-right turn lane is warranted at this location.

Based on FDOT Design Standard, Index# 301 – design speed of 55 mph, the minimum turn lane length is 350ft (which includes a 50ft taper) plus required queue. As right-turn lanes are more efficient than left turn lanes, required turn lane storage length is determined consistent with the number of turning vehicles likely to arrive in an average one-minute period within the peak hour. In addition, based on FDOT Plans Preparation Manual (PPM), Volume 1 – Chapter 2.13.2 recommendation, storage space for at least two cars should be provided.

The eastbound right-turn lane should be 400 ft long (350ft deceleration lane with taper and 50ft of storage) to accommodate site projected traffic. Therefore, the existing right-turn lane should be extended 40ft (for a total of 400ft) to accommodate proposed estimated traffic.

Project Access – Southbound Price Street

The project access on Price Street is evaluated for turn lane warrants based on the Collier County Construction Standards Handbook: (a) two-lane roadways – 40vph for right-turn lane/20vph for left-turn lane; (b) multi-lane divided roadways – right turn lanes shall always be provided; (c) when new median openings are permitted, they shall always include left-turn lanes.

The project is expected to generate 135vph right turning movements during PM peak hour which is above the 40vph threshold value. As such, a dedicated southbound-right turn lane is warranted at this location.

Based on a posted speed of 30 mph and the proximity to existing intersection with US 41, Price Street turn lanes are considered satisfactory if, at the minimum, the stacking distance is adequate.

The proposed right-turn lane is 130ft long. In addition, the project proposes a 100ft driveway "throat" measured from the back of the crosswalk. The proposed storage right-turn lane is considered adequate based on the following observations: (1) ROW constraints in the vicinity of Price Street access location; (2) lower approach speeds are expected due to proximity of the US 41 and Price Street intersection; (3) additional 4 vehicle stacking that may be provided by project drive; (4) there is sufficient sight distance to allow the driver adequate time to observe the upcoming situation, make the proper decision and take the appropriate action in a normal manner.

US 41 and Price Street – Intersection Analysis

In order to determine the traffic conditions in the vicinity of the subject site, PM peak hour turning movement counts were performed at the intersection on April 15, 2015. A summary of the intersection turning movement counts is provided in **Appendix E: Intersection Turning Movements Counts**. Traffic volumes were adjusted for peak season conditions using the appropriate peak season correction factor (as illustrated in **Appendix F: FDOT 2014 Peak Season Factor Category Report – Excerpt**).

The existing intersection lane configuration is illustrated in **Fig. 3**.

Fig. 3 – Intersection – Existing Conditions

The existing signal timing (Programmed EPAC Data) was provided by Collier County Transportation Staff, as illustrated in **Appendix G: Intersection Signal EPAC Data.**

Intersection analysis is completed using the most recent version of Highway Capacity Software (HCS 2010) which emulates Highway Capacity Manual (HCM 2010). The results of the HCS analysis are included in **Appendix H: Intersection HCS Printouts.**

The HCS 2010 percent heavy vehicle is determined as half of FDOT T24 (annual 24-hour percentage of trucks), which is illustrated in FDOT Florida Traffic Online. A 2% heavy vehicle factor is determined for all movements on US 41 approaches.

Level of Service

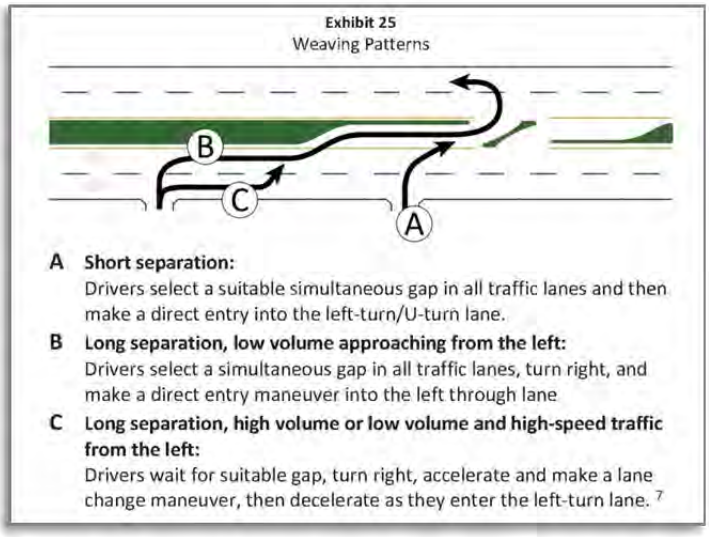
The minimum Level of Service (LOS) standard for US 41 in the vicinity of project is "E" as reflected in **Table 5** of this report. The HCS analysis results show that the intersection is projected to exhibit a satisfactory LOS "D" for the 2017 background traffic PM peak hour conditions with build-out project traffic.

Site Access – EB US 41 – Weave Distance

Weave distance is the distance from a driveway to a nearby intersection where a driver exits a driveway, merges into the nearest lane and then "weaves" across lanes, one at a time, in order to turn at an intersection on the opposite side of the roadway.

Based on FDOT Median Handbook, weaving patterns with a driveway close to median opening are illustrated in **Fig. 4**.

Fig. 4 – Right Turns Weave Patterns



Based on the HCS analysis results – future 2017 background conditions without project traffic, the US 41 eastbound approach exhibits the following queue-storage distances: RT lane – 25ft (1 veh), THRU – 375ft (15 veh), and LT – 275ft (11 veh).

The project driveway is located 425ft away from the intersection (measured from the STOP bar location). As such, the project driveway location is consistent with a short separation weaving pattern – FDOT Type A.

Intersection Turn Lane Analysis

US 41 – Based on FDOT Design Standard, Index# 301, design speed of 45 mph, the minimum turn lane length is 185ft (which includes a 50ft taper) plus required queue.

Based on the PPM – Vol. 1 – Chapter 7.4.7 suggestion, right turn storage lanes should be considered when right turn volume exceeds 300vph (as right turns are made more efficiently than left turns).

Based on the HCS analysis results (refer to **Appendix H**), no Level of Service deficiencies are shown at US 41 and Price Street intersection impacted by the proposed development.

In accordance with the maximum 95th percentile queue length from the HCS intersection analysis (refer to **Appendix H**), the required minimum length are reported in **Table 7**.

Proposed intersection improvements are illustrated in **Appendix I: Proposed Intersection Improvements**. The existing 335 ft EB left turn is proposed to be extended 175 ft (for a total of 510 ft) and the existing 360 ft WB left turn is proposed to be extended 25 ft (for a total of 385 ft). In addition minor striping modification for Price Street northbound leg and intersection signal timing adjustments are proposed.

As illustrated in **Table 7**, the proposed US 41 eastbound and westbound left-turn lanes are adequate to accommodate projected future traffic.

Table 7
Intersection – Turn Lane Calculations

Turn Lanes	Existing Length (ft)	2017 Background Queue Storage Length	2017 Background w/Project Traffic Queue Storage Length	2017 Background w/Project Traffic Queue Storage Length - Signal Improvements	Deceleration Distance	Required Minimum Length 2017 Background w/Project Traffic Queue Storage Length With Signal Improvements
US 41 EB – LT	335	275	350	275	185	460
US 41 EB - RT	425	25	25	25	185	210
US 41 WB - LT	360	50	250	200	185	385
Price St. NB - LT	200	200	250	200	N/A*	200
Price St. NB - RT	200	125	175	150	N/A*	150

Note(s): *provide for stacking only.

Another method to calculate left-turn storage length at signalized intersections is to use a formula from the Plans Preparation Manual Volume 1, Chapter 7.4.7 Intersection Design – Lane

Configuration. The formula, Q = (2.0)(DHV)(25)/N, where Q = design length for left turn storage in feet, DHV = left turn volume during design peak hour, in VPH and N = number of cycles per hour for peak hour, where N = 30 is used as a default.

For **US-41 eastbound**, a posted speed limit of 45 mph and a DHV of 228vph, the proposed left - turn lane length is 565ft (185ft taper and deceleration, 380ft storage). Consistent with the PPM formula, the proposed turn lane is sufficient to accommodate proposed traffic.

US-41 westbound, with a posted speed limit of 45 mph and a DHV of 134vph, the minimum left-turn lane length is 410ft (185ft taper and deceleration, 225ft storage). Proposed left-turn lane is 410 feet.

Improvement Analysis

Based on the link analysis and trip distribution, the proposed project is not a significant and adverse traffic generator for the roadway network at this location. There is adequate and sufficient roadway capacity to accommodate the proposed development generated trips without adversely affecting adjacent roadway network level of service.

Based on the Collier County Construction Standards Handbook criteria, a dedicated southbound-right turn lane is warranted at Price Street site access location. Consistent with the observations illustrated in this report, the proposed storage right-turn lane is adequate to accommodate projected traffic.

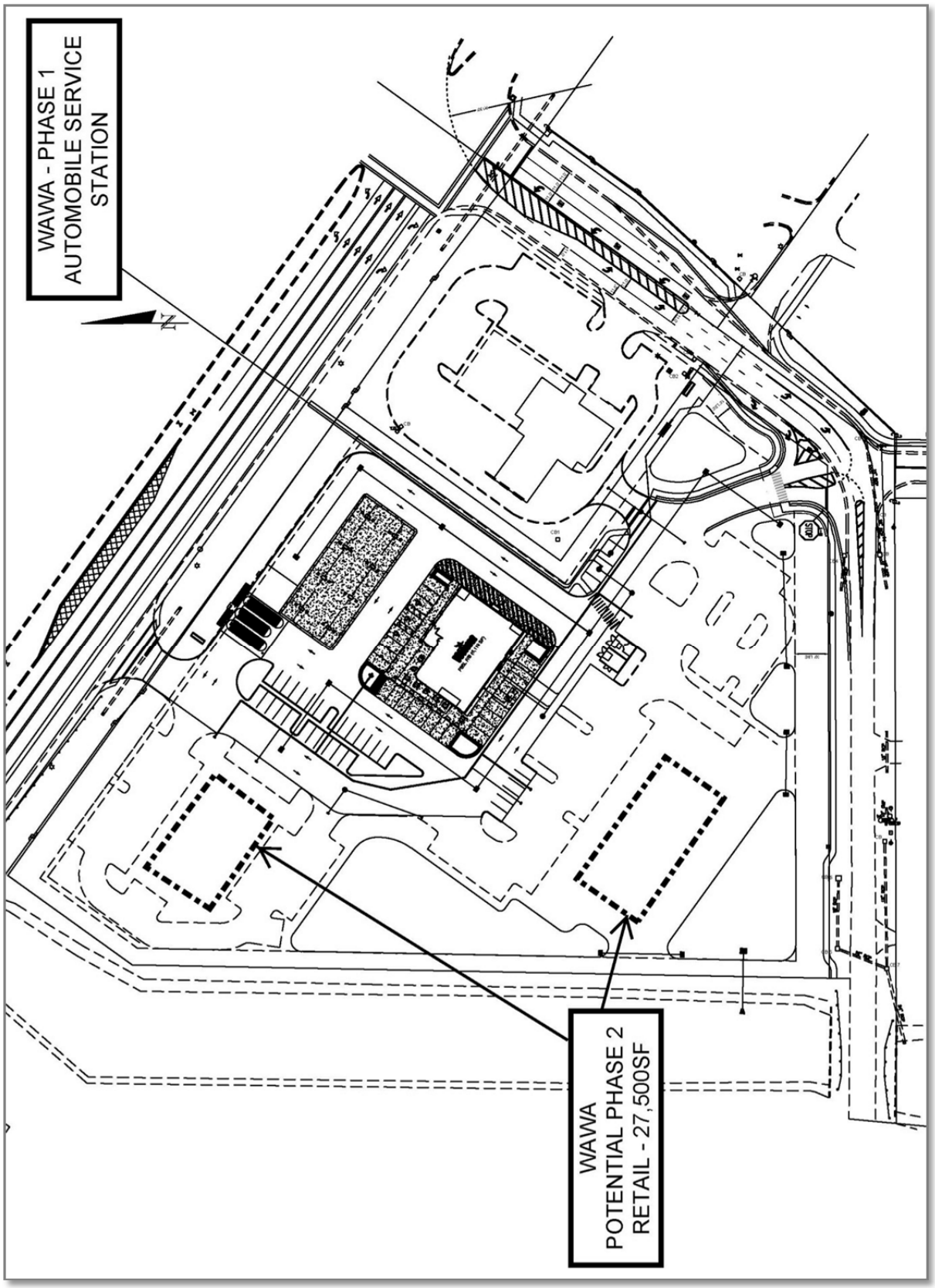
Based on the results of the HCS Intersection analysis, the proposed US 41 eastbound and westbound left-turn lanes are adequate to accommodate future traffic conditions. Signal timing adjustments and minor striping improvements on Price Street are proposed to improve intersection vehicle storage and circulation.

Mitigation of Impact

The developer proposes to pay the appropriate Collier County Road Impact Fee as building permits are issued for the project.

Appendix A: Project Master Site Plan

(1 Sheet)


WAWA - PHASE 1
AUTOMOBILE SERVICE
STATION
N
WAWA
POTENTIAL PHASE 2
RETAIL - 27,500SF

Appendix B: Initial Meeting Checklist (Methodology Meeting)

(6 Sheets)

INITIAL MEETING CHECKLIST

Suggestion: Use this Appendix as a worksheet to ensure that no important elements are overlooked. Cross out the items that do not apply, or N/A (not applicable).

Date: March 17, 2015 Time: N/A

Location: 2800 N. Horseshoe Drive

People Attending:
Name, Organization, and Telephone Numbers

1) Stephen Baluch, Collier County Growth Management Division
2) John Podczerwinsky, Collier County Growth Management Division
3) ~~Jeff Nunner, Nunner LLC~~
4) Norman Trebilcock, TCS
5) Ciprian Malaescu, TCS
6) MARK CLARK FDOT

Study Preparer:
Preparer's Name and Title: Norman Trebilcock, AICP, PE
Organization: Trebilcock Consulting Solutions, PA
Address & Telephone Number: 1205 Piper Boulevard, Suite 202, Naples, Fl. 34110; ph 239-566-9551

Reviewer(s):
Reviewer's Name & Title: Stephen Baluch, PE
Collier County Transportation Planning Department
Organization & Telephone Number: 239-252-2361

Applicant:
Applicant's Name: Waldrop Engineering
Address: 28100 Bonita Grande Drive, Bonita Springs, FL 34135
Telephone Number: 239-405-7777

Proposed Development:
Name: Wawa – Site Development Plan (SDP)
Location: on the southwest corner of US 41 (SR 90) and Price Street (refer to **Fig.1**): project address – 100 Price Street.
Land Use Type: Gasoline/ Service Station with Convenience Market
ITE Code #: LUC 945
Description: Proposed 16 pump gas station. The project site is currently vacant.
Zoning
Existing: current zoning C-4
Comprehensive plan recommendation: No change

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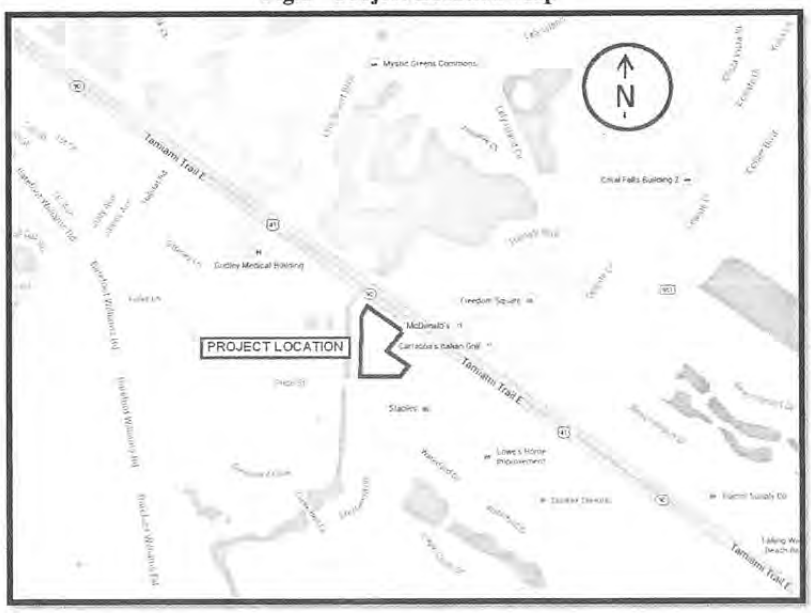
Requested: to allow for the SDP approval

Fig.1 – Project Location Map



Findings of the Preliminary Study:
Study type: Since estimated project new traffic volume is above 100 AM or PM peak hour trips, this study qualifies for a Major TIS – significant roadway and/or operational impacts and work within the county right-of-way. The TIS will include AM-PM peak hour trip generation, traffic distribution and assignments, significance test, roadway link analysis and site access points turn lane analysis.
ITE recommendations for pass-by trips are as follows: Daily – N/A; AM – 62%; PM – 56%. The TIS shall be consistent with Collier County TIS Guidelines and Procedures. Proposed pass-by rates are as follows: Daily – 40% (10% lower than the peak hour capture rate), AM – 50%; PM – 50%.
Roadway concurrency analysis – weekday Total non-pass-by PM Pk Hr trip generation.
Operational Site Access Analysis – weekday Total external AM-PM Pk Hr

Study Type: (if not net increase, operational study)

Small Scale TIS ☐ Minor TIS ☐

Major TIS ☒

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Study Area:
Boundaries: north – US 41 (SR 90), east – Price Street
Additional intersections to be analyzed: N/A
Build Out Year: 2016
Planning Horizon Year: 2017
Analysis Time Period(s): Concurrency – Weekday PM Pk Hr; Operational – Weekday AM-PM Pk Hr.
Future Off-Site Developments: N/A
Source of Trip Generation Rates: ITE 9th Edition

Reductions in Trip Generation Rates:
None: N/A
Pass-by trips: consistent with CC TIS Guidelines and Procedures
Internal trips: N/A
Transit use: N/A
Other: N/A
Horizon Year Roadway Network Improvements: 2017

Methodology & Assumptions:
Non-site traffic estimates: Collier County traffic counts and 2014 AUIR
Site-trip generation: OTISS – ITE 9th Edition
Trip distribution method: Engineer's Estimate – refer to **Fig. 2**, below
Traffic assignment method: project trip generation with background growth
Traffic growth rate: historical growth rate or 2% minimum
Project Turning Movements: site access turn lane analysis – refer to **Fig. 3**, on next page
intersection analysis Price at US 41

Fig. 2 – Project Trip Distribution by Percentage

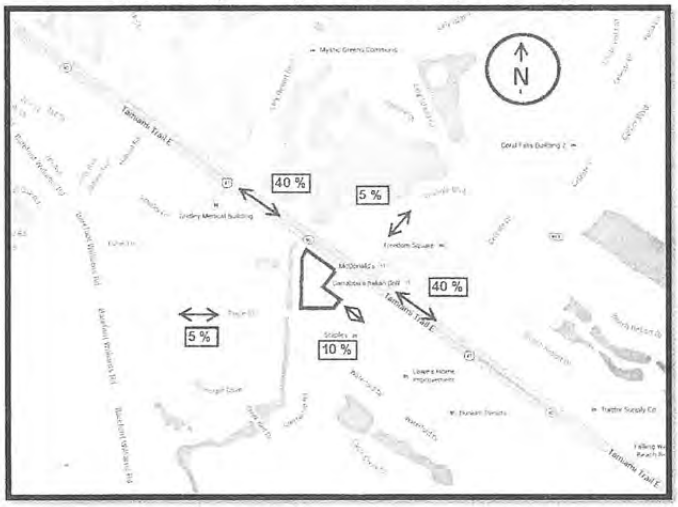

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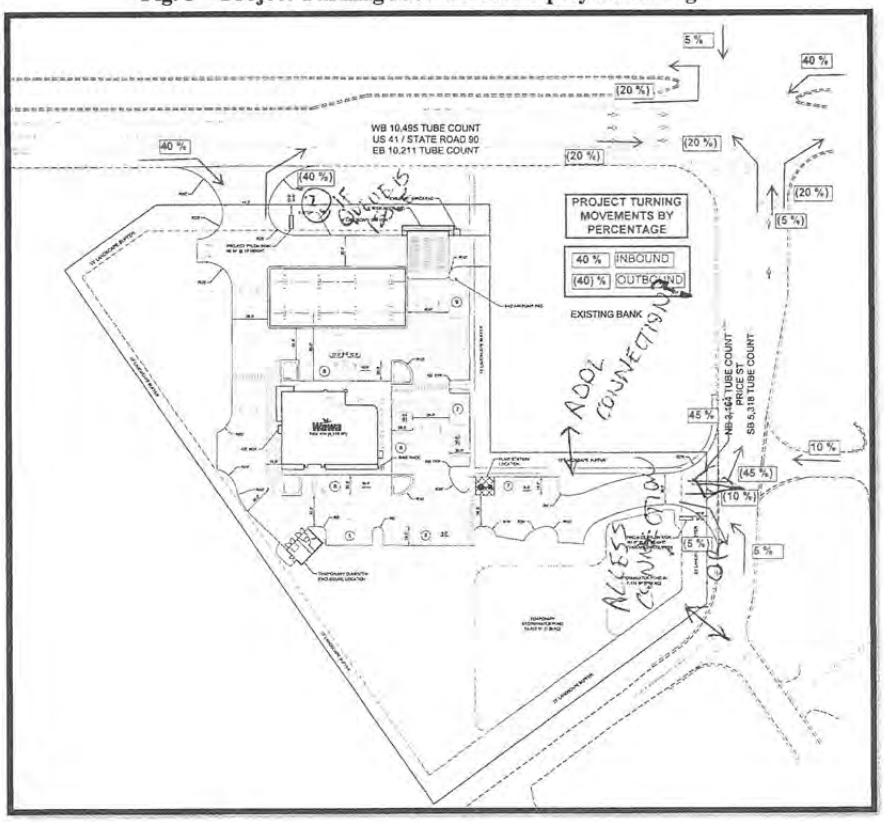
Fig. 3 – Project Turning Movements Map by Percentage



Page **4** of **6**

Special Features: (from preliminary study or prior experience)
Accidents locations: N/A
Sight distance: N/A
Queuing: N/A
Access location & configuration: N/A
Traffic control: MUTCD
Signal system location & progression needs: N/A
On-site parking needs: N/A
Data Sources: CC 2014AUIR; CC Traffic Counts
Base maps: N/A
Prior study reports: N/A
Access policy and jurisdiction: N/A
Review process: N/A
Requirements: N/A
Miscellaneous: N/A

Small Scale Study – No Fee ___

Minor Study - $750.00 _____

Major Study - $1500.00 __X__
Includes 2 intersections

Additional Intersections - $500.00 each _____

All fees will be agreed to during the Methodology meeting and must be paid to Transportation prior to our sign-off on the application.

SIGNATURES

Norman Trebilcock

Study Preparer—Norman Trebilcock

Stephen J. Bolduc 8/17/15

Reviewer(s)

_____

Applicant

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Collier County
Traffic Impact Study Review Fee Schedule

Fees will be paid incrementally as the development proceeds: Methodology Review, Analysis Review, and Sufficiency Reviews. Fees for additional meetings or other optional services are also provided below.

Methodology Review - $500 Fee
Methodology Review includes review of a submitted methodology statement, including review of submitted trip generation estimate(s), distribution, assignment, and review of a "Small Scale Study" determination, written approval/comments on a proposed methodology statement, and written confirmation of a re-submitted, amended methodology statement, and one meeting in Collier County, if needed.

"Small Scale Study" Review - No Additional Fee (Includes one sufficiency review)
Upon approval of the methodology review, the applicant may submit the study. The review includes: a concurrency determination, site access inspection and confirmation of the study compliance with trip generation, distribution and maximum threshold compliance.

"Minor Study Review" - $750 Fee (Includes one sufficiency review)
Review of the submitted traffic analysis includes: optional field visit to site, confirmation of trip generation, distribution, and assignment, concurrency determination, confirmation of committed improvements, review of traffic volume data collected/assembled, review of off-site improvements within the right-of-way, review of site access and circulation, and preparation and review of "sufficiency" comments/questions.

"Major Study Review" - $1,500 Fee (Includes two intersection analysis and two sufficiency reviews)
Review of the submitted traffic analysis includes: field visit to site, confirmation of trip generation, special trip generation and/or trip length study, distribution and assignment, concurrency determination, confirmation of committed improvements, review of traffic volume data collected/assembled, review of traffic growth analysis, review of off-site roadway operations and capacity analysis, review of site access and circulation, neighborhood traffic intrusion issues, any necessary improvement proposals and associated cost estimates, and preparation and review of up to two rounds of "sufficiency" comments/questions and/or recommended conditions of approval.

"Additional intersection Review" - $500 Fee
The review of additional intersections shall include the same parameters as outlined in the "Major Study Review" and shall apply to each intersection above the first two intersections included in the "Major Study Review"

"Additional Sufficiency Reviews" - $500 Fee)
Additional sufficiency reviews beyond those initially included in the appropriate study shall require the additional Fee prior to the completion of the review.

Page **6** of **6**

Appendix C: Trip Generation Calculations
ITE 9th Edition

(6 Sheets)

Project Name:	Wawa - Gas-Service Station	**No:**	
Date:	5/13/2015	**City:**	
State/Province:		**Zip/Postal Code:**	
Country:		**Client Name:**	
Analyst's Name:		**Edition:**	ITE-TGM 9th Edition

Land Use	Size	Daily		AM Pk Hr		PM Pk Hr	
		Entry	Exit	Entry	Exit	Entry	Exit
945 - Gasoline/Service Station With Convenience Market	16 (1)	1302	1302	82	81	108	108
Reduction		0	0	0	0	0	0
Internal		0	0	0	0	0	0
Pass-by		521	521	41	41	54	54
Non-pass-by		781	781	41	40	54	54
Total		1302	1302	82	81	108	108
Total Reduction		0	0	0	0	0	0
Total Internal		0	0	0	0	0	0
Total Pass-by		521	521	41	41	54	54
Total Non-pass-by		781	781	41	40	54	54

(1) Vehicle Fueling Positions

Period Setting

Data provided by ITE

Specify the Independent Variable, Time Period, and Calculation Method to be used in the calculation of the number of Trips generated in the analysis. To record any notes, click Add Notes above.

Project Name: Wawa - Gas-Service Station

Analysis Name: Daily

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
945 - Gasoline/Service Station With ..	Vehicle Fueling Positi	16	Weekday	Average	1302	1302	2604
				162.78			

Traffic Reductions

Specify a percentage by which the Entry Trip and Exit Trip will be reduced for each Land Use. This reduction is applied to the Entry Trip and Exit Trip from the previous section. To record any notes, click Add Notes above.

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
945 - Gasoline/Service Station With Convenience Market	0 %	1302	0 %	1302

External Trips

Specify the percentage of Pass-by Trips for each Land Use. The percentage will be reduced from the total number of External Trips from the previous section. To record any notes, click Add Notes above.

The icon preceding the Pass-by% value indicates data provided by ITE. Clicking the icon changes a custom Pass-by% value to data provided by ITE.

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
945 - Gasoline/Service Station With Convenience Market	2604	40 %	1042	1562

Period Setting — Data provided by ITE

Specify the Independent Variable, Time Period, and Calculation Method to be used in the calculation of the number of Trips generated in the analysis. To record any notes, click Add Notes above.

Project Name: Wawa - Gas-Service Station

Analysis Name: AM Pk Hr

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
945 - Gasoline/Service Station With ..	Vehicle Fueling Positi	16	Weekday, Peak Hour	Average			
				10.16	82	81	163

Traffic Reductions

Specify a percentage by which the Entry Trip and Exit Trip will be reduced for each Land Use. This reduction is applied to the Entry Trip and Exit Trip from the previous section. To record any notes, click Add Notes above.

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
945 - Gasoline/Service Station With Convenience Market	0 %	82	0 %	81

External Trips

Specify the percentage of Pass-by Trips for each Land Use. The percentage will be reduced from the total number of External Trips from the previous section. To record any notes, click Add Notes above.

The icon preceding the Pass-by% value indicates data provided by ITE. Clicking the icon changes a custom Pass-by% value to data provided by ITE.

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
945 - Gasoline/Service Station With Convenience Market	163	50 %	82	81

Period Setting — Data provided by ITE

Specify the Independent Variable, Time Period, and Calculation Method to be used in the calculation of the number of Trips generated in the analysis. To record any notes, click Add Notes above.

Project Name: Wawa - Gas-Service Station

Analysis Name: PM Pk Hr

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
945 - Gasoline/Service Station With ..	Vehicle Fueling Positi	16	Weekday, Peak Hour	Average			
				13.51	108	108	216

Traffic Reductions

Specify a percentage by which the Entry Trip and Exit Trip will be reduced for each Land Use. This reduction is applied to the Entry Trip and Exit Trip from the previous section. To record any notes, click Add Notes above.

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
945 - Gasoline/Service Station With Convenience Market	0 %	108	0 %	108

External Trips

Specify the percentage of Pass-by Trips for each Land Use. The percentage will be reduced from the total number of External Trips from the previous section. To record any notes, click Add Notes above.

The icon preceding the Pass-by% value indicates data provided by ITE. Clicking the icon changes a custom Pass-by% value to data provided by ITE.

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
945 - Gasoline/Service Station With Convenience Market	216	50 %	108	108

Project Name:	Wawa Price Street - Conv. Store with gas	**No:**	
Date:	2/25/2016	**City:**	
State/Province:		**Zip/Postal Code:**	
Country:		**Client Name:**	
Analyst's Name:		**Edition:**	ITE-TGM 9th Edition

LAND USE	SIZE	WEEKDAY		AM PEAK HOUR		PM PEAK HOUR	
		Entry	Exit	Entry	Exit	Entry	Exit
853 - Convenience Market with Gasoline Pumps	6.12 (1)	2588	2587	125	125	156	156
Reduction		0	0	0	0	0	0
Internal		0	0	0	0	0	0
Pass-by		1035	1035	62	63	78	78
Non-pass-by		1553	1552	63	62	78	78
Total		2588	2587	125	125	156	156
Total Reduction		0	0	0	0	0	0
Total Internal		0	0	0	0	0	0
Total Pass-by		1035	1035	62	63	78	78
Total Non-pass-by		1553	1552	63	62	78	78

(1) 1000 Sq. Feet Gross Floor Area

PROJECT NAME: WAWA PRICE STREET - CONV. STORE WITH GAS

ANALYSIS NAME: Weekday

LAND USE	INDEPENDENT VARIABLE	SIZE	TIME PERIOD	METHOD	ENTRY	EXIT	TOTAL
853 - Convenience Market with Gasoline Pumps	1000 Sq. Feet Gros	6.12(0)	Weekday	Average (845.6)	2588	2587	5175

(0) indicates size out of range.

TRAFFIC REDUCTIONS

Specify a percentage by which the Entry Trip and Exit Trip will be reduced for each Land Use. This reduction is applied to the Entry Trip and Exit Trip from the previous section. To record any notes, click Add Notes above.

LAND USE	ENTRY REDUCTION	ADJUSTED ENTRY	EXIT REDUCTION	ADJUSTED EXIT
853 - Convenience Market with Gasoline Pumps	0 %	2588	0 %	2587

EXTERNAL TRIPS

Specify the percentage of Pass-by Trips for each Land Use. The percentage will be reduced from the total number of External Trips from the previous section. To record any notes, click Add Notes above.

The icon preceding the Pass-by% value indicates data provided by ITE. Clicking the icon changes a custom Pass-by% value to data provided by ITE.

LAND USE	EXTERNAL TRIPS	PASS-BY%	PASS-BY TRIPS	NON-PASS-BY TRIPS
853 - Convenience Market with Gasoline Pumps	5175	40 %	2070	3105

PROJECT NAME: WAWA PRICE STREET - CONV. STORE WITH GAS

ANALYSIS NAME: AM Peak Hour

LAND USE	INDEPENDENT VARIABLE	SIZE	TIME PERIOD	METHOD	ENTRY	EXIT	TOTAL
853 - Convenience Market with Gasoline Pumps	1000 Sq. Feet Gros	6.12	Weekday, Peak Hou	Average 40.92	125	125	250

TRAFFIC REDUCTIONS

Specify a percentage by which the Entry Trip and Exit Trip will be reduced for each Land Use. This reduction is applied to the Entry Trip and Exit Trip from the previous section. To record any notes, click Add Notes above.

LAND USE	ENTRY REDUCTION	ADJUSTED ENTRY	EXIT REDUCTION	ADJUSTED EXIT
853 - Convenience Market with Gasoline Pumps	0 %	125	0 %	125

EXTERNAL TRIPS

Specify the percentage of Pass-by Trips for each Land Use. The percentage will be reduced from the total number of External Trips from the previous section. To record any notes, click Add Notes above.

The icon preceding the Pass-by% value indicates data provided by ITE. Clicking the icon changes a custom Pass-by% value to data provided by ITE.

LAND USE	EXTERNAL TRIPS	PASS-BY%	PASS-BY TRIPS	NON-PASS-BY TRIPS
853 - Convenience Market with Gasoline Pumps	250	50 %	125	125

PROJECT NAME: WAWA PRICE STREET - CONV. STORE WITH GAS

ANALYSIS NAME: PM Peak Hour

LAND USE	INDEPENDENT VARIABLE	SIZE	TIME PERIOD	METHOD	ENTRY	EXIT	TOTAL
853 - Convenience Market with Gasoline Pumps	1000 Sq. Feet Gros	6.12	Weekday, Peak Hou	Average 50.92	156	156	312

TRAFFIC REDUCTIONS

Specify a percentage by which the Entry Trip and Exit Trip will be reduced for each Land Use. This reduction is applied to the Entry Trip and Exit Trip from the previous section. To record any notes, click Add Notes above.

LAND USE	ENTRY REDUCTION	ADJUSTED ENTRY	EXIT REDUCTION	ADJUSTED EXIT
853 - Convenience Market with Gasoline Pumps	0 %	156	0 %	156

EXTERNAL TRIPS

Specify the percentage of Pass-by Trips for each Land Use. The percentage will be reduced from the total number of External Trips from the previous section. To record any notes, click Add Notes above.

The icon preceding the Pass-by% value indicates data provided by ITE. Clicking the icon changes a custom Pass-by% value to data provided by ITE.

LAND USE	EXTERNAL TRIPS	PASS-BY%	PASS-BY TRIPS	NON-PASS-BY TRIPS
853 - Convenience Market with Gasoline Pumps	312	50 %	156	156

Project Name:	Wawa Price Street - Proposed	**No:**	
Date:	5/16/2016	**City:**	
State/Province:		**Zip/Postal Code:**	
Country:		**Client Name:**	
Analyst's Name:		**Edition:**	ITE-TGM 9th Edition

LAND USE	SIZE	DAILY		AM PK HR		PM PK HR	
		Entry	Exit	Entry	Exit	Entry	Exit
820 - Shopping Center	27.5 (1)	1467	1467	44	27	121	131
Reduction		0	0	0	0	0	0
Internal		0	0	0	0	0	0
Pass-by		220	220	11	7	30	33
Non-pass-by		1247	1247	33	20	91	98
853 - Convenience Market with Gasoline Pumps	6.12 (2)	2588	2587	125	125	156	156
Reduction		0	0	0	0	0	0
Internal		0	0	0	0	0	0
Pass-by		1035	1035	62	63	78	78
Non-pass-by		1553	1552	63	62	78	78
Total		4055	4054	169	152	277	287
Total Reduction		0	0	0	0	0	0
Total Internal		0	0	0	0	0	0
Total Pass-by		1255	1255	73	70	108	111
Total Non-pass-by		2800	2799	96	82	169	176

PERIOD SETTING

DATA PROVIDED BY ITE

Specify the Independent Variable, Time Period, and Calculation Method to be used in the calculation of the number of Trips generated in the analysis. To record any notes, click Add Notes above.

PROJECT NAME: WAWA PRICE STREET - PROPOSED

ANALYSIS NAME: Daily

LAND USE	INDEPENDENT VARIABLE	SIZE	TIME PERIOD	METHOD	ENTRY	EXIT	TOTAL
820 - Shopping Center	1000 Sq. Feet Gros	27.5	Weekday	Best Fit (LOG) Ln(T) = 0.65Ln(X) + 5.83	1467	1467	2934
853 - Convenience Market with Gasoline Pumps	1000 Sq. Feet Gros	6.12(0)	Weekday	Average 845.6	2588	2587	5175

(0) indicates size out of range.

TRAFFIC REDUCTIONS

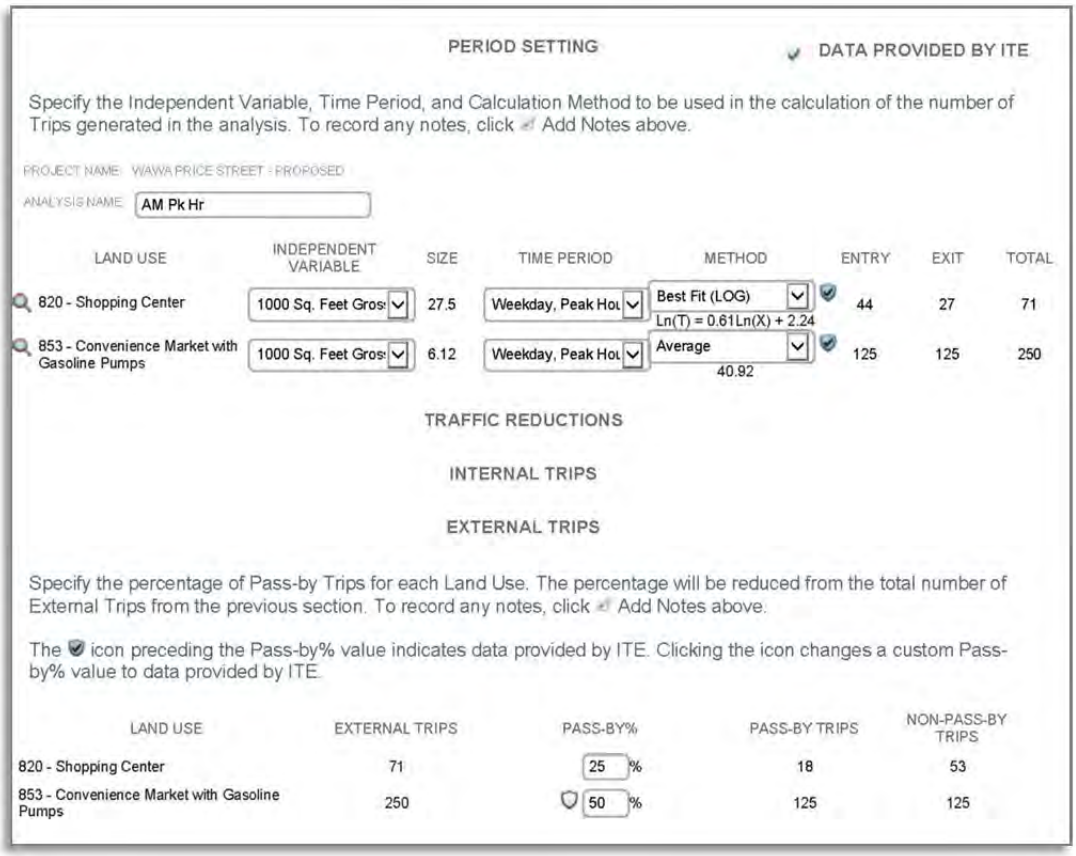
INTERNAL TRIPS

EXTERNAL TRIPS

Specify the percentage of Pass-by Trips for each Land Use. The percentage will be reduced from the total number of External Trips from the previous section. To record any notes, click Add Notes above.

The icon preceding the Pass-by% value indicates data provided by ITE. Clicking the icon changes a custom Pass-by% value to data provided by ITE.

LAND USE	EXTERNAL TRIPS	PASS-BY%	PASS-BY TRIPS	NON-PASS-BY TRIPS
820 - Shopping Center	2934	15 %	440	2494
853 - Convenience Market with Gasoline Pumps	5175	40 %	2070	3105



PERIOD SETTING

DATA PROVIDED BY ITE

Specify the Independent Variable, Time Period, and Calculation Method to be used in the calculation of the number of Trips generated in the analysis. To record any notes, click Add Notes above.

PROJECT NAME: WAWA PRICE STREET - PROPOSED

ANALYSIS NAME: AM Pk Hr

LAND USE	INDEPENDENT VARIABLE	SIZE	TIME PERIOD	METHOD	ENTRY	EXIT	TOTAL
820 - Shopping Center	1000 Sq. Feet Gros	27.5	Weekday, Peak Hou	Best Fit (LOG) Ln(T) = 0.61Ln(X) + 2.24	44	27	71
853 - Convenience Market with Gasoline Pumps	1000 Sq. Feet Gros	6.12	Weekday, Peak Hou	Average 40.92	125	125	250

TRAFFIC REDUCTIONS

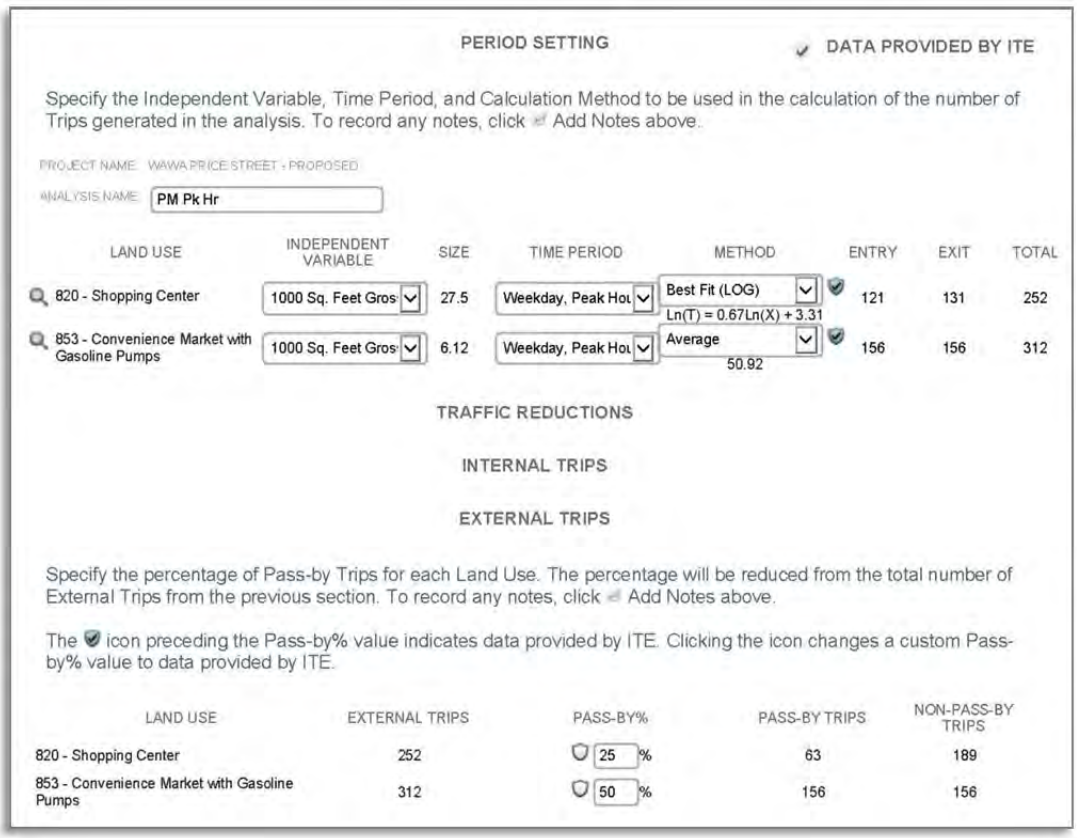
INTERNAL TRIPS

EXTERNAL TRIPS

Specify the percentage of Pass-by Trips for each Land Use. The percentage will be reduced from the total number of External Trips from the previous section. To record any notes, click Add Notes above.

The icon preceding the Pass-by% value indicates data provided by ITE. Clicking the icon changes a custom Pass-by% value to data provided by ITE.

LAND USE	EXTERNAL TRIPS	PASS-BY%	PASS-BY TRIPS	NON-PASS-BY TRIPS
820 - Shopping Center	71	25 %	18	53
853 - Convenience Market with Gasoline Pumps	250	50 %	125	125



PERIOD SETTING

DATA PROVIDED BY ITE

Specify the Independent Variable, Time Period, and Calculation Method to be used in the calculation of the number of Trips generated in the analysis. To record any notes, click Add Notes above.

PROJECT NAME: WAWA PRICE STREET - PROPOSED

ANALYSIS NAME: PM Pk Hr

LAND USE	INDEPENDENT VARIABLE	SIZE	TIME PERIOD	METHOD	ENTRY	EXIT	TOTAL
820 - Shopping Center	1000 Sq. Feet Gros	27.5	Weekday, Peak Hou	Best Fit (LOG) Ln(T) = 0.67Ln(X) + 3.31	121	131	252
853 - Convenience Market with Gasoline Pumps	1000 Sq. Feet Gros	6.12	Weekday, Peak Hou	Average 50.92	156	156	312

TRAFFIC REDUCTIONS

INTERNAL TRIPS

EXTERNAL TRIPS

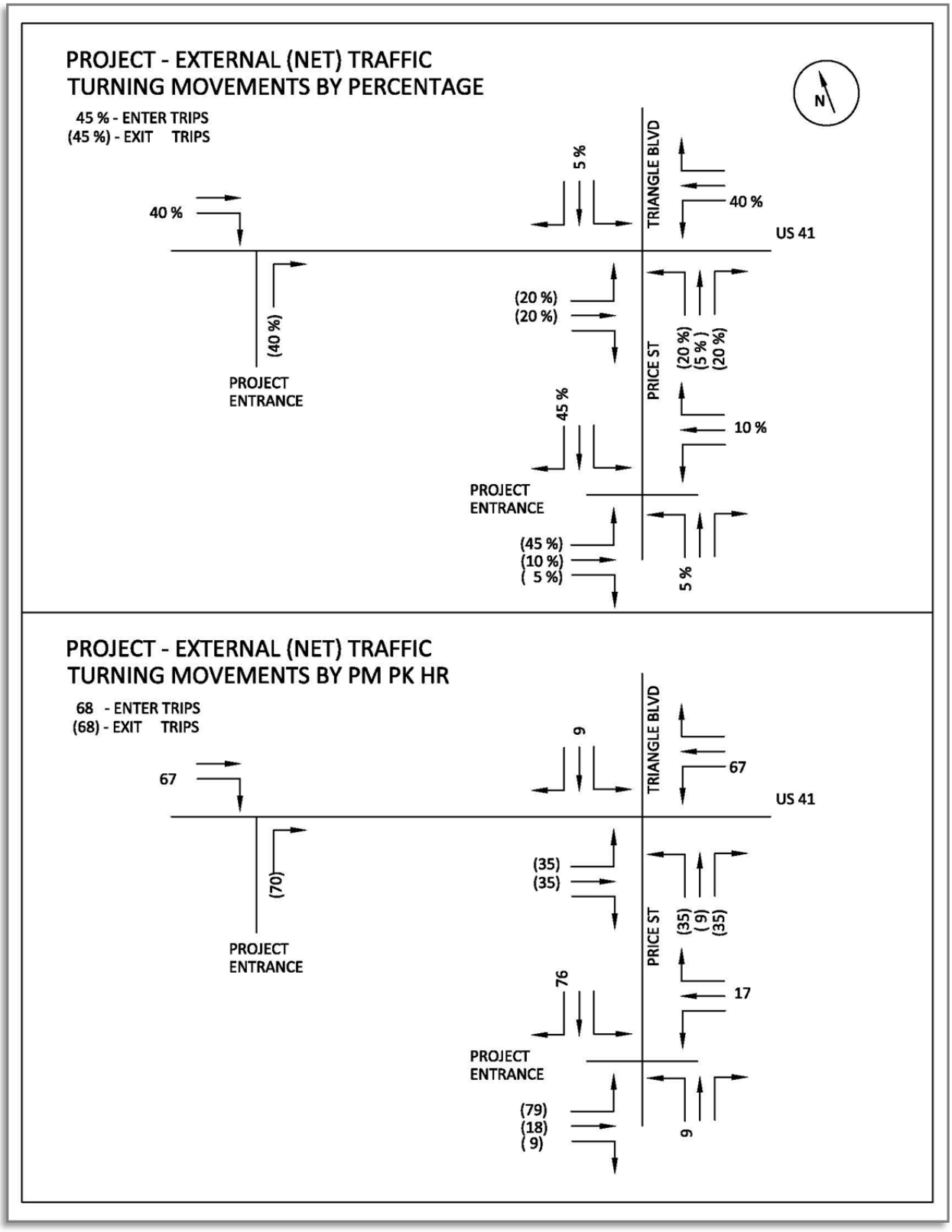
Specify the percentage of Pass-by Trips for each Land Use. The percentage will be reduced from the total number of External Trips from the previous section. To record any notes, click Add Notes above.

The icon preceding the Pass-by% value indicates data provided by ITE. Clicking the icon changes a custom Pass-by% value to data provided by ITE.

LAND USE	EXTERNAL TRIPS	PASS-BY%	PASS-BY TRIPS	NON-PASS-BY TRIPS
820 - Shopping Center	252	25 %	63	189
853 - Convenience Market with Gasoline Pumps	312	50 %	156	156

Appendix D: Turning Movements Exhibits

(4 Sheets)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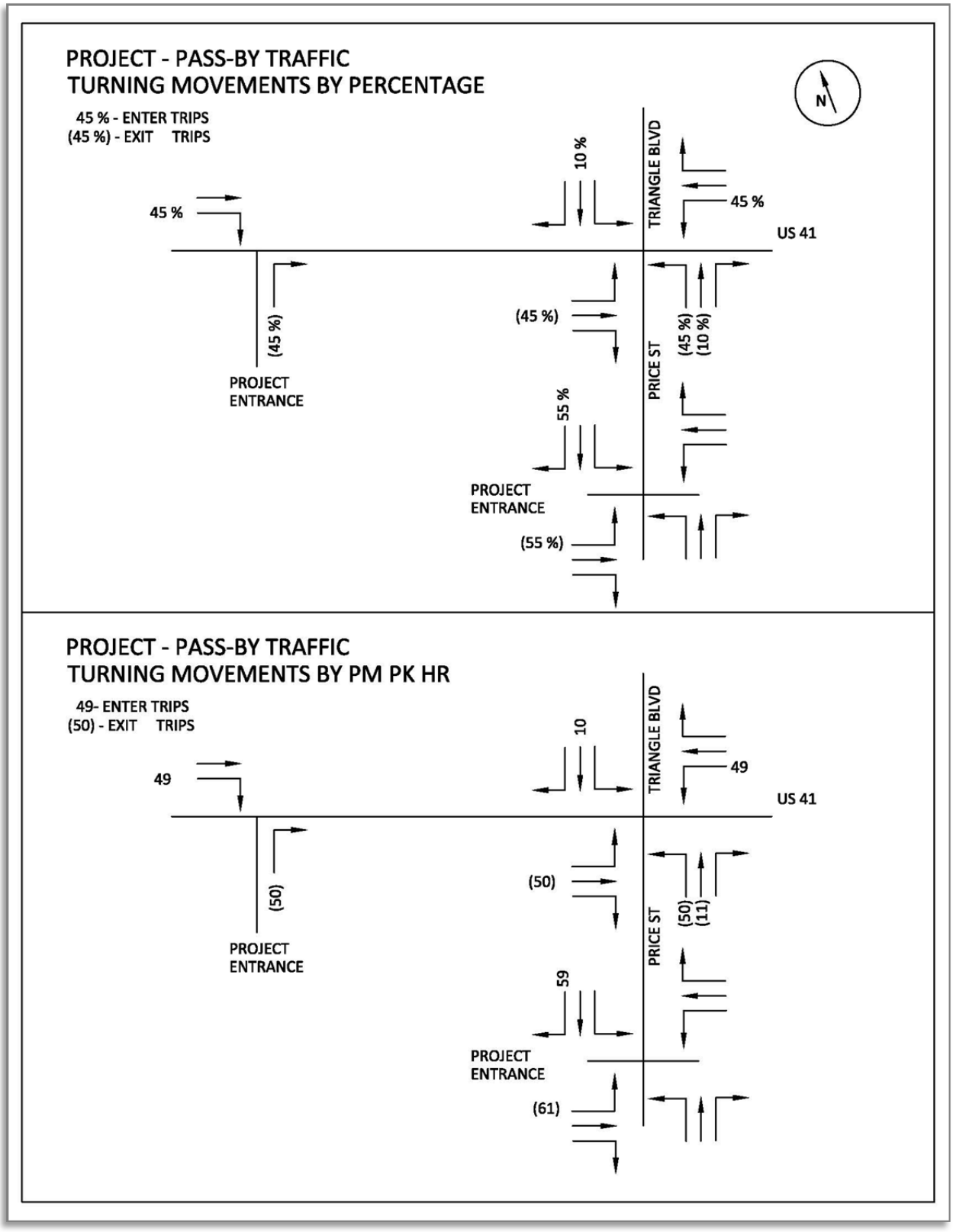
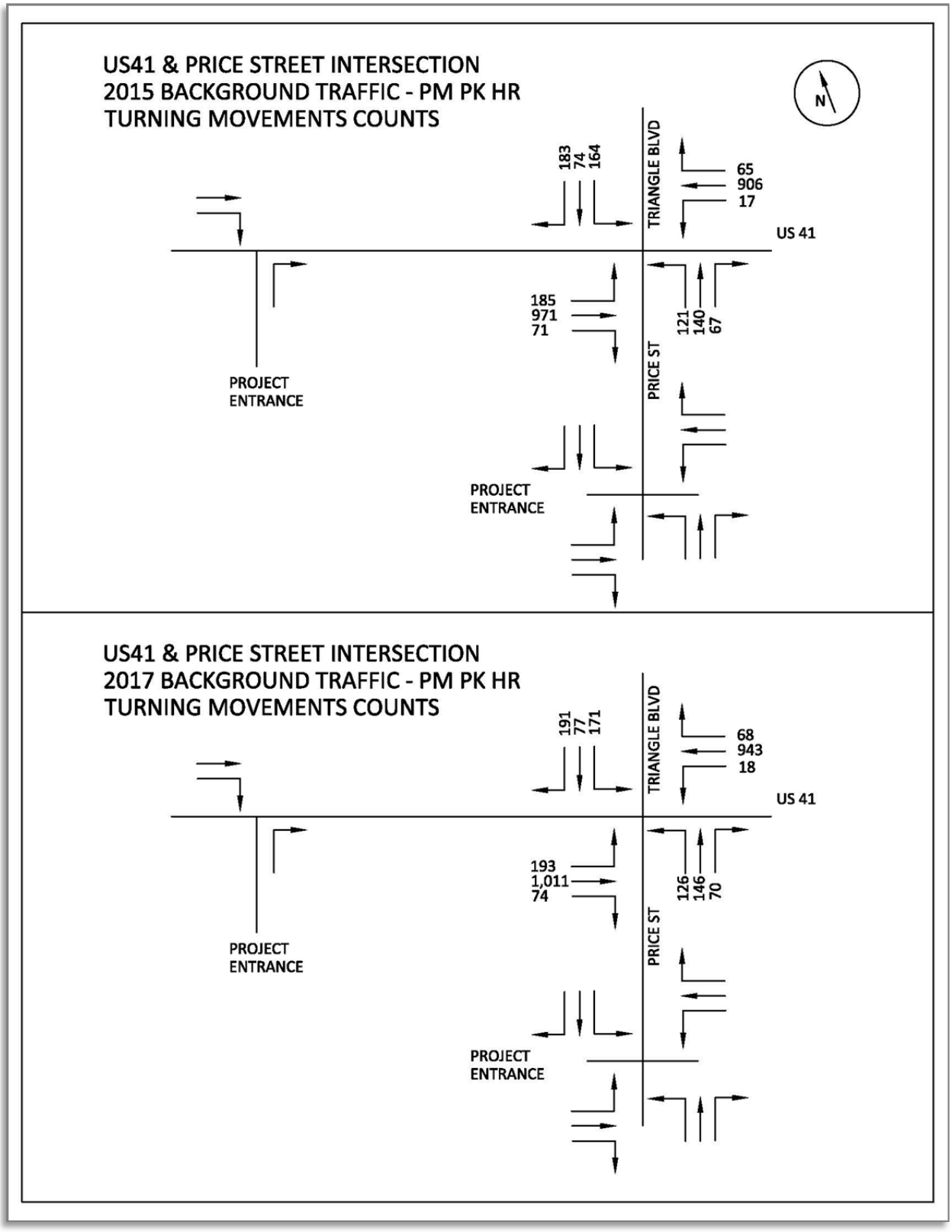
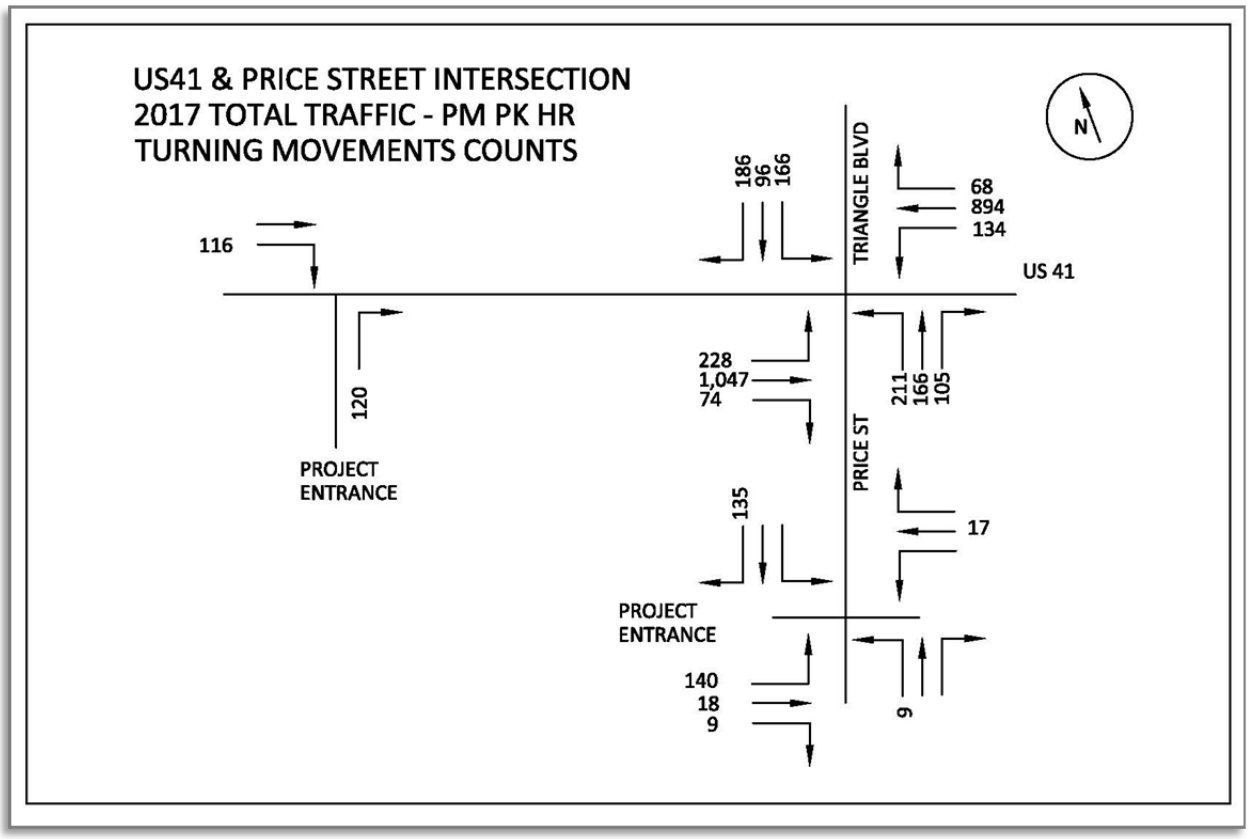
TURNING MOVEMENTS BY PERCENTAGE
45 % - ENTER TRIPS
(45 %) - EXIT TRIPS
N
TRIANGLE BLVD
US 41
PRICE ST
PROJECT ENTRANCE
40 %
(40 %)
5 %
40 %
(20 %)
(20 %)
(20 %)
(5 %)
(20 %)
45 %
10 %
(45 %)
(10 %)
(5 %)
5 %
PROJECT - EXTERNAL (NET) TRAFFIC
TURNING MOVEMENTS BY PM PK HR
68 - ENTER TRIPS
(68) - EXIT TRIPS
TRIANGLE BLVD
US 41
PRICE ST
PROJECT ENTRANCE
67
(70)
9
67
(35)
(35)
(35)
(9)
(35)
76
17
(79)
(18)
(9)
9


PROJECT - PASS-BY TRAFFIC
TURNING MOVEMENTS BY PERCENTAGE
45 % - ENTER TRIPS
(45 %) - EXIT TRIPS
N
10 %
TRIANGLE BLVD
45 %
45 %
US 41
(45 %)
(45 %)
PROJECT
ENTRANCE
(45 %)
(10 %)
PRICE ST
55 %
PROJECT
ENTRANCE
(55 %)
PROJECT - PASS-BY TRAFFIC
TURNING MOVEMENTS BY PM PK HR
49- ENTER TRIPS
(50) - EXIT TRIPS
10
TRIANGLE BLVD
49
49
US 41
(50)
(50)
PROJECT
ENTRANCE
(50)
(11)
PRICE ST
59
PROJECT
ENTRANCE
(61)


US41 & PRICE STREET INTERSECTION
2015 BACKGROUND TRAFFIC - PM PK HR
TURNING MOVEMENTS COUNTS
N
183
74
164
TRIANGLE BLVD
65
906
17
US 41
185
971
71
121
140
67
PRICE ST
PROJECT
ENTRANCE
PROJECT
ENTRANCE
US41 & PRICE STREET INTERSECTION
2017 BACKGROUND TRAFFIC - PM PK HR
TURNING MOVEMENTS COUNTS
191
77
171
TRIANGLE BLVD
68
943
18
US 41
193
1,011
74
126
146
70
PRICE ST
PROJECT
ENTRANCE
PROJECT
ENTRANCE


US41 & PRICE STREET INTERSECTION
2017 TOTAL TRAFFIC - PM PK HR
TURNING MOVEMENTS COUNTS
N
186
96
166
TRIANGLE BLVD
68
894
134
US 41
116
120
PROJECT
ENTRANCE
228
1,047
74
211
166
105
PRICE ST
135
17
PROJECT
ENTRANCE
140
18
9
9

Appendix E: Intersection Turning Movements Counts

(1 Sheet)

PROJECT - INTERSECTION TURNING MOVEMENT COUNTS
INTERSECTION - US 41 AND TRIANGLE/PRICE
COUNT DATA - DATE - 04-15-2015
COUNT DATA - TIME -4.00 PM - 6.00 PM

TRAFFIC COUNTS - 15 MINUTE SUMMARY

TIME		US 41								TRIANGLE BLVD				PRICE STREET				INTERSECTION TOTAL
		WESTBOUND				EASTBOUND				SOUTHBOUND				NORTHBOUND				
FROM	TO	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL	
4.00	4.15	10	287	12	309	50	198	36	284	40	14	33	87	34	33	14	81	761
4.15	4.30	2	201	12	215	61	244	25	330	32	30	32	94	35	39	16	90	729
4.30	4.45	2	225	11	238	43	239	33	315	46	17	32	95	25	30	18	73	721
4.45	5.00	3	179	10	192	44	213	23	280	34	27	51	112	32	38	15	85	669
5.00	5.15	2	271	9	282	48	253	13	314	45	19	44	108	27	42	18	87	791
5.15	5.30	4	248	24	276	49	222	17	288	28	20	39	87	36	34	17	87	738
5.30	5.45	7	199	21	227	42	273	17	332	55	7	47	109	24	24	16	64	732
5.45	6.00	2	184	15	201	47	195	20	262	37	27	37	101	27	33	5	65	629

TRAFFIC COUNTS - HOURLY SUMMARY

TIME		US 41								TRIANGLE BLVD				PRICE STREET				INTERSECTION TOTAL
		WESTBOUND				EASTBOUND				SOUTHBOUND				NORTHBOUND				
FROM	TO	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL	
4.00	5.00	17	892	45	954	198	894	117	1,209	152	88	148	388	126	140	63	329	2,880
4.15	5.15	9	876	42	927	196	949	94	1,239	157	93	159	409	119	149	67	335	2,910
4.30	5.30	11	923	54	988	184	927	86	1,197	153	83	166	402	120	144	68	332	2,919
4.45	5.45	16	897	64	977	183	961	70	1,214	162	73	181	416	119	138	66	323	2,930
5.00	6.00	15	902	69	986	186	943	67	1,196	165	73	167	405	114	133	56	303	2,890

TRAFFIC COUNTS - PEAK HOUR SUMMARY

TIME		US 41								TRIANGLE BLVD				PRICE STREET				INTERSECTION TOTAL
		WESTBOUND				EASTBOUND				SOUTHBOUND				NORTHBOUND				
FROM	TO	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL	
4.45	5.45	16	897	64	977	183	961	70	1,214	162	73	181	416	119	138	66	323	2,930
		PHF		0.87		PHF		0.92		PHF		0.96		PHF		0.93		
		INTERSECTION PHF								0.93								

PM PEAK HOUR FUTURE TRAFFIC																	
	US 41								TRIANGLE/PRICE							
	WESTBOUND				EASTBOUND				SOUTHBOUND				NORTHBOUND			
	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	TOTAL
TMCs	16	897	64	977	183	961	70	1,214	162	73	181	416	119	138	66	323
PSCF	1.01	1.01	1.01		1.01	1.01	1.01		1.01	1.01	1.01		1.01	1.01	1.01	
2015 BACKGROUND PEAK SEASON VOLUME	**17**	**906**	**65**	**988**	**185**	**971**	**71**	**1,227**	**164**	**74**	**183**	**421**	**121**	**140**	**67**	**328**
GROWTH RATE	2.0%	2.0%	2.0%		2.0%	2.0%	2.0%		2.0%	2.0%	2.0%		2.0%	2.0%	2.0%	
YEARS TO BUILD-OUT	2	2	2		2	2	2		2	2	2		2	2	2	
2017 BACKGROUND PEAK SEASON VOLUME	18	943	68	1,029	193	1,011	74	1,278	171	77	191	439	126	146	70	342
PROJECT EXTERNAL (NET) VOLUMES	67	0	0	67	35	35	0	70	0	9	0	9	35	9	35	79
PROJECT PASS-BY VOLUMES	49	-49	0	0	0	1	0	1	-5	10	-5	0	50	11	0	61
2017 BACKGROUND + PROJECT	**134**	**894**	**68**	**1,096**	**228**	**1,047**	**74**	**1,349**	**166**	**96**	**186**	**448**	**211**	**166**	**105**	**482**

Appendix F: FDOT 2014 Peak Season Factor Category Report - Excerpt

(1 Sheet)

2014 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 0300 COLLIER COUNTYWIDE

MOCF: 0.88

WEEK	DATES	SF	PSCF
1	01/01/2014 - 01/04/2014	1.00	1.14
2	01/05/2014 - 01/11/2014	0.98	1.11
3	01/12/2014 - 01/18/2014	0.96	1.09
4	01/19/2014 - 01/25/2014	0.94	1.07
* 5	01/26/2014 - 02/01/2014	0.92	1.05
* 6	02/02/2014 - 02/08/2014	0.90	1.02
* 7	02/09/2014 - 02/15/2014	0.88	1.00
* 8	02/16/2014 - 02/22/2014	0.86	0.98
* 9	02/23/2014 - 03/01/2014	0.86	0.98
*10	03/02/2014 - 03/08/2014	0.86	0.98
*11	03/09/2014 - 03/15/2014	0.86	0.98
*12	03/16/2014 - 03/22/2014	0.86	0.98
*13	03/23/2014 - 03/29/2014	0.87	0.99
*14	03/30/2014 - 04/05/2014	0.88	1.00
*15	04/06/2014 - 04/12/2014	0.88	1.00
*16	04/13/2014 - 04/19/2014	0.89	1.01
*17	04/20/2014 - 04/26/2014	0.92	1.05
18	04/27/2014 - 05/03/2014	0.94	1.07
19	05/04/2014 - 05/10/2014	0.96	1.09
20	05/11/2014 - 05/17/2014	0.98	1.11
21	05/18/2014 - 05/24/2014	1.00	1.14
22	05/25/2014 - 05/31/2014	1.03	1.17
23	06/01/2014 - 06/07/2014	1.05	1.19
24	06/08/2014 - 06/14/2014	1.07	1.22
25	06/15/2014 - 06/21/2014	1.09	1.24
26	06/22/2014 - 06/28/2014	1.10	1.25
27	06/29/2014 - 07/05/2014	1.10	1.25
28	07/06/2014 - 07/12/2014	1.11	1.26
29	07/13/2014 - 07/19/2014	1.11	1.26
30	07/20/2014 - 07/26/2014	1.11	1.26
31	07/27/2014 - 08/02/2014	1.12	1.27
32	08/03/2014 - 08/09/2014	1.12	1.27
33	08/10/2014 - 08/16/2014	1.12	1.27
34	08/17/2014 - 08/23/2014	1.13	1.28
35	08/24/2014 - 08/30/2014	1.14	1.30
36	08/31/2014 - 09/06/2014	1.16	1.32
37	09/07/2014 - 09/13/2014	1.18	1.34
38	09/14/2014 - 09/20/2014	1.20	1.36
39	09/21/2014 - 09/27/2014	1.17	1.33
40	09/28/2014 - 10/04/2014	1.14	1.30
41	10/05/2014 - 10/11/2014	1.11	1.26
42	10/12/2014 - 10/18/2014	1.08	1.23
43	10/19/2014 - 10/25/2014	1.07	1.22
44	10/26/2014 - 11/01/2014	1.06	1.20
45	11/02/2014 - 11/08/2014	1.05	1.19
46	11/09/2014 - 11/15/2014	1.04	1.18
47	11/16/2014 - 11/22/2014	1.03	1.17
48	11/23/2014 - 11/29/2014	1.02	1.16
49	11/30/2014 - 12/06/2014	1.01	1.15
50	12/07/2014 - 12/13/2014	1.01	1.15
51	12/14/2014 - 12/20/2014	1.00	1.14
52	12/21/2014 - 12/27/2014	0.98	1.11
53	12/28/2014 - 12/31/2014	0.96	1.09

* PEAK SEASON

09-MAR-2015 16:07:47 830UPD 1_0300_PKSEASON.TXT

Appendix G: Intersection Signal EPAC Data

(9 Sheets)

Programmed EPAC Data

05/08/2015
8:16:33 am

Intersection Name: US41 @ Price/Triangle **Intersection Alias: US41@Price**

Access Code: 9999 Channel: 47 Address: 55 Revision: 3.34b

Access Data

Port 2 Comm :19200 Baud
Port 3 Comm :19200 Baud

Phase Data

Vehical Basic Timings

Phase	Min_Grn	Passage	Max1	Max2	Yellow	All Red
1	7	3.0	15	0	4.8	2.4
2	20	5.0	50	0	4.8	2.4
3	7	3.0	15	0	4.4	3.7
4	7	3.0	25	0	4.4	3.7
5	7	3.0	15	0	4.8	2.4
6	20	5.0	50	0	4.8	2.4
7	7	3.0	15	0	4.4	3.7
8	7	3.0	25	0	4.4	3.7

Vehical Density Timings

Added Initial	Max_Initial	Time B4 Reduction	Cars Before	Time To Reduce	Min_Gap
0.0	0	0	0	0	0.0
0.0	0	0	0	0	0.0
0.0	0	0	0	0	0.0
0.0	0	0	0	0	0.0
0.0	0	0	0	0	0.0
0.0	0	0	0	0	0.0
0.0	0	0	0	0	0.0
0.0	0	0	0	0	0.0

Pedestrian Timing

Phase	Walk	Ped Clear	Flashing Walk	Extended Ped Clear	Actuated Rest in Walk
1	0	0	No	0	No
2	7	32	No	0	No
3	0	0	No	0	No
4	0	0	No	0	No
5	0	0	No	0	No
6	7	35	No	0	No
7	0	0	No	0	No
8	7	42	No	0	No

General Control

Initialize	Non-Act Response	Veh Recall	Ped Recall	Recall Delay
Inactive	None	None	None	0
Green	NonActI	Min	None	0
Inactive	None	None	None	0
Inactive	NonActII	None	None	0
Inactive	None	None	None	0
Green	NonActI	Min	None	0
Inactive	None	None	None	0
Inactive	NonActII	None	None	0

Miscellaneous

Non Lock	Dual Entry	Last Car Passage	Conditional Service	No Simultaneous Gap Out
Yes	No	No	No	No
Yes	No	No	No	No
Yes	No	No	No	No
Yes	Yes	No	No	No
Yes	No	No	No	No
Yes	No	No	No	No
Yes	No	No	No	No
Yes	Yes	No	No	No

Special Sequence

Phase	Phase Omit	Minus Yellow Phase	Omit Call
1	6	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	2	0	0
6	0	0	0
7	0	0	0
8	0	0	0

Vehical Detector Phase Assignment

	Assigned Phase	Mode	Switched Phase	Extend	Delay
Vehical Detector Channel :1	1	Veh	0	0.0	0
Vehical Detector Channel :2	2	Veh	0	0.0	0
Vehical Detector Channel :3	3	Veh	0	0.0	0
Vehical Detector Channel :4	4	Veh	0	0.0	0
Vehical Detector Channel :5	5	Veh	0	0.0	0
Vehical Detector Channel :6	6	Veh	0	0.0	0
Vehical Detector Channel :7	7	Veh	0	0.0	0
Vehical Detector Channel :8	8	Veh	0	0.0	0
Vehical Detector Channel :15	4	Veh	0	0.0	10

Pedestrian Detector

Default Data

Special Detector Phase Assignment

	Assign Phase	Mode	Switched Phase	Extend	Delay
:					

Default Data

Unit Data

General Control

Startup Time: 0sec Startup State: Flash Red Revert: 4sec

Auto Ped Clear: No Stop Time Reset: No Alternate Sequence: 0

ABC connector Input Modes: 0

ABC connector Output Modes: 0

D connector Input Modes: 0

D connector Output Modes: 0

Ring	Input Respons	Output Selection
1	Ring 1	Ring 1
2	Ring 2	Ring 2
3	None	None
4	None	None

Remote Flash

Test A = Flash Yes

Phase	Flash Entry Phase	Flash Exit Phase
2	No	Yes
4	Yes	No
6	No	Yes
8	Yes	No

Channel	Flash Color	Flash Alternat
1	Red	No
2	Yellow	No
3	Red	Yes
4	Red	Yes
5	Red	No
6	Yellow	No
7	Red	Yes
8	Red	Yes

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Overlaps

Phase(s)	Overlaps A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trail Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trail Yellow	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Trail Red	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Plus Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minus Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring

Phase	Ring	Next Phase
1	1	2
2	1	3
3	1	4
4	1	1
5	2	6
6	2	7
7	2	8
8	2	5

Concurrent Phases	Phase(s) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1	2	3	4	1	1	3	3	9	10	11	12	13	14	15	16
	5	5	7	7	2	2	4	4								
	6	6	8	8	5	6	7	8								

Alternate Sequences

Alternate Sequences

Phase Pair(s)

No Alternate Sequences Programmed

Port 1 Data

BIU Addr	Port Status	Message 40
0	Used	No
1	Used	No
8	Used	No
16	Used	No
18	Used	No

Channel Assignment

Control	Channel	Hardware Pin Set		Control	Channel	Hardware Pin Set		Control	Channel	Hardware Pin Set	
Ph.1 Veh	1	1 - Ph.1 RYG	1	Ph.2 Veh	2	2 - Ph.2 RYG	2	Ph.3 Veh	3	3 - Ph.3 RYG	3
Ph.4 Veh	4	4 - Ph.4 RYG	4	Ph.5 Veh	5	5 - Ph.5 RYG	5	Ph.6 Veh	6	6 - Ph.6 RYG	6
Ph.7 Veh	7	7 - Ph.7 RYG	7	Ph.8 Veh	8	8 - Ph.8 RYG	8	Ph.2 Ped	9	10 - Ph.2 DPW	10
Ph.4 Ped	10	12 - Ph.4 DPW	12	Ph.6 Ped	11	14 - Ph.6 DPW	14	Ph.8 Ped	12	16 - Ph.8 DPW	16
Ph.1 OLP	13	17 - Ph.1 RYG	17	Ph.2 OLP	14	18 - Ph.2 RYG	18	Ph.3 OLP	15	19 - Ph.3 RYG	19
Ph.4 OLP	16	20 - Ph.4 RYG	20	Ph.1 Ped	17	9 - Ph.1 DPW	9	Ph.3 Ped	18	11 - Ph.3 DPW	11
Ph.5 Ped	19	13 - Ph.5 DPW	13	Ph.7 Ped	20	15 - Ph.7 DPW	15				

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Coordination Data

General Coordination Data

Operation Mode: 1=Auto
Coordination Mode: 2=Permissive Yield
Maximun Mode: 0=Inhibit
Correction Mode: 2=Short Way

Offset Mode: 0=Beg Grn
Force Mode: 0=Plan
Max Dwell Time: 0
Yield Period: 0

Manual Dial: 1
Manual Split: 1
Manual Offset: 1

Dial/Split	Cycle
1/1	105
1/2	105
1/3	115
1/4	105
2/1	125
2/2	115
2/4	125
3/1	140
3/2	150
3/3	140
3/4	125
4/1	140
4/2	125
4/3	140

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Split Times and Phase Mode

Dial 1 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	19	0=Actuated	2	47	1=Coordinate	3	22	0=Actuated	4	17	0=Actuated
5	17	0=Actuated	6	49	1=Coordinate	7	20	0=Actuated	8	19	0=Actuated

Dial 1 / Split 2

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	19	0=Actuated	2	47	1=Coordinate	3	22	0=Actuated	4	17	0=Actuated
5	17	0=Actuated	6	49	1=Coordinate	7	20	0=Actuated	8	19	0=Actuated

Dial 1 / Split 3

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	19	0=Actuated	2	57	1=Coordinate	3	22	0=Actuated	4	17	0=Actuated
5	17	0=Actuated	6	59	1=Coordinate	7	20	0=Actuated	8	19	0=Actuated

Dial 1 / Split 4

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	19	0=Actuated	2	47	1=Coordinate	3	22	0=Actuated	4	17	0=Actuated
5	17	0=Actuated	6	49	1=Coordinate	7	20	0=Actuated	8	19	0=Actuated

Dial 2 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	24	0=Actuated	2	58	1=Coordinate	3	24	0=Actuated	4	19	0=Actuated
5	21	0=Actuated	6	61	1=Coordinate	7	22	0=Actuated	8	21	0=Actuated

Dial 2 / Split 2

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	24	0=Actuated	2	50	1=Coordinate	3	23	0=Actuated	4	18	0=Actuated
5	17	0=Actuated	6	57	1=Coordinate	7	21	0=Actuated	8	20	0=Actuated

Dial 2 / Split 4

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	28	0=Actuated	2	54	1=Coordinate	3	24	0=Actuated	4	19	0=Actuated
5	17	0=Actuated	6	65	1=Coordinate	7	22	0=Actuated	8	21	0=Actuated

Dial 3 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	24	0=Actuated	2	60	1=Coordinate	3	32	0=Actuated	4	24	0=Actuated
5	20	0=Actuated	6	64	1=Coordinate	7	27	0=Actuated	8	29	0=Actuated

Dial 3 / Split 2

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	29	0=Actuated	2	58	1=Coordinate	3	36	0=Actuated	4	27	0=Actuated
5	23	0=Actuated	6	64	1=Coordinate	7	26	0=Actuated	8	37	0=Actuated

Dial 3 / Split 3

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	27	0=Actuated	2	53	1=Coordinate	3	35	0=Actuated	4	25	0=Actuated
5	20	0=Actuated	6	60	1=Coordinate	7	26	0=Actuated	8	34	0=Actuated

Dial 3 / Split 4

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	28	0=Actuated	2	54	1=Coordinate	3	24	0=Actuated	4	19	0=Actuated
5	17	0=Actuated	6	65	1=Coordinate	7	22	0=Actuated	8	21	0=Actuated

Dial 4 / Split 1

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	26	0=Actuated	2	60	1=Coordinate	3	30	0=Actuated	4	24	0=Actuated
5	22	0=Actuated	6	64	1=Coordinate	7	27	0=Actuated	8	27	0=Actuated

Dial 4 / Split 2

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	28	0=Actuated	2	54	1=Coordinate	3	24	0=Actuated	4	19	0=Actuated
5	17	0=Actuated	6	65	1=Coordinate	7	22	0=Actuated	8	21	0=Actuated

Dial 4 / Split 3

Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	29	0=Actuated	2	57	1=Coordinate	3	30	0=Actuated	4	24	0=Actuated
5	24	0=Actuated	6	62	1=Coordinate	7	27	0=Actuated	8	27	0=Actuated

Traffic Plan Data

Plan: **1/1/1**	Offset Time: 65	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **1/2/1**	Offset Time: 65	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **1/3/1**	Offset Time: 65	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **1/4/1**	Offset Time: 65	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **2/1/1**	Offset Time: 72	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **2/2/1**	Offset Time: 65	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **2/4/1**	Offset Time: 70	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **3/1/1**	Offset Time: 14	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **3/2/1**	Offset Time: 18	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **3/3/1**	Offset Time: 29	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **3/4/1**	Offset Time: 70	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **4/1/1**	Offset Time: 79	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **4/2/1**	Offset Time: 70	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: **4/3/1**	Offset Time: 84	Alt. Sequence: 0	Mode: 0=Normal	Rg 2 Lag Time: 0	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0

Local TBC Data

Start of Daylight Saving Month: 3 Week: 2 Cycle Zero Reference Hours: 24 Min: 0

End of Daylight Saving Month: 11 Week: 1

Source Day	Equate Days 1	2	3	4	5	6	7
	2	3	4	5	6	0	0	0

Traffic Data

Event	Day	Time	D/S/O	flash	PHASE FUNCTION 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0:1	5/5/0	Flash On																
2	1	6:0	0/0/4																	
3	1	8:0	1/3/1																	
4	1	10:30	2/4/1																	
5	1	13:45	3/4/1																	
6	1	17:0	2/2/1																	
7	1	19:30	1/4/1																	
8	1	22:0	0/0/4																	
9	1	23:0	5/5/0	Flash On																
10	2	0:1	5/5/0	Flash On																
11	2	6:0	4/1/1																	
12	2	7:0	3/1/1																	
13	2	10:0	3/2/1																	
14	2	16:0	3/3/1																	
15	2	18:30	2/1/1																	
16	2	20:0	1/2/1																	
17	2	22:0	0/0/4																	
18	2	23:0	5/5/0	Flash On																
19	7	0:1	5/5/0	Flash On																
20	7	6:0	0/0/4																	
21	7	8:0	1/3/1																	
22	7	11:30	2/4/1																	
23	7	13:30	4/2/1																	
24	7	16:15	2/2/1																	
25	7	18:30	1/4/1																	
26	7	21:30	0/0/4																	
27	7	23:0	5/5/0	Flash On																

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AUX. Events

Event	Program Day	Hour	Min.	Aux Ouputs 1	2	3	Det. Diag. D1	Det. Rpt. D2	Det. Mult100 D3	Dimming	Special Function Outputs 1	2	3	4	5	6	7	8
1	1	0	1				X	X										
2	1	6	0					X										
3	1	18	0				X	X										
4	2	0	1				X	X										
5	2	6	0					X										
6	2	18	0				X	X										
7	7	0	1				X	X										
8	7	6	0					X										
9	7	18	0				X	X										

Default Data - No Special Day(s) or Week(s) Programmed

Special Functions

Function	SF1	SF2	SF3	SF4	SF5	SF6	SF7	SF8
Special Function 1	X							
Special Function 2		X						
Special Function 3			X					
Special Function 4				X				
Special Function 5					X			
Special Function 6						X		
Special Function 7							X	
Special Function 8								X

Phase Function

Phase Function Map	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
Phase 1 Max2	X															
Phase 2 Max2		X														
Phase 3 Max2			X													
Phase 4 Max2				X												
Phase 5 Max2					X											
Phase 6 Max2						X										
Phase 7 Max2							X									
Phase 8 Max2								X								
Phase 1 Phase Omit									X							
Phase 2 Phase Omit										X						
Phase 3 Phase Omit											X					
Phase 4 Phase Omit												X				
Phase 5 Phase Omit													X			
Phase 6 Phase Omit														X		
Phase 7 Phase Omit															X	
Phase 8 Phase Omit																X

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Dimming Data

Channel	Red	Yellow	Green	Alternate
	☐	☐	☐	☐

Default Data - No Dimming Programmed

Preemption Data

General Preemption Data

Ring	Min Grn/Walk Time
1	10
2	10
3	10
4	10

Flash > Preepmt 1
Preepmt 1 > Preempt 2
Preepmt 2 = Preempt 3
Preepmt 3 = Preempt 4
Preepmt 4 = Preempt 5
Preepmt 5 = Preempt 6

Preempt Timers

Preempt	Non-Locking	Link to Preempt	Delay	Extend	Duration	MaxCall	Lock-Out	Select			Track				Dwell	Return		
								Ped Clear	Yel	Red	Grn	Ped	Yel	Red	Green	Ped Clear	Yel	Red
1	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0
2	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0
3	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0
4	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0
5	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0
6	No	0	0	0	0	0	0	8	4.0	2.0	10	8	4.0	2.0	10	8	4.0	2.0

Preempt 1			Preempt 2			Preempt 3			Preempt 4			Preempt 5			Preempt 6		
Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls
1	No	Yes	1	No	Yes	1	No	Yes	1	No	Yes	1	No	Yes	1	No	Yes
2	No	Yes	2	No	Yes	2	No	Yes	2	No	Yes	2	No	Yes	2	No	Yes
3	No	Yes	3	No	Yes	3	No	Yes	3	No	Yes	3	No	Yes	3	No	Yes
4	No	Yes	4	No	Yes	4	No	Yes	4	No	Yes	4	No	Yes	4	No	Yes
5	No	Yes	5	No	Yes	5	No	Yes	5	No	Yes	5	No	Yes	5	No	Yes
6	No	Yes	6	No	Yes	6	No	Yes	6	No	Yes	6	No	Yes	6	No	Yes
7	No	Yes	7	No	Yes	7	No	Yes	7	No	Yes	7	No	Yes	7	No	Yes
8	No	Yes	8	No	Yes	8	No	Yes	8	No	Yes	8	No	Yes	8	No	Yes

Priority Timers

Priority	Non-Locking	Delay	Extend	Duration	Dwell	Max_Call	Lock-Out	Skip Phases
1	No	0	0	0	0	0	0	0=Do not Skip Phases
2	No	0	0	0	0	0	0	0=Do not Skip Phases
3	No	0	0	0	0	0	0	0=Do not Skip Phases
4	No	0	0	0	0	0	0	0=Do not Skip Phases
5	No	0	0	0	0	0	0	0=Do not Skip Phases
6	No	0	0	0	0	0	0	0=Do not Skip Phases

Priority 1			Priority 2			Priority 3			Priority 4			Priority 5			Priority 6		
Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls	Phase	Exit Phase	Exit Calls

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Preempt 1

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph	Track	Dwell	Cycle	Ovlp	Track	Dwell	Cycle
Default Data				**Default Data**				**Default Data**			

Preempt 2

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
Default Data				**Default Data**				**Default Data**			

Preempt 3

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
Default Data				**Default Data**				**Default Data**			

Preempt 4

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
Default Data				**Default Data**				**Default Data**			

Preempt 5

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
Default Data				**Default Data**				**Default Data**			

Preempt 6

Vehical Phases				Pedestrian Phases				Overlaps			
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle
Default Data				**Default Data**				**Default Data**			

System/Detectors Data

Local Critical Alarms

Revert to Backup: 15 1st Phone: 2395135428

Local Free: No Cycle Failure: No Coord Failure: No Conflict Flash: Yes Remote Flash: No 2nd Phone:

Local Fash: No Cycle Fault: No Coord Fault: No Premption: No Voltage Monitor: Yes

Special Status 1: No Special Status 2: No Special Status 3: No Special Status 4: No Special Status 5: No Special Status 6: No

Traffic Responsive

System Detector	Detector Channel	Veh/Hr	Average Time(mins)	Occupancy Correction/10	Min Volume %	Queue 1 Detectors	System Detectors	Weight Factor	Queue 2 Detectors	System Detectors	Weight Factor
Default Data							**Default Data**			**Default Data**	

Sample Interval:

Queue: 1 Input Selection: 0=Average

Detector Failed Level : 0

Queue: 2 Input Selection: 0=Average

Detector Failed Level : 0

Queue:			
Level	Enter	Leave	Dial / Split / Offset
			/ /

Default Data

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Vehical Detector

Diagnostic Value 0

Detector	Max Presence	No Activity	Erratic Count
1	30	180	60
2	30	180	60
3	30	180	60
4	30	180	60
5	30	180	60
6	30	180	60
7	30	180	60
8	30	180	60
9	30	180	60
10	30	180	60
11	30	180	60
12	30	180	60
13	30	180	60
14	30	180	60
15	30	180	60

Vehical Detector

Diagnostic Value 1

Detector	Max Presence	No Activity	Erratic Count
1	30	180	60
2	30	180	60
3	30	180	60
4	30	0	60
5	30	0	60
6	30	180	60
7	30	0	60
8	30	180	60
9	30	180	60
10	30	180	60
11	30	180	60
12	30	180	60
13	30	180	60
14	30	180	60
15	30	0	60

Special Detector

Diagnostic Value 0

Detector	Max Presence	No Activity	Erratic Count

Default Data - No Diag 0 Valu

Pedestrian Detector

Diagnostic Value 0

Detector	Max Presence	No Activity	Erratic Count
1	5	0	0
2	5	0	0
3	5	0	0
4	5	0	0
5	5	0	0
6	5	0	0
7	5	0	0
8	5	0	0

Default Data - No Diag 0 Values

Pedestrian Detector

Diagnostic Value 1

Detector	Max Presence	No Activity	Erratic Count
1	5	0	0
2	5	0	0
3	5	0	0
4	5	0	0
5	5	0	0
6	5	0	0
7	5	0	0
8	5	0	0

Default Data - No Diag 1 Values

Special Detector

Diagnostic Value 1

Detector	Max Presence	No Activity	Erratic Count

Default Data - No Diag 1 Values

Speed Trap Data

Speed Trap:

Measurement:

Detector 1	Detector_2	Distance :

Dial/Split/Offset	Speed Trap Low Treshold	Speed Trap High Treshold
//		

Default Data

Default Data

Volume Detector Data

Volume Detector Number	Report Interval Controller Detector Channel
9	9
10	10
11	11
13	12
14	13
15	14

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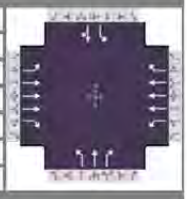
Appendix H: Intersection HCS Printouts

(4 Sheets)

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	CM	Analysis Date	May 25, 2016	Area Type	Other
Jurisdiction		Time Period		PHF	0.93
Urban Street	US 41	Analysis Year	2015	Analysis Period	1> 7:00
Intersection	US 41 & Price/ Triangle	File Name	2015 Backgr - PM Pk Hr - 05-25-2016.xus		
Project Description	2015 Backgr - PM Pk Hr				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	185	971	71	17	906	65	121	140	67	164	74	183

Signal Information												
Cycle, s	140.0	Reference Phase	2									
Offset, s	0	Reference Point	Begin	Green	27.0	29.0	16.0	22.0	9.0	21.0		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	0.0	4.0	4.0	4.0	0.0	4.0		
Force Mode	Fixed	Simult. Gap N/S	Off	Red	0.0	0.0	0.0	0.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2	7	4	3	8
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	4.0
Phase Duration, s	27.0	60.0	20.0	53.0	26.0	25.0	35.0	34.0
Change Period, ($Y+R_c$), s	0.0	4.0	4.0	4.0	4.0	4.0	0.0	4.0
Max Allow Headway (*MAH*), s	3.0	0.0	3.0	0.0	3.0	3.0	3.0	3.2
Queue Clearance Time (g_s), s	16.3		3.3		11.1	12.2	13.3	23.6
Green Extension Time (g_e), s	0.2	0.0	0.0	0.0	0.1	0.2	0.3	0.3
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	0.00		0.00		0.00	0.00	0.00	0.07

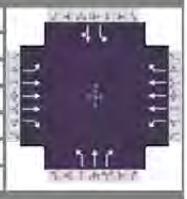
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	199	1044	76	18	974	70	130	151	72	176	276	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1691	1579	1774	1691	1579	1810	1900	1610	1810	1684	
Queue Service Time (g_s), s	14.3	21.8	3.2	1.3	21.6	2.6	9.1	10.2	5.6	11.3	21.6	
Cycle Queue Clearance Time (g_c), s	14.3	21.8	3.2	1.3	21.6	2.6	9.1	10.2	5.6	11.3	21.6	
Green Ratio (*g/C*)	0.19	0.40	0.56	0.11	0.35	0.60	0.16	0.15	0.15	0.25	0.21	
Capacity (*c*), veh/h	342	2030	880	203	1776	947	284	285	242	452	361	
Volume-to-Capacity Ratio (*X*)	0.581	0.514	0.087	0.090	0.549	0.074	0.458	0.528	0.298	0.390	0.766	
Back of Queue (Q), ft/ln (95 th percentile)	267.5	348	24.6	26.3	351.1	41.9	188.8	216.4	99.3	220.9	378.7	
Back of Queue (Q), veh/ln (95 th percentile)	10.5	13.7	1.0	1.0	13.8	1.7	7.4	8.5	3.9	8.7	14.9	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh	51.4	31.7	2.5	55.5	36.6	11.7	53.6	54.9	7.6	43.6	51.7	
Incremental Delay (d_2), s/veh	1.7	0.9	0.2	0.1	1.2	0.2	0.4	0.9	0.3	0.2	8.6	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	53.0	32.7	2.7	55.6	37.8	11.9	54.0	55.9	7.8	43.8	60.3	
Level of Service (LOS)	D	C	A	E	D	B	D	E	A	D	E	
Approach Delay, s/veh / LOS	34.0	C		36.4	D		45.4	D		53.9	D	
Intersection Delay, s/veh / LOS	38.9						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.5	B	2.3	B	3.4	C	3.4	C
Bicycle LOS Score / LOS	1.2	A	1.1	A	1.1	A	1.2	A

 HCS 2010™ Streets Version 6.80 Generated: 5/25/2016 11:33:10 AM

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	CM	Analysis Date	May 25, 2016	Area Type	Other
Jurisdiction		Time Period		PHF	0.93
Urban Street	US 41	Analysis Year	2015	Analysis Period	1> 7:00
Intersection	US 41 & Price/ Triangle	File Name	2017 Backgr - PM Pk Hr - 05-25-2016.xus		
Project Description	2017 Backgr - PM Pk Hr				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	193	1011	74	18	943	68	126	146	70	171	77	191

Signal Information					EB			WB			NB			SB		
Cycle, s	140.0	Reference Phase	2													
Offset, s	0	Reference Point	Begin	Green	27.0	29.0		16.0	22.0	9.0	21.0					
Uncoordinated	No	Simult. Gap E/W	On	Yellow	0.0	4.0		4.0	4.0	0.0	4.0					
Force Mode	Fixed	Simult. Gap N/S	Off	Red	0.0	0.0		0.0	0.0	0.0	0.0					

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2	7	4	3	8
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	4.0
Phase Duration, s	27.0	60.0	20.0	53.0	26.0	25.0	35.0	34.0
Change Period, ($Y+R_c$), s	0.0	4.0	4.0	4.0	4.0	4.0	0.0	4.0
Max Allow Headway (*MAH*), s	3.0	0.0	3.0	0.0	3.0	3.0	3.0	3.2
Queue Clearance Time (g_s), s	17.0		3.4		11.6	12.7	13.9	24.7
Green Extension Time (g_e), s	0.2	0.0	0.0	0.0	0.1	0.3	0.3	0.3
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	0.00		0.00		0.00	0.01	0.00	0.18

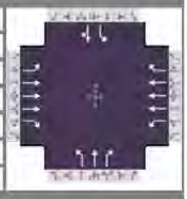
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	208	1087	80	19	1014	73	135	157	75	184	288	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1691	1579	1774	1691	1579	1810	1900	1610	1810	1684	
Queue Service Time (g_s), s	15.0	22.9	3.3	1.4	22.7	2.7	9.6	10.7	5.8	11.9	22.7	
Cycle Queue Clearance Time (g_c), s	15.0	22.9	3.3	1.4	22.7	2.7	9.6	10.7	5.8	11.9	22.7	
Green Ratio (*g/C*)	0.19	0.40	0.56	0.11	0.35	0.60	0.16	0.15	0.15	0.25	0.21	
Capacity (*c*), veh/h	342	2030	880	203	1776	947	284	285	242	452	361	
Volume-to-Capacity Ratio (*X*)	0.607	0.536	0.090	0.095	0.571	0.077	0.476	0.551	0.312	0.406	0.799	
Back of Queue (*Q*), ft/ln (95 th percentile)	279.4	363.3	25.6	27.8	366.2	43.9	196.1	225.4	103.8	229.2	401.2	
Back of Queue (*Q*), veh/ln (95 th percentile)	11.0	14.3	1.0	1.1	14.4	1.7	7.7	8.9	4.1	9.0	15.8	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh	51.6	32.1	2.5	55.5	37.0	11.7	53.8	55.1	7.6	43.8	52.1	
Incremental Delay (d_2), s/veh	2.2	1.0	0.2	0.1	1.3	0.2	0.5	1.3	0.3	0.2	11.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	53.9	33.1	2.7	55.6	38.3	11.9	54.2	56.5	7.9	44.0	63.2	
Level of Service (LOS)	D	C	A	E	D	B	D	E	A	D	E	
Approach Delay, s/veh / LOS	34.5	C		36.9	D		45.7	D		55.8	E	
Intersection Delay, s/veh / LOS	39.5						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.5	B	2.3	B	3.4	C	3.4	C
Bicycle LOS Score / LOS	1.2	A	1.1	A	1.1	A	1.3	A

 HCS 2010™ Streets Version 6.80 Generated: 5/25/2016 11:21:29 AM

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	CM	Analysis Date	May 25, 2016	Area Type	Other
Jurisdiction		Time Period		PHF	0.93
Urban Street	US 41	Analysis Year	2015	Analysis Period	1> 7:00
Intersection	US 41 & Price/ Triangle	File Name	2017 Backgr w PJ - PM Pk Hr - 07-29-2016.xus		
Project Description	2017 Backgr w PJ - PM Pk Hr				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	228	1047	74	134	894	68	211	166	105	166	96	186

Signal Information					EB			WB			NB			SB		
Cycle, s	140.0	Reference Phase	2		L	T	R	L	T	R	L	T	R	L	T	R
Offset, s	0	Reference Point	Begin	Green	27.0	29.0		16.0	22.0	9.0	21.0					
Uncoordinated	No	Simult. Gap E/W	On	Yellow	0.0	4.0		4.0	4.0	0.0	4.0					
Force Mode	Fixed	Simult. Gap N/S	Off	Red	0.0	0.0		0.0	0.0	0.0	0.0					

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2	7	4	3	8
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	4.0
Phase Duration, s	27.0	60.0	20.0	53.0	26.0	25.0	35.0	34.0
Change Period, (*Y*+*R c*), s	0.0	4.0	4.0	4.0	4.0	4.0	0.0	4.0
Max Allow Headway (*MAH*), s	3.0	0.0	3.0	0.0	3.0	3.1	3.0	3.1
Queue Clearance Time (*g s*), s	20.1		13.0		18.9	14.3	13.5	25.9
Green Extension Time (*g e*), s	0.2	0.0	0.1	0.0	0.1	0.3	0.3	0.3
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	0.03		0.98		0.94	0.04	0.00	0.47

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	245	1126	80	144	961	73	227	178	113	178	303	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1691	1579	1774	1691	1579	1810	1900	1610	1810	1698	
Queue Service Time (*g s*), s	18.1	24.0	3.3	11.0	21.3	2.7	16.9	12.3	9.0	11.5	23.9	
Cycle Queue Clearance Time (*g c*), s	18.1	24.0	3.3	11.0	21.3	2.7	16.9	12.3	9.0	11.5	23.9	
Green Ratio (*g/C*)	0.19	0.40	0.56	0.11	0.35	0.60	0.16	0.15	0.15	0.25	0.21	
Capacity (*c*), veh/h	342	2030	880	203	1776	947	284	285	242	452	364	
Volume-to-Capacity Ratio (*X*)	0.717	0.555	0.090	0.711	0.541	0.077	0.798	0.626	0.467	0.395	0.833	
Back of Queue (*Q*), ft/ln (95 th percentile)	337	377.5	25.6	233.2	346	43.9	342.3	256.6	157.3	223.2	430.7	
Back of Queue (*Q*), veh/ln (95 th percentile)	13.3	14.9	1.0	9.2	13.6	1.7	13.5	10.1	6.2	8.8	17.0	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Uniform Delay (*d 1*), s/veh	52.9	32.4	2.5	59.8	36.5	11.7	56.9	55.8	7.8	43.7	52.6	
Incremental Delay (*d 2*), s/veh	6.1	1.1	0.2	9.5	1.2	0.2	13.6	3.2	0.5	0.2	14.4	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	59.0	33.5	2.7	69.3	37.7	11.9	70.5	59.1	8.3	43.9	67.0	
Level of Service (LOS)	E	C	A	E	D	B	E	E	A	D	E	
Approach Delay, s/veh / LOS	36.1	D		39.9	D		53.0	D		58.4	E	
Intersection Delay, s/veh / LOS	42.7						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.5	B	2.3	B	3.4	C	3.4	C
Bicycle LOS Score / LOS	1.3	A	1.1	A	1.3	A	1.3	A

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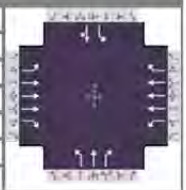
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	CM	Analysis Date	May 25, 2016	Area Type	Other
Jurisdiction		Time Period		PHF	0.93
Urban Street	US 41	Analysis Year	2015	Analysis Period	1> 7:00
Intersection	US 41 & Price/ Triangle	File Name	2017 Backgr w PJ w Cycle Impr - PM Pk Hr - 07-...		
Project Description	2017 Backgr w PJ w Cycle Impr - PM Pk Hr				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	228	1047	74	134	894	68	211	166	105	166	96	186

Signal Information					EB			WB			NB			SB		
Cycle, s	120.0	Reference Phase	2													
Offset, s	0	Reference Point	Begin	Green	27.0	9.0		16.0	23.0	9.0		20.0				
Uncoordinated	No	Simult. Gap E/W	On	Yellow	0.0	4.0		4.0	4.0	0.0		4.0				
Force Mode	Fixed	Simult. Gap N/S	Off	Red	0.0	0.0		0.0	0.0	0.0		0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6	5	2	7	4	3	8
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	4.0
Phase Duration, s	27.0	40.0	20.0	33.0	27.0	24.0	36.0	33.0
Change Period, (*Y+R c*), s	0.0	4.0	4.0	4.0	4.0	4.0	0.0	4.0
Max Allow Headway (*MAH*), s	3.0	0.0	3.0	0.0	3.0	3.1	3.0	3.1
Queue Clearance Time (*g s*), s	16.9		11.2		15.9	12.4	11.2	21.8
Green Extension Time (*g e*), s	0.3	0.0	0.1	0.0	0.2	0.3	0.3	0.4
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	0.00		0.12		0.02	0.02	0.00	0.04

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	7	4	14	3	8	18
Adjusted Flow Rate (*v*), veh/h	245	1126	80	144	961	73	227	178	113	178	303	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1774	1691	1579	1774	1691	1579	1810	1900	1610	1810	1698	
Queue Service Time (*g s*), s	14.9	24.0	3.2	9.2	21.3	2.7	13.9	10.4	7.5	9.2	19.8	
Cycle Queue Clearance Time (*g c*), s	14.9	24.0	3.2	9.2	21.3	2.7	13.9	10.4	7.5	9.2	19.8	
Green Ratio (*g/C*)	0.22	0.30	0.49	0.13	0.24	0.54	0.19	0.17	0.17	0.30	0.24	
Capacity (*c*), veh/h	399	1522	776	237	1226	855	347	317	268	543	410	
Volume-to-Capacity Ratio (*X*)	0.614	0.740	0.103	0.609	0.784	0.086	0.654	0.564	0.421	0.329	0.739	
Back of Queue (*Q*), ft/ln (95 th percentile)	273.4	385.7	23.9	191.4	358.3	43.2	267.9	216.4	129.7	179.5	344.1	
Back of Queue (*Q*), veh/ln (95 th percentile)	10.8	15.2	0.9	7.5	14.1	1.7	10.5	8.5	5.1	7.1	13.5	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Uniform Delay (*d 1*), s/veh	41.8	37.8	3.2	49.1	42.6	13.2	44.8	46.0	8.7	32.6	42.0	
Incremental Delay (*d 2*), s/veh	2.1	3.3	0.3	3.3	5.1	0.2	3.5	1.4	0.4	0.1	6.1	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	43.9	41.0	3.5	52.3	47.6	13.4	48.3	47.4	9.1	32.7	48.1	
Level of Service (LOS)	D	D	A	D	D	B	D	D	A	C	D	
Approach Delay, s/veh / LOS	39.5	D		46.1	D		39.5	D		42.4	D	
Intersection Delay, s/veh / LOS	42.0						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.5	B	2.3	B	3.4	C	3.4	C
Bicycle LOS Score / LOS	1.3	A	1.1	A	1.3	A	1.3	A

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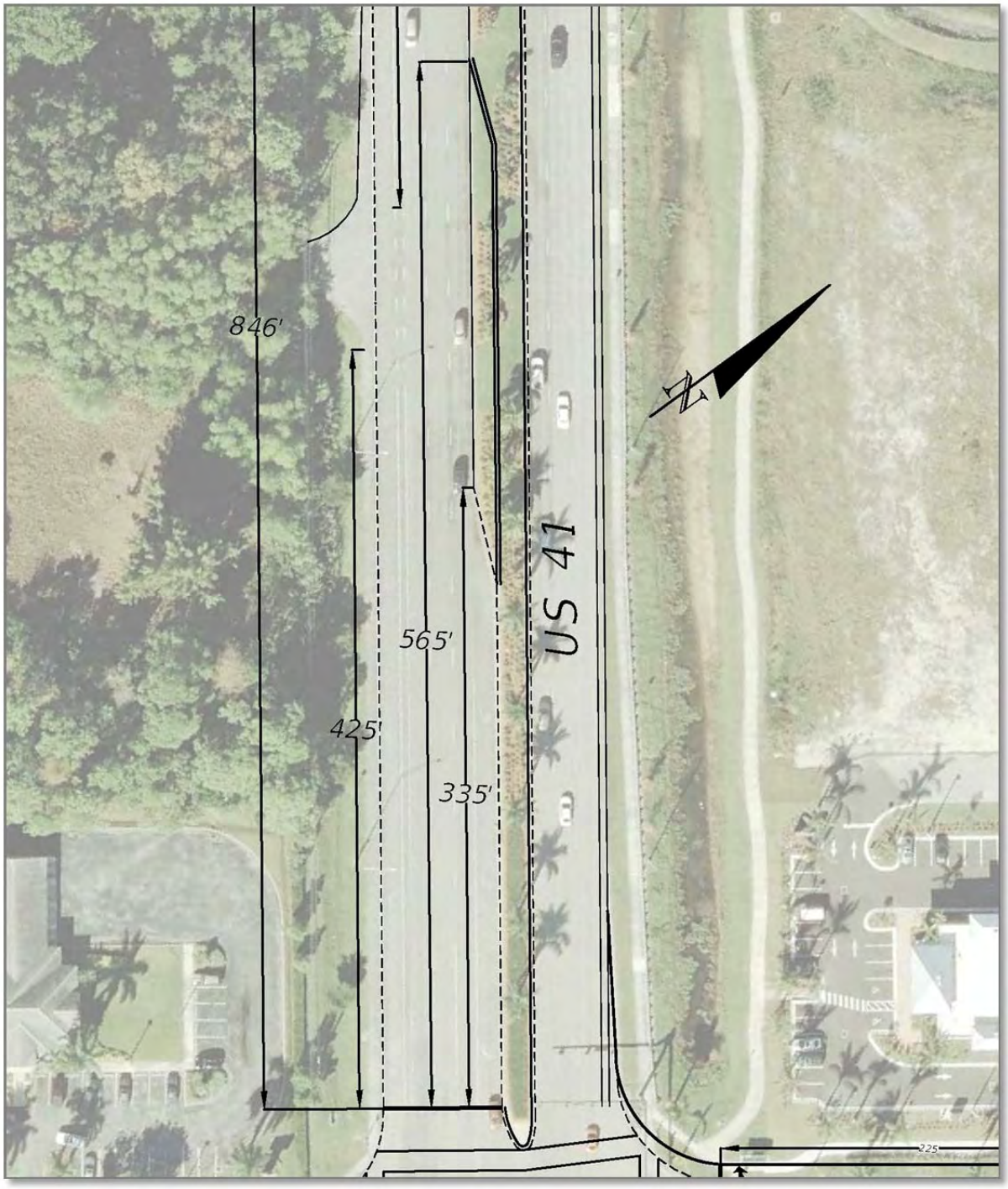
Appendix I: Proposed Intersection Improvements

(3 Sheets)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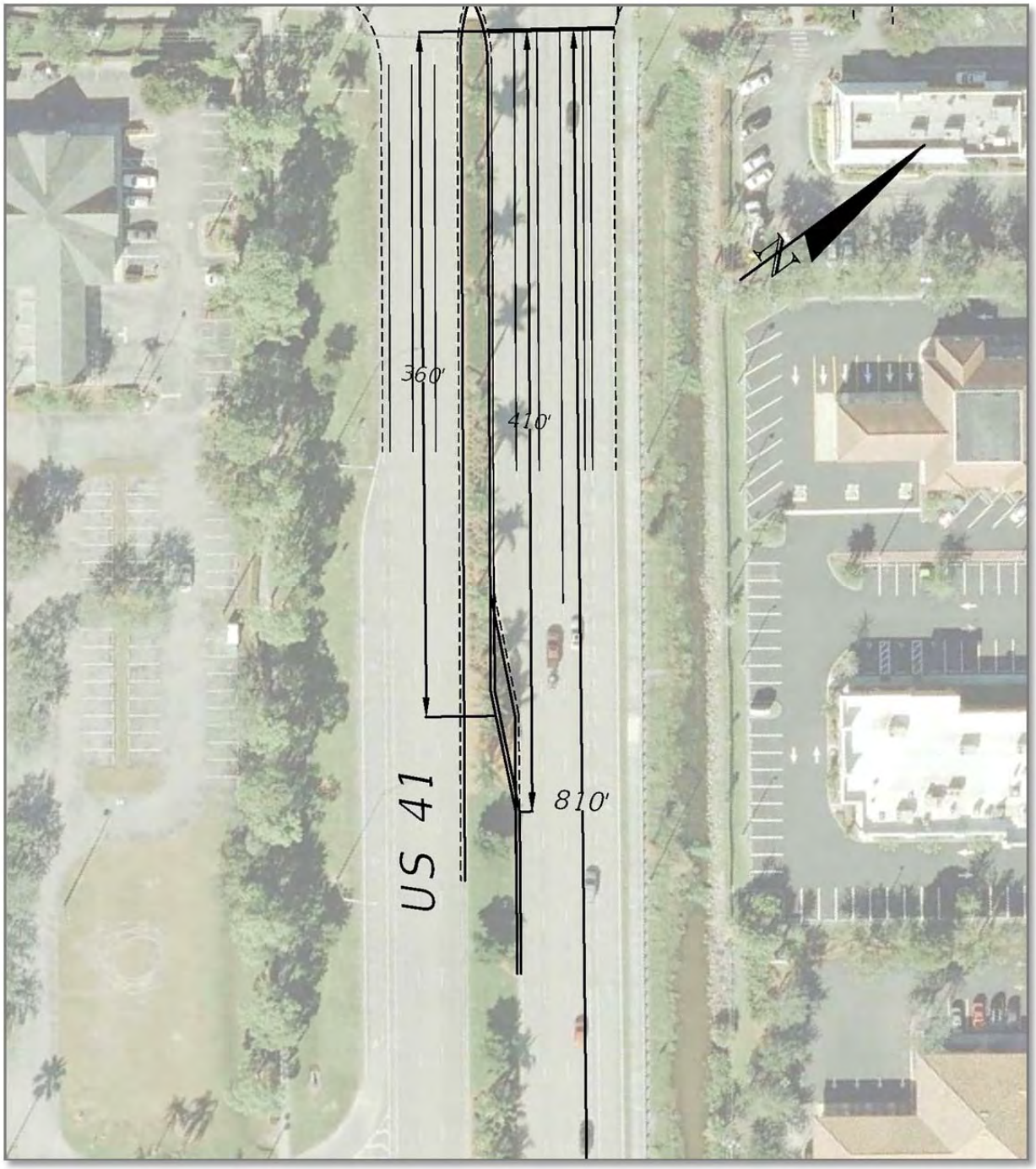
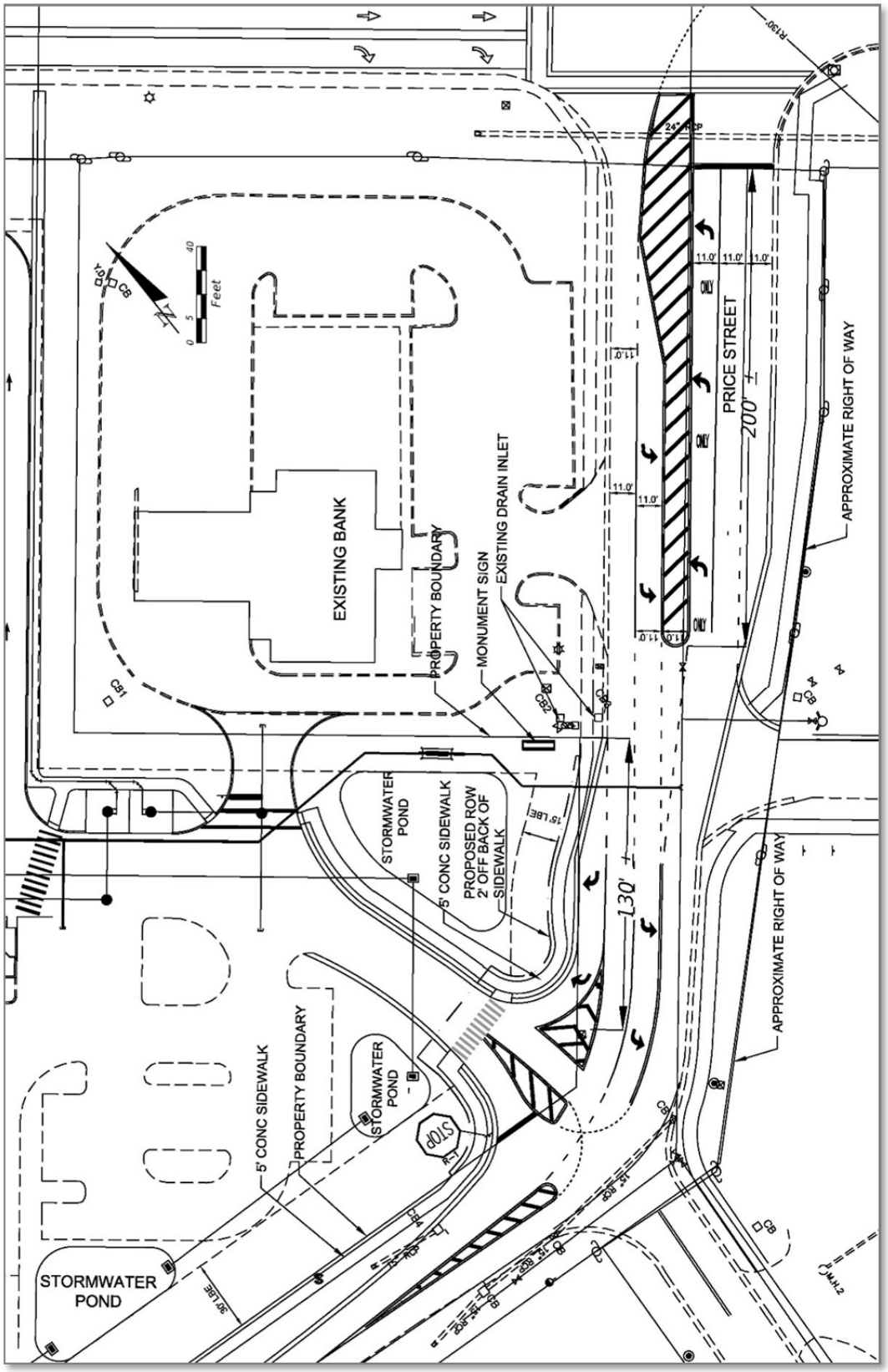
425'
335'
US 41
225'


360'
410'
US 41
810'


EXISTING BANK
PROPERTY BOUNDARY
MONUMENT SIGN
EXISTING DRAIN INLET
PRICE STREET
200' ±
APPROXIMATE RIGHT OF WAY
STORMWATER POND
5' CONC SIDEWALK
PROPOSED ROW 2' OFF BACK OF SIDEWALK
130' ±
APPROXIMATE RIGHT OF WAY
STORMWATER POND
5' CONC SIDEWALK
PROPERTY BOUNDARY
STORMWATER POND
STOP
Feet
11.0'
ONLY