

Council Meeting of Aug 24, 2016
Agenda Item No. 7.d.

REQUEST FOR COUNCIL ACTION

SUBJECT: Appeal of Impact Fees Paid for Overland Storage.

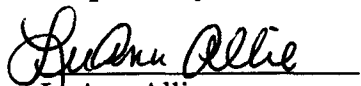
SUMMARY: Overland Storage LLC is a proposed Self Storage Facility at 9372 Prosperity Road and has requested a reduction in impact fees based on the estimated lowered impact of the development. Two separate analyses were conducted and submitted at the City's request to provide written documentation in support of an impact fee adjustment.

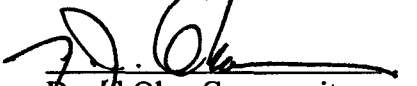
FISCAL AND OR ASSET IMPACT: If approved the city will receive a deficit of \$74,962.93 from account #443824.

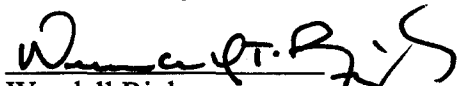
STAFF RECOMMENDATION:
The study by Tischler/Bise adjusts the road fee only and leaves the fire and police fee the same. If approved this would then provide a reimbursement to Overland Storage LLC, in the amount of \$74,962.93. It is at the discretion of the City Council to allow modification or reductions to fees and determine if such fees are in excess of the percentage of reasonable costs set forth in City Code.

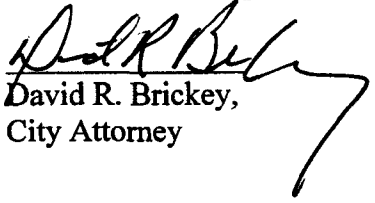
MOTIONS RECOMMENDED:
Move to approve Resolution 16-125 authorizing staff to pay the reimbursement to Overland Storage LLC in the amount of \$74,962.93.

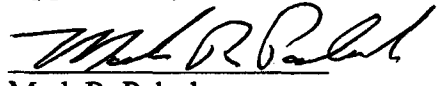
Move to deny Resolution 16-125 authorizing staff to pay the reimbursement to Overland Storage LLC in the amount of \$74,962.93.

Prepared by:

LuAnn Allie
ODA Dev Coordinator

Reviewed by:

David Oka, Community
and Economic Development
Director

Concurred by:

Wendell Rigby
Public Works Director

Reviewed as to legal form:

David R. Brickey,
City Attorney

Approved by:

Mark R. Palesh,
City Manager

BACKGROUND DISCUSSION: Overland Storage is a self storage land use being constructed in West Jordan at 9372 Prosperity Road and does not fit the typical industrial road impact fee category currently utilized by the City to assess fees for future improvements. The owners of the Overland Storage approached the City Staff about reducing the fees based on the non-standard type of land use being constructed on this property. Because of its unique characteristics, impact fees can be adjusted so that they more accurately reflect the true demands placed by new development on roads, water, sewer, storm water, police and fire/EMS capital facilities.

Typically, roadway impact fees are based on average daily traffic volumes due to the methodology followed to identify future municipal needs. The typical process includes the development of a Transportation Master plan which identifies new roads, and widening projects to narrow the gap between the existing transportation demand and the future demand (daily trips), on a city-wide basis. This process is completed utilizing a travel demand model, in the case of the Salt Lake Valley, most municipalities will use the Wasatch Front Regional Council's (WFRC) travel demand model as the backbone for this analysis. On occasion, a municipality will refine the model with updated land uses and planned roadway improvements, some of which are constructed by development. Following completion of the Transportation Master Plan, an Impact Fee Facilities Plan and an Impact Fee Analysis will be completed to identify a cost attributable to new development to cover the projected future improvements.

When a review of the Jordan Valley Station TOD site was completed by Hales Engineering in 2010, roadway impact fees in West Jordan were being assessed on a daily trip basis and impact fees were lowered to account for the lower impact of a mixed use transit oriented development, based on the fact that they would generate less traffic than a standard development.

The same premise can be applied to Overland Storage LLC. Due to limited number of categories associated with the West Jordan Impact Fee schedule, Overland Storage roadway impact fees were calculated on a square foot basis of "Industrial" land use and totaled \$108,341.93. For comparison purposes, Tischler/Bise used the ITE Trip Generation Manual (9th edition, 2012) to calculate the trips for the proposed facility. Using ITE's weekday trip generation rate of 2.50 trip ends per 1,000 square feet of gross floor area specified under ITE Code 151: Mini-Warehousing, they calculated a total of 206 (rounded) trips per weekday for a facility with 82,452 gross square feet (82,452 sq. Ft. / 1,000 X 2.50 trips). With a standard 50% trip adjustment rate, total trips generated is multiplied by West Jordan's average miles per vehicle trip (5.22), cost per vehicle mile of travel (\$82.84), and trip length adjustment factor from the 2001 National Household Travel Survey for "Other Family/Personal Errands" (75%), resulting in a total Road fee of \$33,379 (truncated).



INVOICE

7/11/2016

Office of Development Assistance

8000 S Redwood Road
West Jordan, UT 84088
Phone: (801) 569-5180

Application: 10084

HOLMAN, BRIAN
9372 SOUTH PROSPERITY DRIVE
WEST JORDAN, UT 84088
801-731-9990

OVERLAND STORAGE
SITE PLAN

<u>FEE DESCRIPTION</u>	<u>QUANTITY</u>	<u>FEE AMOUNT</u>	<u>AMOUNT PAID</u>
ENG REVIEW FEE APPLICATION	0.00	1,000.00	1,000.00
4% OF BOND AMOUNT	54,641.00	2,185.64	2,185.64
ENG STREET LIGHT FEE	1.00	18.00	18.00
IMPACT FEE FIRE IND	82,452.00	14,758.91	14,758.91
IMPACT FEE POLICE INDUSTRIAL	82,452.00	4,287.50	4,287.50
IMPACT FEE ROAD INDUSTRIAL	82,452.00	108,341.93	108,341.93
IMPACT FEE SEWER .75	1.00	1,333.00	1,333.00
IMPACT FEE WATER .75	1.00	1,922.00	1,922.00
STORM DRAIN IMPACT INDUSTRIAL	3.71	44,820.51	44,820.51
SITE COMM / INDUST PRELIMINARY	3.71	1,705.20	1,705.20
SITE PLAN COMM/INDUST FINAL	3.71	1,845.20	1,845.20
WATER METER CONNECT 3/4" CULLI	1.00	288.45	288.45
WATER METER 3/4" DETECT-A-CHEC	2.00	576.90	576.90
WATER METER 1" LANDSCAPING	1.00	395.55	395.55

Total Fees: \$183,478.79

Total Paid \$183,478.79

Unpaid Balance: \$0.00

THE CITY OF WEST JORDAN, UTAH

A Municipal Corporation

RESOLUTION NO. 16-125

A RESOLUTION AUTHORIZING THE MAYOR TO APPROVE THE APPEAL TO CITY COUNCIL TO REIMBURSE IMPACT FEES IN EXCESS OF THE PERCENTAGE OF REASONABLE COSTS BETWEEN THE CITY OF WEST JORDAN AND OVERLAND STORAGE LLC.

Whereas, the City Council of the City of West Jordan has determined that it is in the best interest of the City to reimburse the impact fees found in excess of the percentage of reasonable costs to be recovered, and

Whereas, the City Council of the City of West Jordan desires that the reimbursement be paid by City Staff; and

Whereas, the Mayor is authorized to execute the reimbursement.

NOW, THEREFORE, IT IS RESOLVED BY THE CITY COUNCIL OF THE CITY OF WEST JORDAN, UTAH, THAT:

Section 1. The City Staff is hereby authorized and directed to reimburse impact fees found in excess of the percentage of reasonable costs of Overland Storage LLC, in the amount of \$74,962.93.

Section 2. This Resolution shall take effect immediately upon passage.

Adopted by the City Council of West Jordan, Utah, this ____ day of _____, 2016.

CITY OF WEST JORDAN

By: _____
Mayor Kim V. Rolfe

ATTEST:

Melanie S. Briggs, City Clerk/Recorder

Voting by the City Council

Jeff Haaga

"AYE"

"NAY"

Zach Jacob

Chris McConnehey

Chad Nichols

Dirk Burton

Sophie Rice

Mayor Kim V. Rolfe

TECHNICAL MEMORANDUM

TO: Stephen Glain, Mgt. Assistant to City Manager
FROM: Carson Bise, President, TischlerBise
DATE: June 28, 2016
RE: Independent Road Impact Fee Study: Proposed Overland Self Storage Facility

Overview and Summary

TischlerBise was asked by City of West Jordan, Utah to conduct an independent impact fee analysis of the proposed Overland Self Storage Facility at 9372 Prosperity Road. TischlerBise is a fiscal, economic, and planning consulting firm specializing in fiscal impact analysis, impact fees, utility rates, and other cost of growth services. We conducted the City of West Jordan's impact fee study (2013). This memorandum summarizes the proposed development; analyzes its potential additional demand on City road facilities; and calculates a total fee.

This individual impact fee study is based on information from a traffic impact study for the facility completed by Project Engineering Consultants (May 19, 2016) and trip generation data from the Institute of Transportation Engineers (ITE) Trip Generation Manual (9th Edition, 2012).

Proposed Development

The applicant proposes developing a self-storage facility with seven storage buildings and an office structure totaling 82,452 square feet. Substantial completion of the facility is anticipated in 2017.

Overview of Impact Fees

Impact fees, also known as facility or development fees, are one-time payments charged to new development that are used to fund capital improvements necessitated by new growth. Impact fees have been utilized by local governments in various forms for at least 50 years. An impact fee represents new growth's fair share of capital facility needs.

There is little federal case law specifically dealing with impact fees, although other rulings on other types of exactions (e.g., land dedication requirements) are relevant. In one of the most important exaction cases, the U. S. Supreme Court found that a government agency imposing exactions on development must demonstrate an "essential nexus" between the exaction and the interest being protected. (See *Nollan v. California Coastal Commission*, 1987.) In a more recent case (*Dolan v. City of Tigard, OR*, 1994), the Court ruled that an exaction also must be "roughly proportional" to the burden created by development. However, the *Dolan* decision appeared to set a higher standard of review for mandatory dedications of land than for monetary exactions such as impact fees.

These constitutional requirements of impact fees are commonly referred to as “rational nexus” test. The rational nexus test has three elements:

Demand – a particular type of development demands a particular type of infrastructure.

Proportionality – the fees are proportionate to the demand created by development for infrastructure.

Benefit – The payer of the impact fee must receive a benefit (i.e., the construction of infrastructure which accommodates their impact on a community’s capital facilities and assets).

Impact fees should be assessed on new development when there is a net increase in the impact, and therefore the demand for additional infrastructure, between existing development and the new development. Additionally, both residential and nonresidential development place demands on a locality’s infrastructure. For instance, a new retail development will increase the number of vehicle trips due to both customers and employees, which in turn results in a need for additional infrastructure capacity.

City of West Jordan Road Impact Fee Program

TischlerBise used the ITE *Trip Generation Manual* (9th Addition, 2012)¹ to calculate the trips for the proposed facility. Using ITE’s weekday trip generation rate of 2.50 trip ends per 1,000 square feet of gross floor area specified under ITE Code 151: Mini-Warehousing, we calculated a total of 206 (rounded) trips per weekday for a facility with 82,452 gross square feet (82,452 sq. ft. / 1,000 X 2.50 trips).² With a standard 50% trip adjustment rate,³ total trips generated is multiplied by West Jordan’s average miles per vehicle trip (5.22), cost per vehicle mile of travel (\$82.84), and trip length adjustment factor from the 2001 National Household Travel Survey for “Other Family/Personal Errands” (75%), resulting in a total Road fee of \$33,379 (truncated). Please see Figure 1 for this calculation.

Figure 1. Roads Fee

Roads				
Average Miles per Vehicle Trip	5.22			
Cost per Vehicle Mile of Travel	\$82.84			
	Weekday Vehicle Trip Ends	Trip Rate Adjustment Factors	Trip Length Adjustment Factor	Total Fee
ITE 151: Mini-Warehouse	206	50%	75%	\$33,379

¹ TischlerBise’s 2013 impact fee study used ITE’s previous edition of the *Trip Generation Manual* (8th Addition, 2008) to calculate trip ends. This individual impact fee study makes use of the latest trip generation rate data.

² Please note that Project Engineering Consultants’ May 19, 2016 traffic impact study erroneously references ITE Code 220 for Mini-Warehouse, but uses the correct weekday vehicle trip ends per 1,000 gross square feet rate of 2.50.

³ A vehicle trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). To calculate road impact fees, trip generation rates are adjusted to avoid double counting each trip at both the origin and destination points. A basic trip adjustment factor of 50% is applied to most industrial land use categories because trip ends are highly unlikely to occur due to pass-by effects on the way to a different primary destination (which would lower the lower the trip adjustment rate and subsequently decrease the trip end rate).

Please note that this analysis is based on the particular situation and set of assumptions described above and does not include an assessment/recommendation of any other issue, which may include other potential future development within City limits that may or may not result in an increase in demand for City infrastructure.



Traffic Impact Study

Overland Self Storage

Submitted To:

Overland Group, Inc.
6575 South Redwood Road, Suite 102
Salt Lake City, Utah 84123

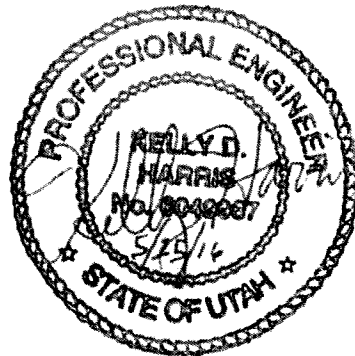
Submitted By:

Project Engineering Consultants, Ltd.
986 West 9000 South
West Jordan, Utah 84088
801-495-4240

May 19, 2016

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Executive Summary

The proposed Overland Self Storage development is located in West Jordan, Utah at approximately 9372 Prosperity Road on the west side of the road. The development consists of seven storage buildings, an office building, and eight parking stalls.

Substantial completion of the development is anticipated by the end of 2017.

The level-of-service (LOS) analyses of the two study intersections, Prosperity Road and Dannon Way, and Prosperity Road and Wells Park Road, indicates that the intersections will continue to operate at the same LOS B when the development is completed in 2017.

The turning movements at the driveway will operate at a LOS B during peak periods.

I. Introduction

Mr. Brian Holman of Overland Group, Inc. contracted with Project Engineering Consultants, Ltd. (PEC) to perform a traffic impact study for the proposed Overland Self Storage located at approximately 9372 Prosperity Road in West Jordan, Utah (See Figure 1). The development consists of seven storage buildings, an office, and eight parking stalls and substantial completion of the development is anticipated in 2017. The objective of this study is to determine the effects of the proposed land development on the surrounding intersections.

II. Level of Service (LOS) Standards

An assessment and intersection analysis was performed for the existing traffic conditions to quantify the impact that the proposed development will have on the nearby intersections. Utilizing the analysis methodology outlined in the *Highway Capacity Manual*, the intersections are given a LOS from A through F. LOS is a qualitative measurement for operational conditions within a traffic stream and the perception by motorists and/or pedestrians. A LOS is generally described with these conditions in terms of factors, such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. There are six levels of service describing these conditions (ranging from A to F), which have been standardized by the Transportation Research Board. LOS A represents a free-flowing traffic condition where motorists are affected minimally by other motorists; a high degree of freedom to select desired speeds and the level of comfort and convenience to the motorist is excellent. LOS F is characterized by congested flow conditions with stoppages; the amount of traffic approaching a point exceeds the amount that can pass that point.

The various levels of service, and associated delay relationships, are summarized for unsignalized intersections in Table 1.

Table 1: Unsignalized Intersections LOS and Delay Summary

LOS	Delay
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Source: *Highway Capacity Manual*, 19-2

Generally, LOS D (or higher) during the peak hour is considered an acceptable LOS in West Jordan. At LOS D, motorists have little (if any) freedom to choose speeds or lanes of travel and experience some discomfort, inconvenience, and delay.

Consistent with industry standards, the *Trip Generation Manual*, *Highway Capacity Manual*, and Synchro software were used to prepare this traffic study.

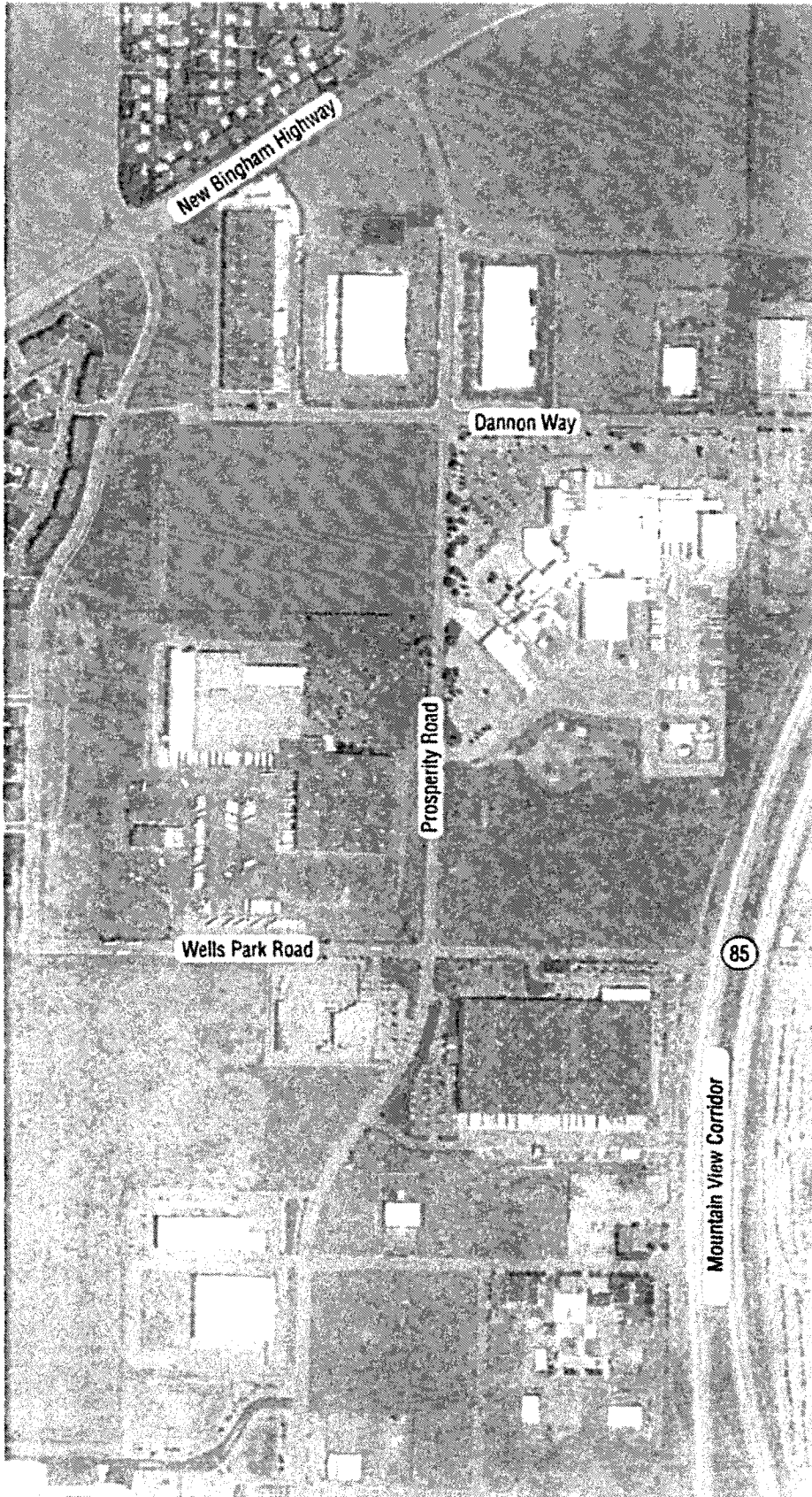
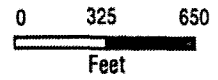


Figure 1:
Vicinity Map

2015 Google Imagery

Proposed Development



III. Existing (2016) Conditions

Physical Characteristics

Prosperity Road is a two-lane north-south collector road that widens at two intersections providing turn lanes (See Figure 2). Dannon Road and Wells Park Road provide access to the local developments located in the area.

Study Intersections

Two intersections in the study area were selected for analysis. They are:

- Prosperity Road and Dannon Way – four-leg intersection with two-way stop control on Dannon Way.
- Prosperity Road and Wells Park Road – four-leg intersection with two-way stop control on Wells Park Road.

Traffic Counts

PEC gathered counts of existing traffic volumes at Dannon Way and Wells Park Road intersections with Prosperity Road on May 10–11, 2016 between the hours of 7:00 a.m.–9:00 a.m. and 4:00 p.m.–6:00 p.m. (see Appendix A: Traffic Volumes). Collected data is illustrated in Figure 3.

Existing (2016) LOS Analysis

The existing turning movement volumes from the intersections included within the study area were analyzed using methodologies found in the latest edition of the *Highway Capacity Manual* to establish the baseline LOS. The turning movement volumes shown in Figure 3 were used to analyze the 2016 existing traffic conditions. Based on the data collected during the traffic counts, the percentage of heavy vehicles at the existing intersections varied during the a.m. and p.m. peak hours, and was applied as a representative number of expected percentage of heavy vehicles in future scenarios. The peak hour factor (PHF) from the traffic counts was also used for all intersections in existing and future analyses. The Synchro analysis results at each intersection for the 2016 existing conditions are summarized in Table 3.

III. Proposed Development

The Overland Self Storage development is planned on the west side of Prosperity Road and the south side of Dannon Way. The proposed layout of the seven storage buildings and office building are illustrated in Figure 4.

Trip Generation

The number of project trips for the proposed development were calculated using land-use rates published in the *Trip Generation Manual*. Land-use code 220 was applied for the storage units and site office. The trips generated by the proposed development are summarized in Table 2.

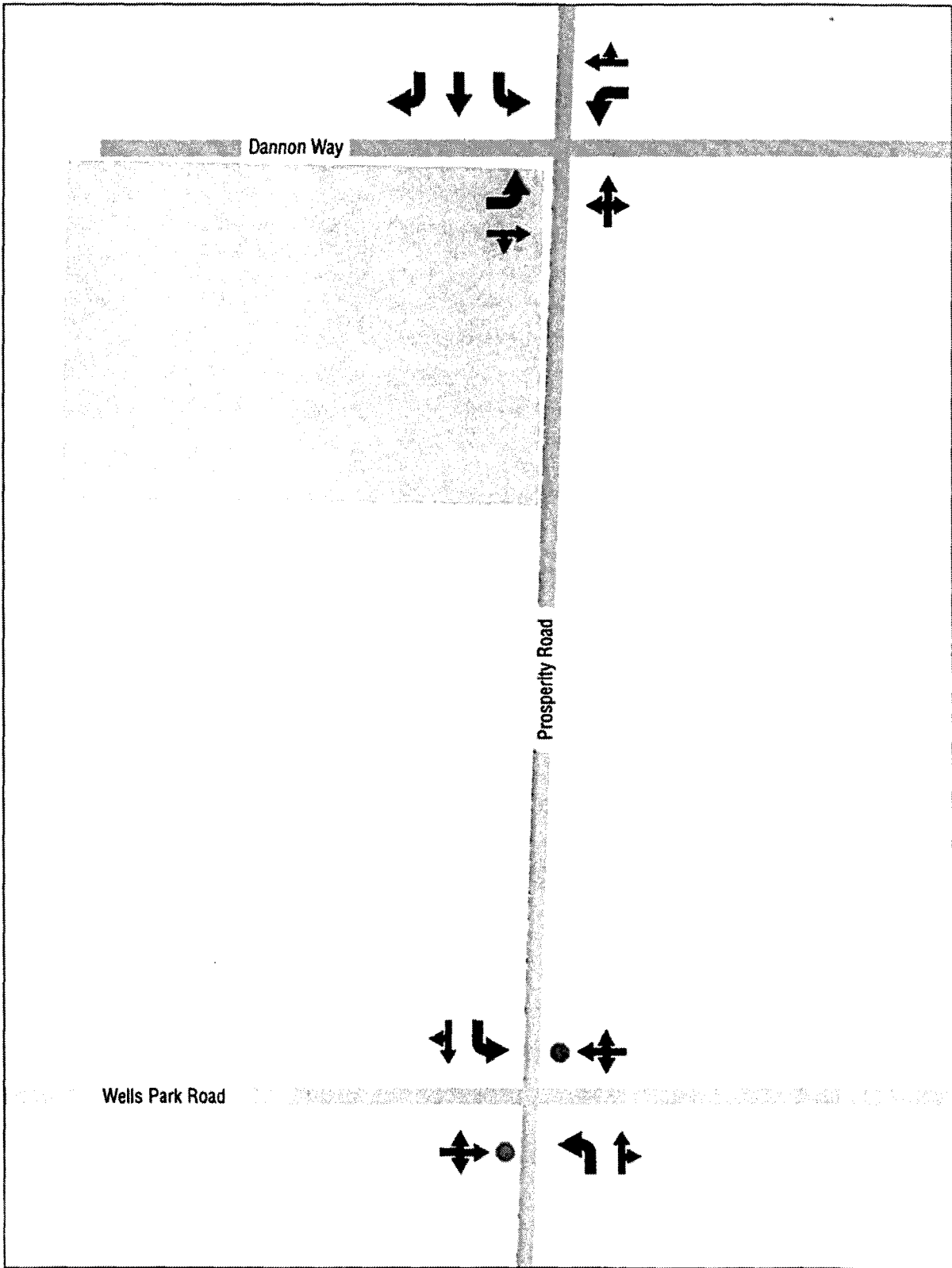


Figure 2:
Existing Roadway and Traffic
Control Features

- Stop Sign
- ▨ Proposed Development



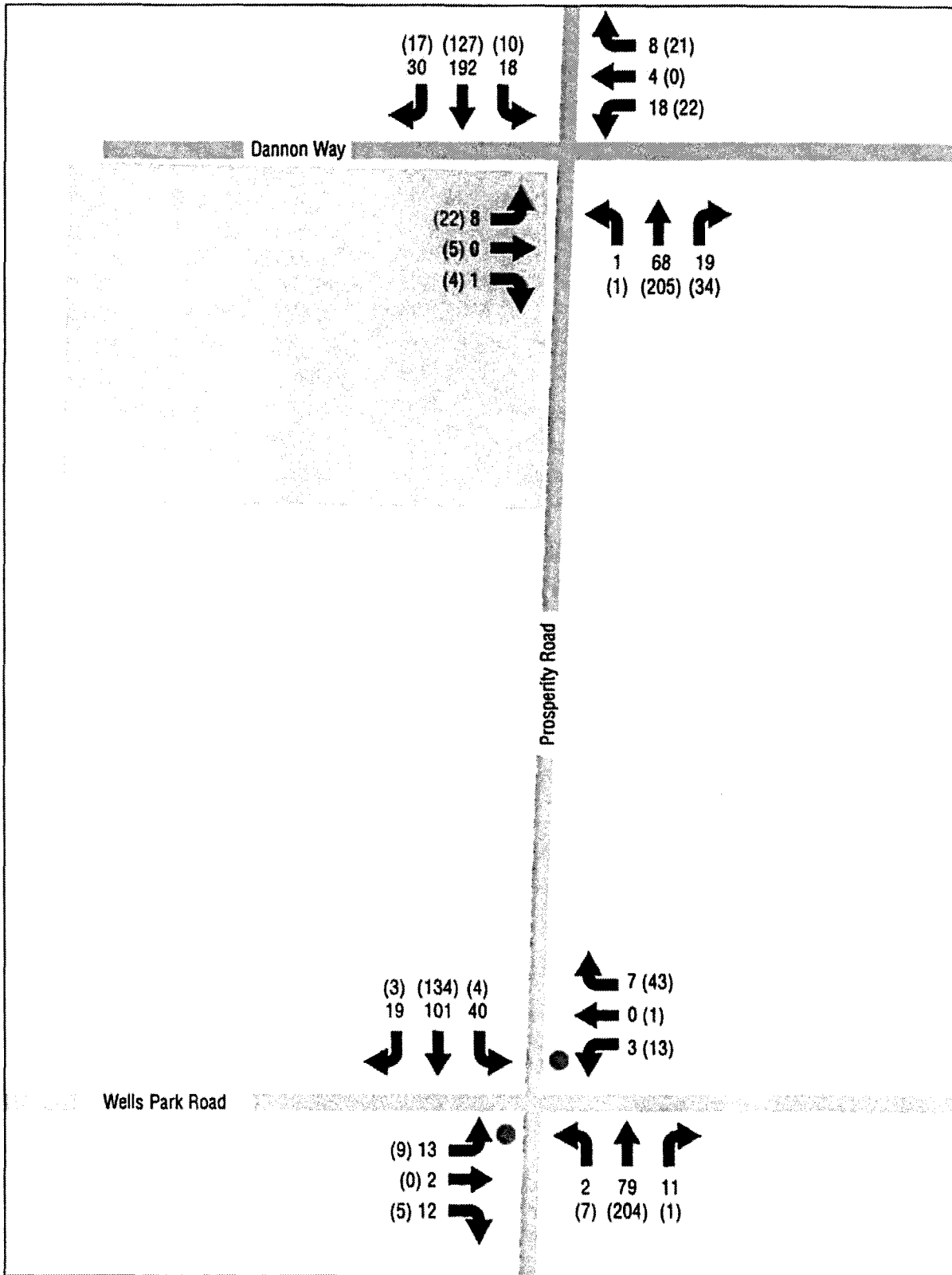


Figure 3:
2016 Peak Hour
Traffic Volumes

● Stop Sign
 ○ Proposed Development
 X AM Peak Hour Volume
 (X) PM Peak Hour Volume



bruce jordan architect
 171 Oak Mills, Suite 100
 San Clemente, CA 92673-7541
 Telephone: (949) 398-6000
 Facsimile: (949) 398-6290



OVERLAND GROUP, INC.

4075 S. BROWWOOD BLVD. #200
 SALT LAKE CITY, UT 84119

OVERLAND STORAGE

1572 PROSPERITY RD.
 WEST JORDAN, UT 84088

SITE PLAN

PROJECT NUMBER	1572
DATE	02/20/06
DESIGNER	B-J/A
CLIENT	OVERLAND STORAGE
PROJECT NAME	1572 PROSPERITY RD.
SHEET NUMBER	1

A1.1

GENERAL NOTES

1. THE SITE PLAN IS TO BE USED IN CONJUNCTION WITH THE ARCHITECTURAL AND ENGINEERING DRAWINGS.
2. THE SITE PLAN IS TO BE USED TO DETERMINE THE LOCATION OF THE BUILDING AND THE LOCATION OF THE DRIVEWAYS.
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KEY NOTES

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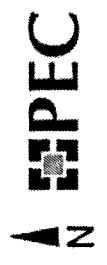
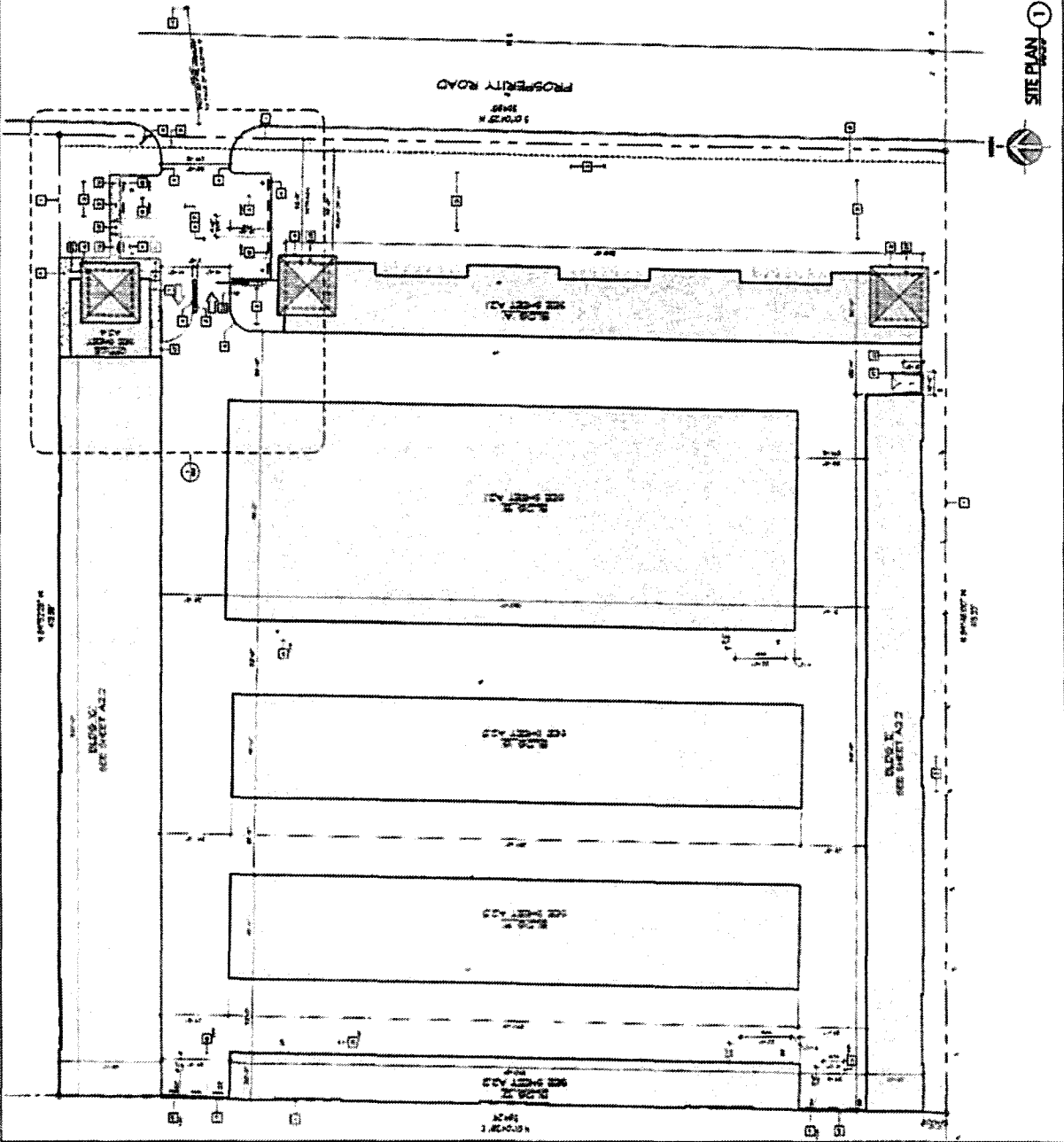
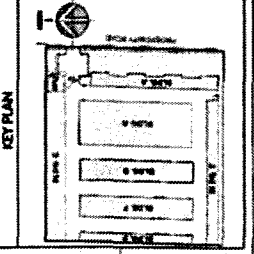
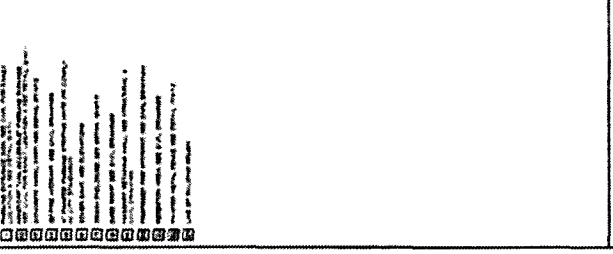


Figure 4:
Site Plan

Table 2: Trip generation of Overland Self Storage development.

Land Use	Number	Weekday Total Trips	Weekday Trips							
			AM				PM			
			Avg. Rate	Total Trips	Entering 55%	Exiting 45%	Avg. Rate	Total Trips	Entering 50%	Exiting 50%
Mini-warehouse (220)	82,452 sq. ft.	206	0.14	12	6	6	0.26	22	11	11

Trip Distribution

The distribution of the generated traffic to the intersections and access point in the study area is illustrated in Figure 5.

Trip Assignment

The traffic assigned to each intersection and the driveway is based on the trip distribution of the project-generated traffic and is illustrated in Figure 6

V. LOS Analysis

The intersections included within the study area were analyzed for the existing and future traffic conditions. Background traffic growth for the area was forecasted forward to 2017 using an assumed two percent annual growth rate and are illustrated in Figure 7. The project traffic volumes and the background traffic volumes used for analyzing the proposed development are illustrated in Figure 8. The Synchro analysis results at each intersection for the various analysis conditions (existing and proposed) are summarized in Table 4. The corresponding Synchro reports can be found in Appendix B: HCM Analyses.

Table 3: Intersection LOS Analyses Results.

Location	Peak Period	Direction Movement	LOS/Delay (sec/veh)*		
			2016	2017 Baseline	2017 w/Project
Prosperity Rd./Dannon Way	AM	EBLT	B/12.9	B/13.0	B/13.1
	PM	EBLT	B/14.1	B/14.2	B/14.5
Prosperity Rd./Wells Park Rd.	AM	EBLT	B/12.0	B/12.1	B/12.2
	PM	EBLT	B/12.9	B/13.1	B/13.2
Prosperity Rd./Driveway	AM	EBLT			B/10.5
	PM	EBLT			B/11.5

Note: For stop-controlled intersections, LOS is not provided for the entire intersection because certain movements are not required to stop. As a result, the movement or approach with the significant delay is included in the table.

*Delay is measured in seconds/vehicle; EBLT = eastbound left

Currently, the eastbound left-turn movement operates at LOS B during the a.m. and p.m. peak periods at both study intersections. These intersections will continue operating at the same LOS with the normal growth of traffic and with the additional trips generated by the proposed development in 2017. Once the development is completed, the driveway will function at a LOS B during the a.m. and p.m. peak periods.

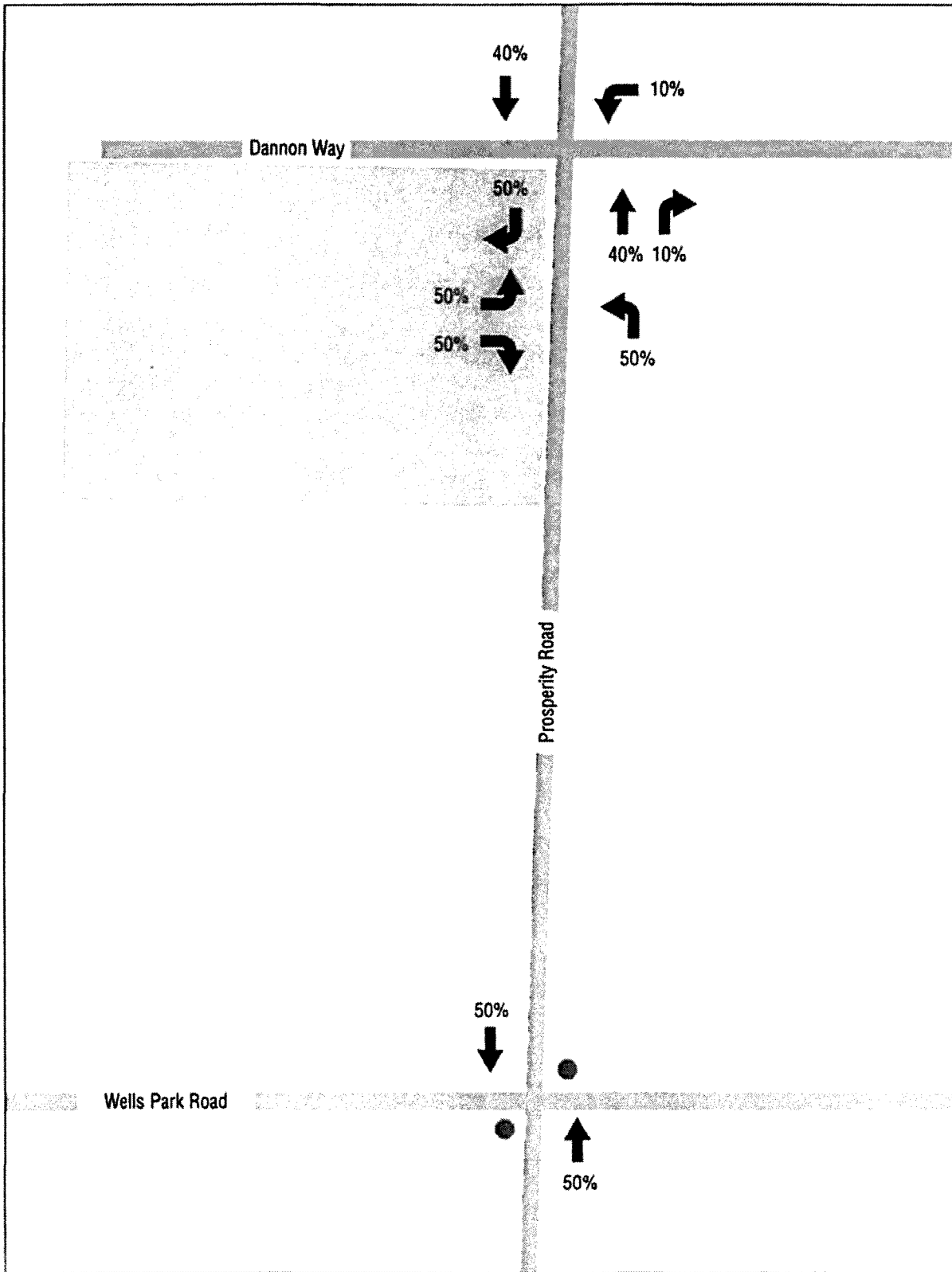


Figure 5:
Trip Distribution

● Stop Sign
● Proposed Development



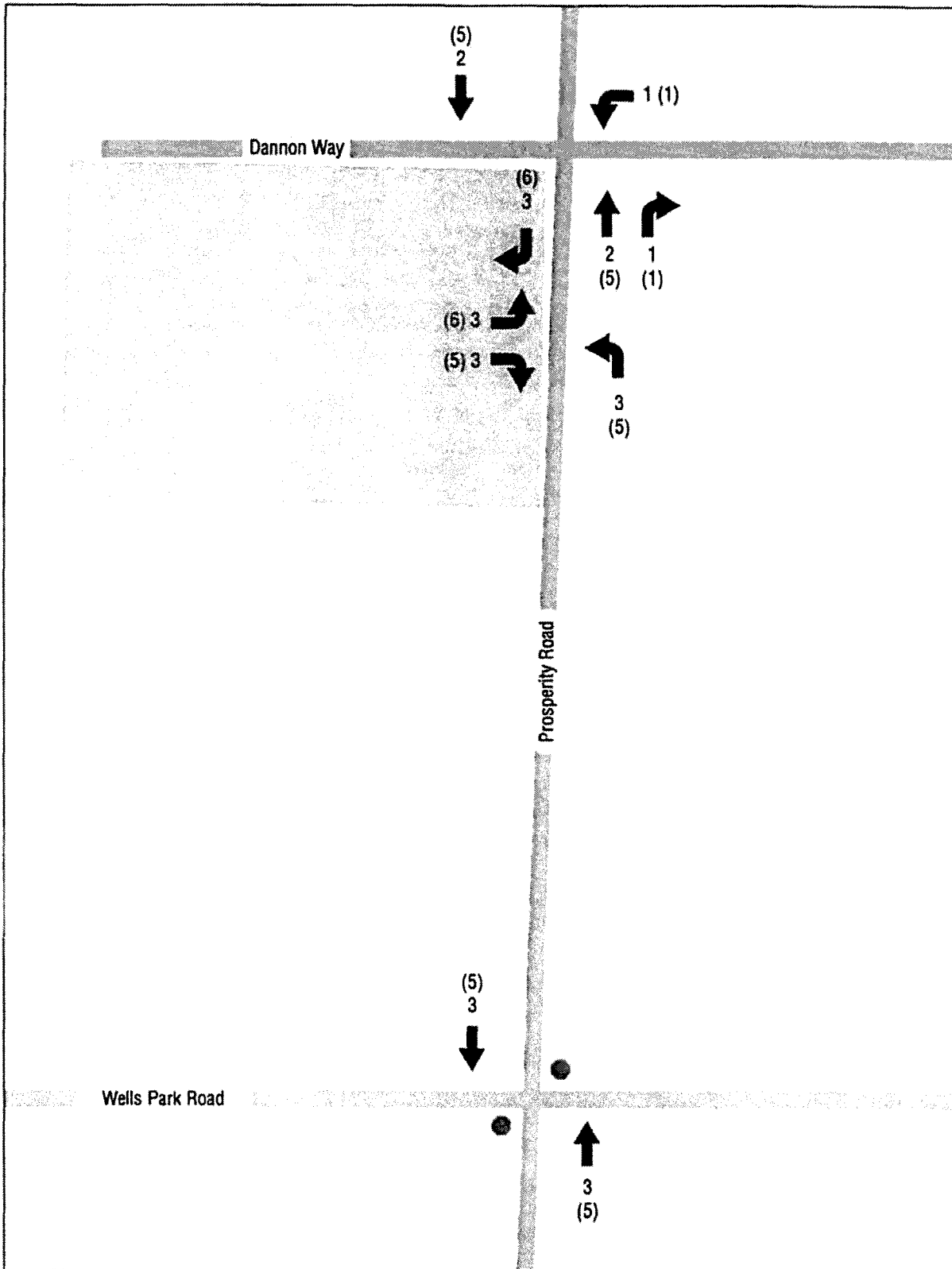


Figure 6:
Trip Assignment

● Stop Sign

● Proposed Development

X AM Peak Hour Volume

(X) PM Peak Hour Volume



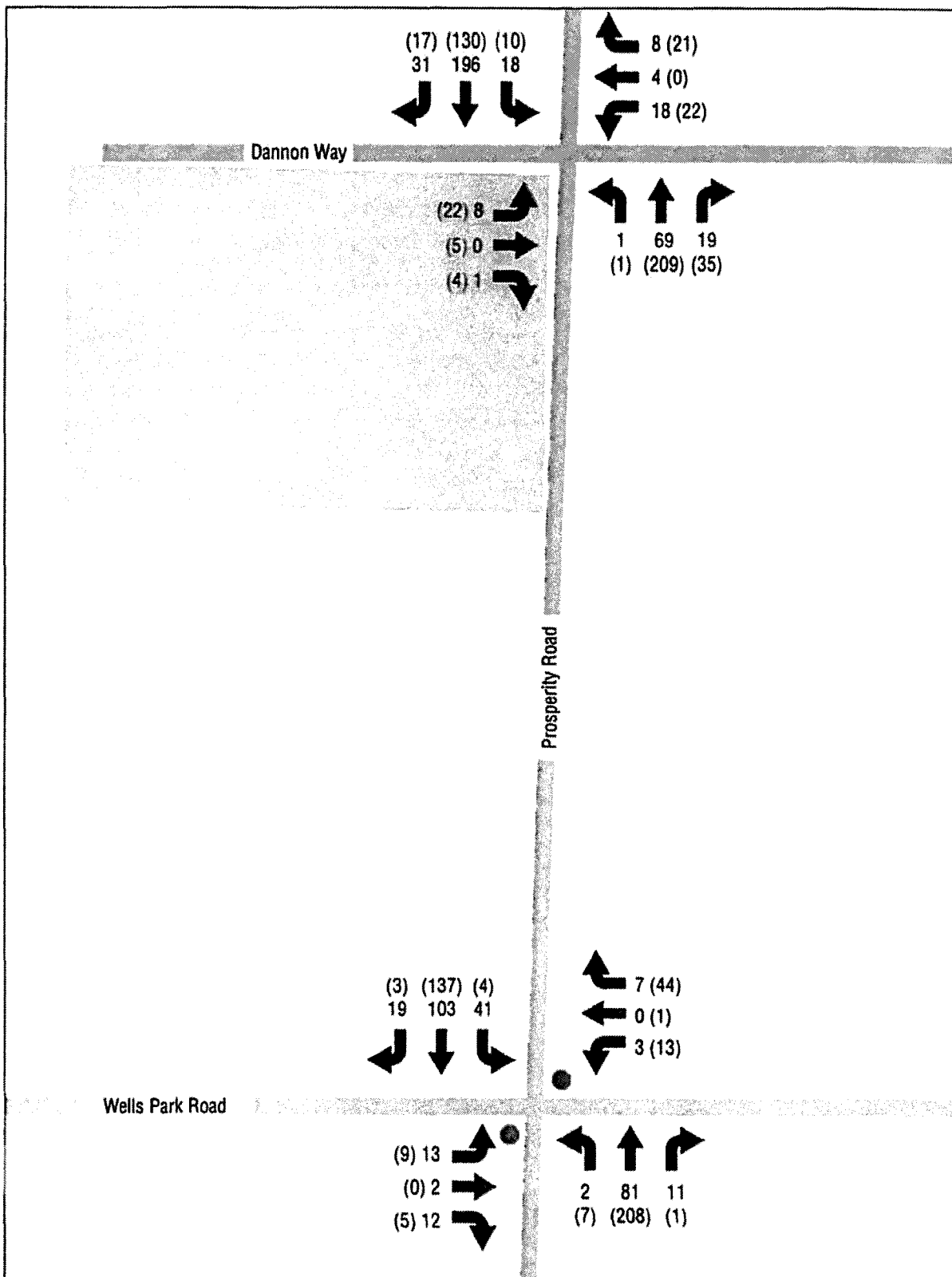


Figure 7:
2017 Traffic Volumes



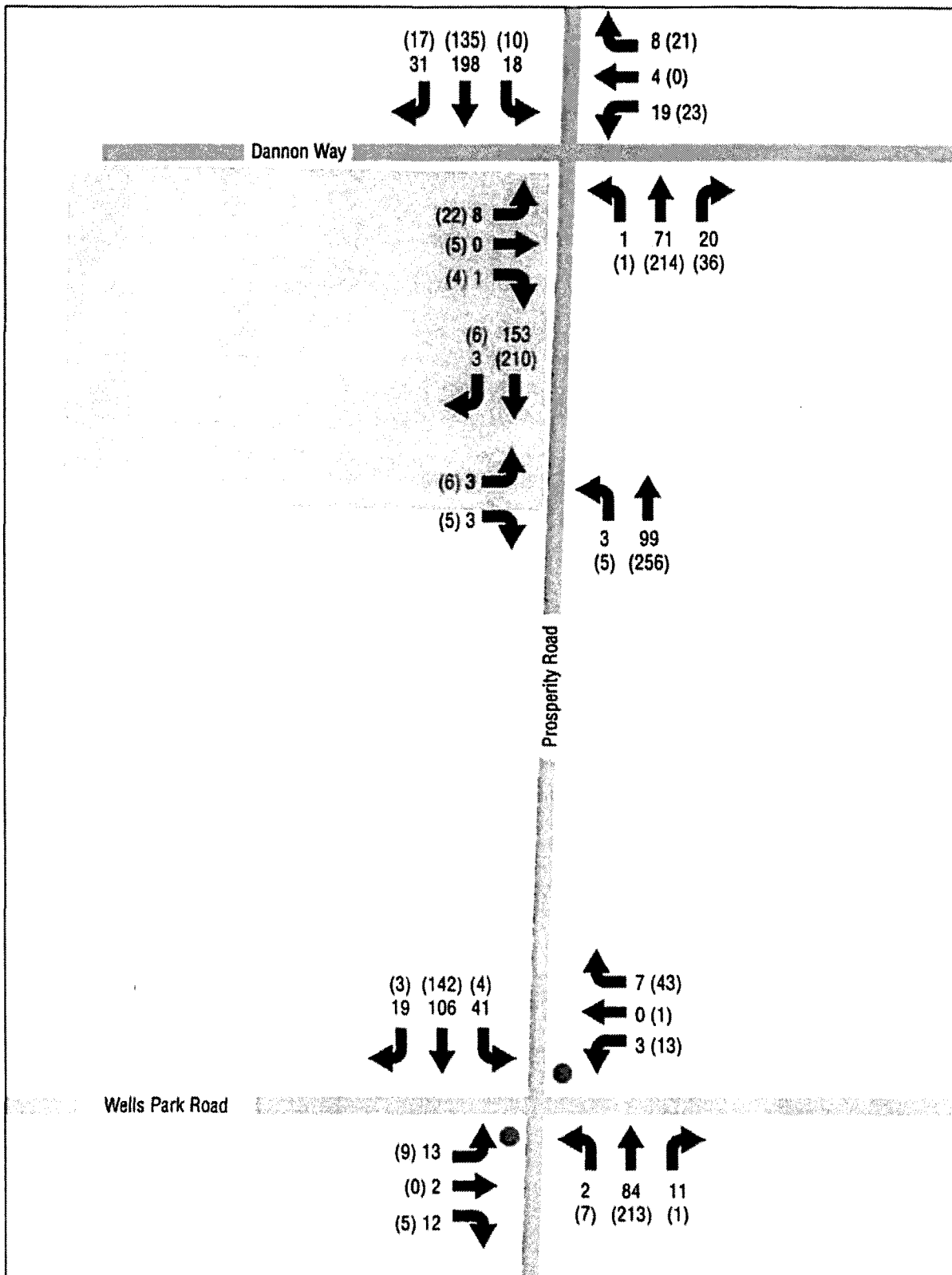


Figure 8:
Project and 2017 Traffic
Volumes



Stop Sign
Proposed Development

X AM Peak Hour Volume
(X) PM Peak Hour Volume



VI. Conclusion

The trips generated by the proposed development will have very little effect on nearby intersections. The driveway will operate well because of the limited movements in and out of the site.

VII. References

Transportation Research Board. (2010). *Highway Capacity Manual (HCM 2010)-Volume 3:*

Interrupted Flow. Washington, DC: National Academy of Sciences. ISBN 978-0-309-16080-3.

Institute of Transportation Engineers. (2012). *Trip Generation Manual-9th Edition, Volume 2: Data and Volume 3: Data*. Washington, DC. Institute of Transportation Engineers. Publication No. IR-016G.

Appendix **A**

2016 Traffic Volumes

TURNING MOVEMENT COUNT SUMMARY



INTERSECTION:
 N-S STREET: *Prosperity Road*
 E-W STREET: *Dannon Road*

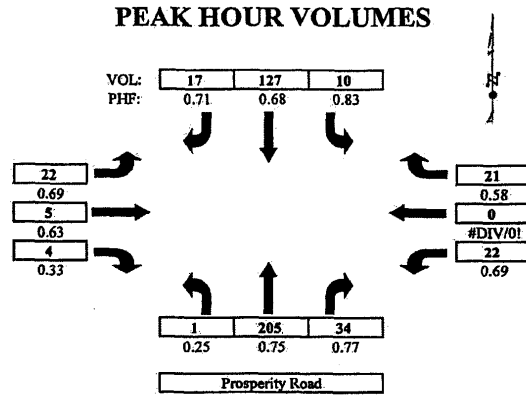
PROJECT NO.: *UT 16-099*
COUNT DATE: *May 11, 2016*
NOTES:

COUNT TIME:
 FROM: *4:00 PM*
 TO: *6:00 PM*

GROWTH FACTOR: *1.00*

PEAK HOUR VOLUME: 468
PHF: 0.81
PEAK HOUR:
 FROM: 4:45 PM TO: 5:45 PM

Dannon Road



COUNT DATA INPUT:

TIME PERIOD		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL VOLUMES
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	4:15 PM	0	47	14	9	2	4	5	25	2	6	0	4	118
4:15 PM	4:30 PM	1	30	4	1	0	0	0	33	3	3	0	4	79
4:30 PM	4:45 PM	0	17	5	3	0	0	1	17	0	0	0	2	45
4:45 PM	5:00 PM	0	27	5	2	0	0	3	30	6	3	0	3	79
5:00 PM	5:15 PM	0	51	11	8	1	1	3	27	2	5	0	9	118
5:15 PM	5:30 PM	1	59	7	6	2	3	3	47	6	8	0	2	144
5:30 PM	5:45 PM	0	68	11	6	2	0	1	23	3	6	0	7	127
5:45 PM	6:00 PM	0	23	6	3	1	0	2	14	0	7	0	2	58
Included HV (trucks + buses):		1	17	1	4	1	0	3	14	1	4	0	1	768
		50%	5%	2%	11%	13%	0%	17%	6%	5%	11%	#DIV/0!	3%	100%

HOURLY TOTALS:

TIME PERIOD		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL VOLUMES
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	5:00 PM	1	121	28	15	2	4	9	105	11	12	0	13	321
4:15 PM	5:15 PM	1	125	25	14	1	1	7	107	11	11	0	18	321
4:30 PM	5:30 PM	1	154	28	19	3	4	10	121	14	16	0	16	386
4:45 PM	5:45 PM	1	205	34	22	5	4	10	127	17	22	0	21	468
5:00 PM	6:00 PM	1	201	35	23	6	4	9	111	11	26	0	20	447

NOTE PHF IS BASED ON 15 MIN. PEAK WITHIN THE PEAK HOUR.



PEAK HOUR TURNING MOVEMENT DIAGRAM

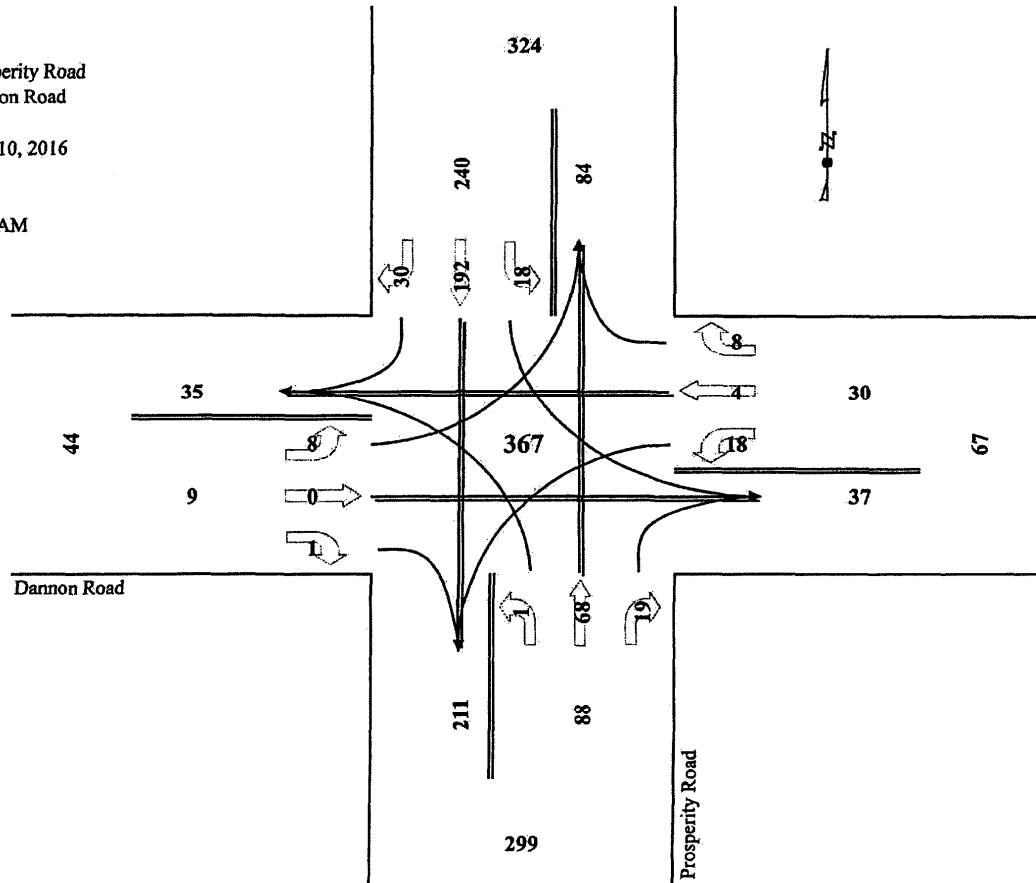
INTERSECTION

N-S STREET: Prosperity Road
E-W STREET: Dannon Road

COUNT DATE: May 10, 2016

PEAK HOUR:
7:30 AM TO 8:30 AM

NOTES: 0



TURNING MOVEMENT COUNT SUMMARY



INTERSECTION:
 N-S STREET: *Prosperity Road*
 E-W STREET: *Dannon Road*

PROJECT NO.: *UT 16-099*
COUNT DATE: *May 11, 2016*
NOTES:

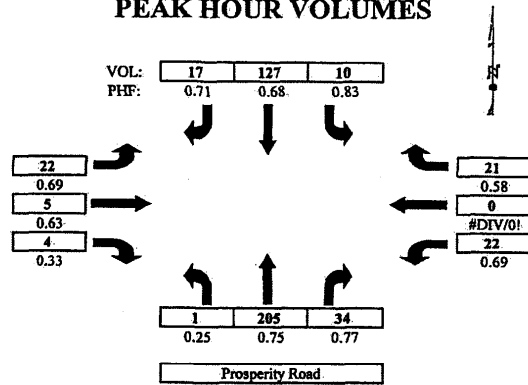
COUNT TIME:
FROM: *4:00 PM*
TO: *6:00 PM*

GROWTH FACTOR: *1.00*

PEAK HOUR VOLUME: 468
PHF: 0.81
PEAK HOUR:
FROM: 4:45 PM **TO:** 5:45 PM

Dannon Road

PEAK HOUR VOLUMES



COUNT DATA INPUT:

TIME PERIOD		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL VOLUMES
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	4:15 PM	0	47	14	9	2	4	3	25	2	6	0	4	118
4:15 PM	4:30 PM	1	30	4	7	0	0	0	33	3	3	0	4	79
4:30 PM	4:45 PM	0	17	5	3	0	0	1	17	0	0	0	2	45
4:45 PM	5:00 PM	0	27	5	2	0	0	3	30	6	3	0	3	79
5:00 PM	5:15 PM	0	51	11	8	1	1	3	27	2	5	0	9	118
5:15 PM	5:30 PM	1	59	7	6	2	3	3	47	6	8	0	2	144
5:30 PM	5:45 PM	0	68	11	6	2	0	1	23	3	6	0	7	127
5:45 PM	6:00 PM	0	23	6	3	1	0	2	14	0	7	0	2	58
Included HV (trucks + buses):		1	17	1	4	1	0	3	14	1	4	0	1	768
		50%	5%	2%	11%	13%	0%	17%	6%	5%	11%	#DIV/0!	3%	100%

HOURLY TOTALS:

TIME PERIOD		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL VOLUMES
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	5:00 PM	1	121	28	15	2	4	9	105	11	12	0	13	321
4:15 PM	5:15 PM	1	125	25	14	1	1	7	107	11	11	0	18	321
4:30 PM	5:30 PM	1	154	28	19	3	4	10	121	14	16	0	16	386
4:45 PM	5:45 PM	1	205	34	22	5	4	10	127	17	22	0	21	468
5:00 PM	6:00 PM	1	201	35	23	6	4	9	111	11	26	0	20	447

NOTE PHF IS BASED ON 15 MIN. PEAK WITHIN THE PEAK HOUR.



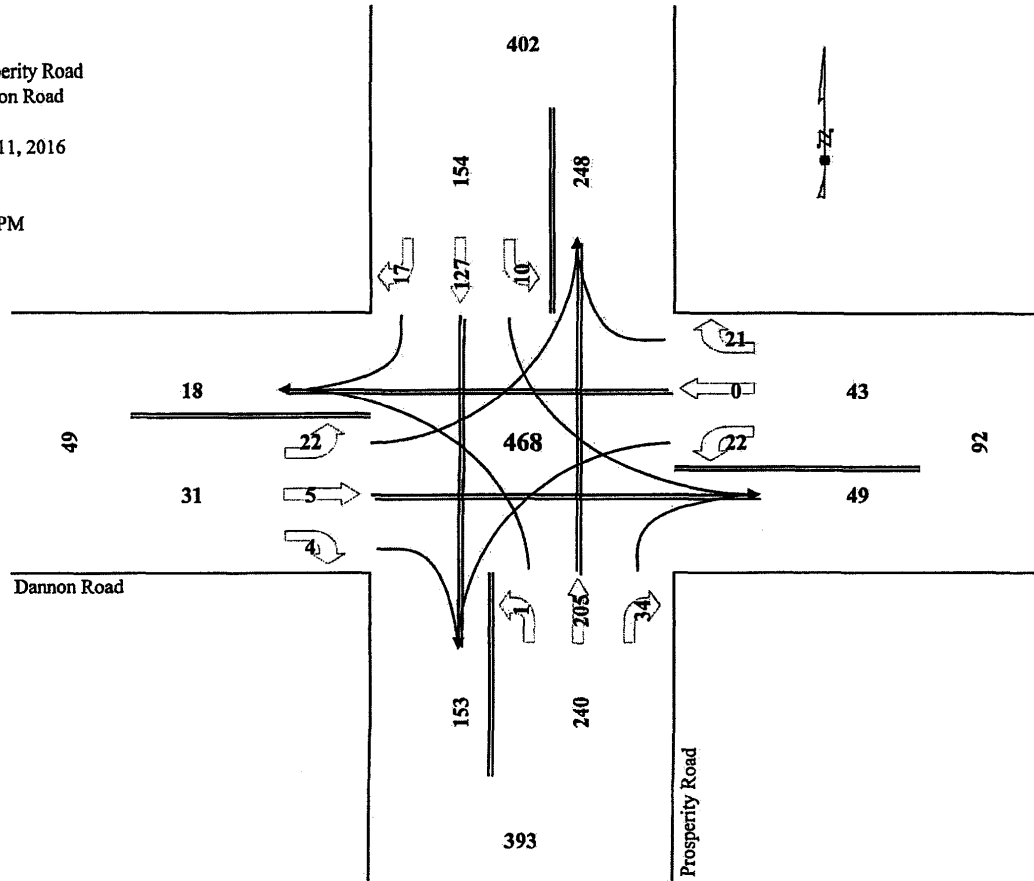
PEAK HOUR TURNING MOVEMENT DIAGRAM

INTERSECTION:
N-S STREET: Prosperity Road
E-W STREET: Dannon Road

COUNT DATE: May 11, 2016

PEAK HOUR:
4:45 PM TO 5:45 PM

NOTES: #####



TURNING MOVEMENT COUNT SUMMARY



INTERSECTION
 N-S STREET: *Prosperity Road*
 E-W STREET: *Wells Park Road*

PROJECT NO.: *UT 16-099*
 COUNT DATE: *May 10, 2016*
 NOTES:

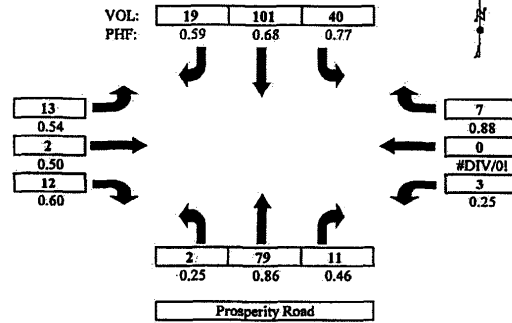
COUNT TIME
 FROM: *7:00 AM*
 TO: *9:00 AM*

GROWTH FACTOR: *1.00*

PEAK HOUR VOLUME: **289**
 PHF: **0.83**
 PEAK HOUR:
 FROM: **7:30 AM** TO: **8:30 AM**

Wells Park Road

PEAK HOUR VOLUMES



COUNT DATA INPUT:

TIME PERIOD		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL VOLUMES
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	
7:00 AM	7:15 AM	1	10	1	2	0	1	6	17	1	0	0	0	39
7:15 AM	7:30 AM	0	7	1	1	0	1	0	14	4	0	0	0	28
7:30 AM	7:45 AM	2	17	2	0	0	5	6	15	5	0	0	1	53
7:45 AM	8:00 AM	0	23	1	6	1	1	11	37	5	0	0	2	87
8:00 AM	8:15 AM	0	18	2	3	0	2	13	21	8	0	0	2	69
8:15 AM	8:30 AM	0	21	6	4	1	4	10	28	1	3	0	2	80
8:30 AM	8:45 AM	0	15	1	2	0	3	5	18	3	0	0	3	50
8:45 AM	9:00 AM	2	11	3	3	0	0	4	16	9	0	0	0	48
Included HV (trucks + buses):		2	12	0	15	0	2	0	7	28	0	0	0	0
		40%	10%	0%	71%	0%	12%	0%	4%	78%	0%	#DIV/0!	0%	

HOURLY TOTALS:

TIME PERIOD		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL VOLUMES
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	
7:00 AM	8:00 AM	3	57	5	9	1	8	23	83	15	0	0	3	207
7:15 AM	8:15 AM	2	65	6	10	1	9	30	87	22	0	0	5	237
7:30 AM	8:30 AM	2	79	11	13	2	12	40	101	19	3	0	7	289
7:45 AM	8:45 AM	0	77	10	15	2	10	39	104	17	3	0	9	286
8:00 AM	9:00 AM	2	65	12	12	1	9	32	83	21	3	0	7	247

NOTE PHF IS BASED ON 15 MIN. PEAK WITHIN THE PEAK HOUR.



PEAK HOUR TURNING MOVEMENT DIAGRAM

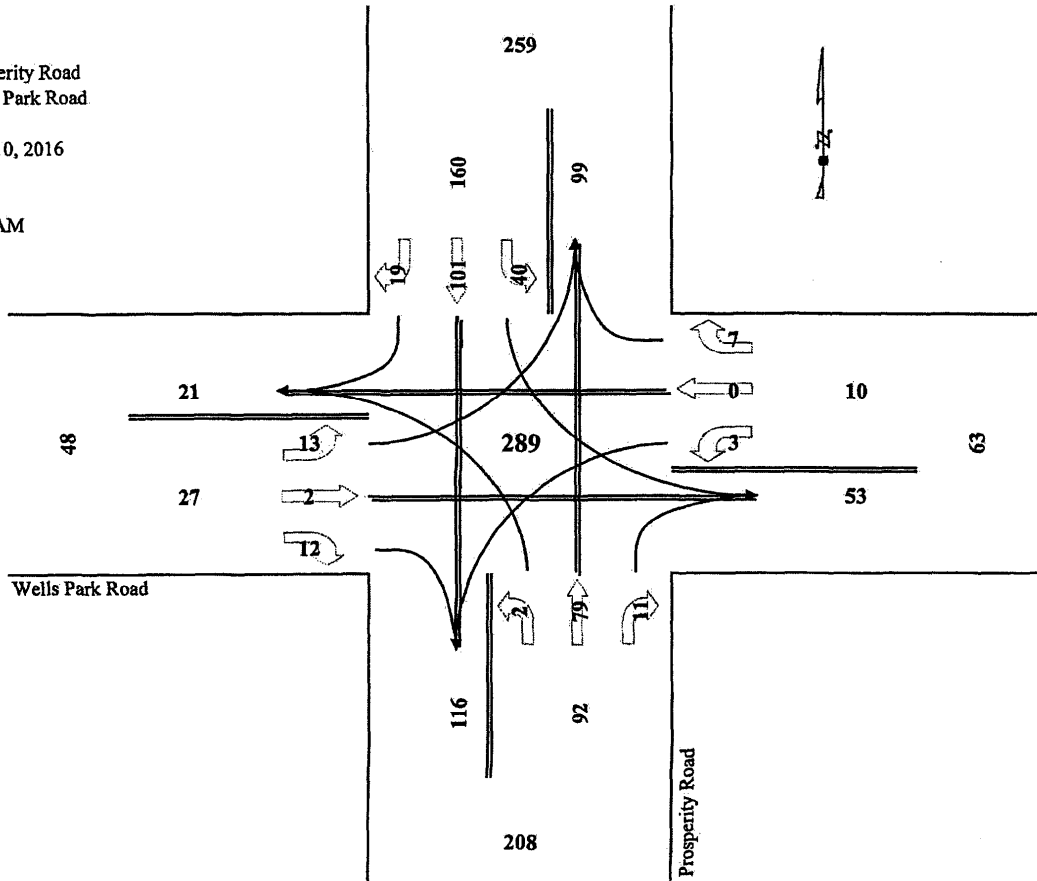
INTERSECTION

N-S STREET: Prosperity Road
E-W STREET: Wells Park Road

COUNT DATE: May 10, 2016

PEAK HOUR:
7:30 AM TO 8:30 AM

NOTES: 0



TURNING MOVEMENT COUNT SUMMARY



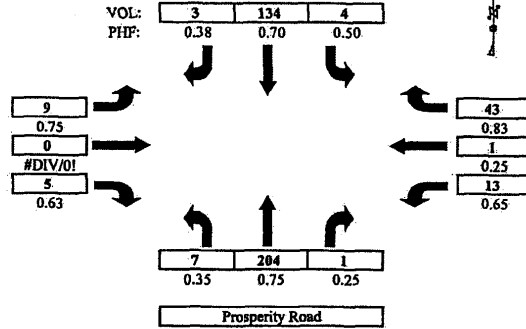
INTERSECTION:
 N-S STREET: *Prosperity Road*
 E-W STREET: *Wells Park Road*

PROJECT NO.: *UT 16-099*
COUNT DATE: *May 10, 2016*
NOTES:

PEAK HOUR VOLUME:	424
PHF:	0.91
PEAK HOUR:	
FROM:	TO:
4:45 PM	5:45 PM

Wells Park Road

PEAK HOUR VOLUMES



COUNT DATA INPUT:

TIME PERIOD		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL VOLUMES
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	4:15 PM	1	43	0	3	0	1	5	37	3	4	0	15	112
4:15 PM	4:30 PM	1	37	0	2	0	5	2	34	1	1	0	10	93
4:30 PM	4:45 PM	4	35	0	2	0	0	2	18	2	3	0	7	73
4:45 PM	5:00 PM	0	39	0	2	0	0	2	33	0	4	0	13	93
5:00 PM	5:15 PM	1	49	1	3	0	2	0	33	1	5	0	10	105
5:15 PM	5:30 PM	1	48	0	2	0	1	1	48	0	3	1	17	116
5:30 PM	5:45 PM	5	68	0	2	0	2	1	20	2	1	0	9	110
5:45 PM	6:00 PM	0	13	0	2	0	1	0	16	1	0	0	7	42
Included HV (trucks + buses):		0	19	0	5	0	1	0	9	5	0	0	0	744
		0%	6%	0%	28%	#DIV/0!	8%	0%	4%	50%	0%	0%	0%	100%

HOURLY TOTALS:

TIME PERIOD		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL VOLUMES
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	5:00 PM	6	154	0	9	0	6	11	122	6	12	0	45	371
4:15 PM	5:15 PM	6	160	1	9	0	7	6	118	4	13	0	40	364
4:30 PM	5:30 PM	6	171	1	9	0	3	5	132	3	15	1	41	387
4:45 PM	5:45 PM	7	204	1	9	0	5	4	134	3	13	1	43	424
5:00 PM	6:00 PM	7	180	1	9	0	6	2	117	4	9	1	37	373

NOTE PHF IS BASED ON 15 MIN. PEAK WITHIN THE PEAK HOUR.



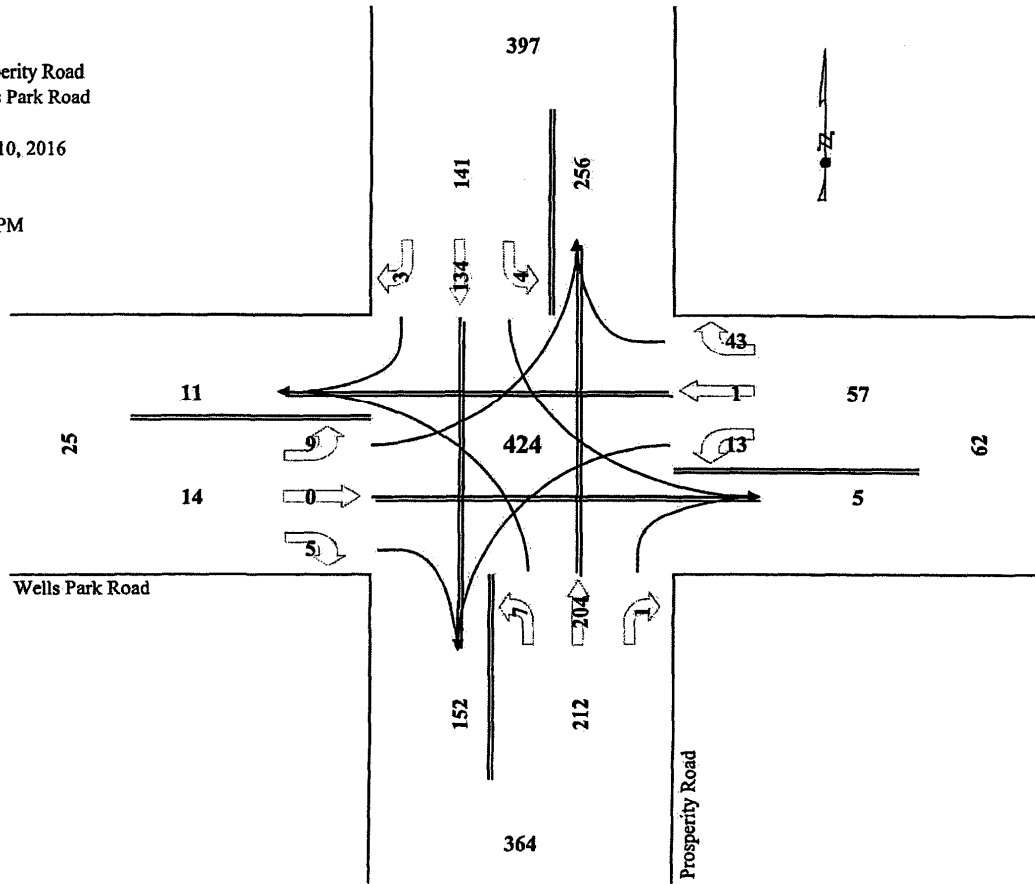
PEAK HOUR TURNING MOVEMENT DIAGRAM

INTERSECTION:
N-S STREET: Prosperity Road
E-W STREET: Wells Park Road

COUNT DATE: May 10, 2016

PEAK HOUR:
4:45 PM TO 5:45 PM

NOTES: #####



Traffic Count - Prosperity Road and Wells Park Road PM Fig 1

5/19/2016 11:20 AM

Appendix

B

HCM Analyses

HCM 2010 TWSC
3: Prosperity Rd & Dannon Way

5/16/2016

Intersection

Intersection Delay, s/veh 2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	8	0	1	18	4	8	1	68	19	18	192	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	40	92	25	75	50	100	25	77	79	56	71	63
Heavy Vehicles, %	21	25	0	6	20	0	0	29	6	11	14	0
Mvmt Flow	20	0	4	24	8	8	4	88	24	32	270	48

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	451	455	270	445	443	100	270	0	0	112	0	0
Stage 1	335	335	-	108	108	-	-	-	-	-	-	-
Stage 2	116	120	-	337	335	-	-	-	-	-	-	-
Follow-up Headway	3.689	4.225	3.3	3.554	4.18	3.3	2.2	-	-	2.299	-	-
Pot Capacity-1 Maneuver	488	469	774	517	483	961	1305	-	-	1423	-	-
Stage 1	641	604	-	888	772	-	-	-	-	-	-	-
Stage 2	845	754	-	669	612	-	-	-	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	468	457	774	504	471	961	1305	-	-	1423	-	-
Mov Capacity-2 Maneuver	468	457	-	504	471	-	-	-	-	-	-	-
Stage 1	639	590	-	885	770	-	-	-	-	-	-	-
Stage 2	827	752	-	651	598	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.4	12.1	0.3	0.7
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1305	-	-	468	549	548	1423	-	-
HCM Lane V/C Ratio	0.003	-	-	0.028	0.019	0.073	0.023	-	-
HCM Control Delay (s)	7.767	0	-	12.9	11.7	12.1	7.588	-	-
HCM Lane LOS	A	A		B	B	B	A		
HCM 95th %tile Q(veh)	0.009	-	-	0.088	0.059	0.235	0.069	-	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	22	5	4	22	0	21	1	205	34	10	127	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	63	33	69	25	58	25	75	77	83	68	71
Heavy Vehicles, %	11	13	0	11	0	3	50	5	2	17	6	5
Mvmt Flow	32	8	12	32	0	36	4	273	44	12	187	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	533	536	187	524	514	295	187	0	0	317	0	0
Stage 1	211	211	-	303	303	-	-	-	-	-	-	-
Stage 2	322	325	-	221	211	-	-	-	-	-	-	-
Follow-up Headway	3.599	4.117	3.3	3.599	4	3.327	2.65	-	-	2.353	-	-
Pot Capacity-1 Maneuver	444	436	860	450	467	742	1145	-	-	1163	-	-
Stage 1	771	708	-	687	667	-	-	-	-	-	-	-
Stage 2	671	630	-	761	731	-	-	-	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	418	430	860	433	460	742	1145	-	-	1163	-	-
Mov Capacity-2 Maneuver	418	430	-	433	460	-	-	-	-	-	-	-
Stage 1	768	701	-	684	664	-	-	-	-	-	-	-
Stage 2	636	627	-	734	723	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13	12.4	0.1	0.4
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1145	-	-	418	529	556	1163	-	-
HCM Lane V/C Ratio	0.003	-	-	0.051	0.058	0.122	0.01	-	-
HCM Control Delay (s)	8.155	0	-	14.1	12.2	12.4	8.128	-	-
HCM Lane LOS	A	A	-	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0.011	-	-	0.16	0.184	0.416	0.031	-	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	2	12	3	0	7	2	79	11	40	101	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	54	50	60	25	25	88	25	86	46	77	68	59
Heavy Vehicles, %	71	0	12	0	0	0	40	10	0	0	4	78
Mvmt Flow	24	4	20	12	0	8	8	92	24	52	149	32

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	393	401	165	401	405	104	181	0	0	116	0	0
Stage 1	269	269	-	120	120	-	-	-	-	-	-	-
Stage 2	124	132	-	281	285	-	-	-	-	-	-	-
Follow-up Headway	4.139	4	3.408	3.5	4	3.3	2.56	-	-	2.2	-	-
Pot Capacity-1 Maneuver	461	541	854	563	538	956	1195	-	-	1485	-	-
Stage 1	608	690	-	889	800	-	-	-	-	-	-	-
Stage 2	738	791	-	730	679	-	-	-	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	443	519	854	529	516	956	1195	-	-	1485	-	-
Mov Capacity-2 Maneuver	443	519	-	529	516	-	-	-	-	-	-	-
Stage 1	604	666	-	883	795	-	-	-	-	-	-	-
Stage 2	727	786	-	684	655	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	10.8	0.5	1.7
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1195	-	-	562	644	1485	-	-
HCM Lane V/C Ratio	0.007	-	-	0.086	0.031	0.035	-	-
HCM Control Delay (s)	8.033	-	-	12	10.8	7.512	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.02	-	-	0.279	0.096	0.109	-	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM 2010 TWSC
6: Prosperity Rd & Wells Park Rd

5/16/2016

Intersection

Intersection Delay, s/veh 2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	0	5	13	1	43	7	204	1	4	134	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	25	63	65	25	83	35	75	25	50	70	38
Heavy Vehicles, %	28	0	8	0	0	0	0	6	0	0	4	50
Mvmt Flow	12	0	8	20	4	52	20	272	4	8	191	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	553	527	195	529	529	274	199	0	0	276	0	0
Stage 1	211	211	-	314	314	-	-	-	-	-	-	-
Stage 2	342	316	-	215	215	-	-	-	-	-	-	-
Follow-up Headway	3.752	4	3.372	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Capacity-1 Maneuver	406	459	831	463	458	770	1385	-	-	1299	-	-
Stage 1	735	731	-	701	660	-	-	-	-	-	-	-
Stage 2	622	659	-	792	729	-	-	-	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	370	450	831	451	449	770	1385	-	-	1299	-	-
Mov Capacity-2 Maneuver	370	450	-	451	449	-	-	-	-	-	-	-
Stage 1	724	726	-	691	650	-	-	-	-	-	-	-
Stage 2	568	649	-	780	725	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.9	11.5	0.5	0.3
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1385	-	-	475	629	1299	-	-
HCM Lane V/C Ratio	0.014	-	-	0.042	0.121	0.006	-	-
HCM Control Delay (s)	7.637	-	-	12.9	11.5	7.789	-	-
HCM Lane LOS	A			B	B	A		
HCM 95th %tile Q(veh)	0.044	-	-	0.131	0.409	0.019	-	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM 2010 TWSC
3: Prosperity Rd & Dannon Way

5/16/2016

Intersection	
Intersection Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	8	0	1	18	4	8	1	69	19	18	196	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	40	92	25	75	50	100	25	77	79	56	71	63
Heavy Vehicles, %	21	25	0	6	20	0	0	29	6	11	14	0
Mvmt Flow	20	0	4	24	8	8	4	90	24	32	276	49

Major/Minor	Minor2	Minor1	Major1	Major2
Conflicting Flow All	458	462	276	452
Stage 1	340	340	-	110
Stage 2	118	122	-	342
Follow-up Headway	3.689	4.225	3.3	3.554
Pot Capacity-1 Maneuver	482	464	768	511
Stage 1	637	600	-	886
Stage 2	842	753	-	665
Time blocked-Platoon, %	-	-	-	-
Mov Capacity-1 Maneuver	463	452	768	498
Mov Capacity-2 Maneuver	463	452	-	498
Stage 1	635	586	-	883
Stage 2	824	751	-	647

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.5	12.2	0.3	0.7
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1299	-	-	463	544	543	1421	-	-
HCM Lane V/C Ratio	0.003	-	-	0.029	0.02	0.074	0.023	-	-
HCM Control Delay (s)	7.78	0	-	13	11.8	12.2	7.592	-	-
HCM Lane LOS	A	A	-	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0.009	-	-	0.089	0.06	0.238	0.069	-	-

Notes
~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	22	5	4	22	0	21	1	209	35	10	130	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	63	33	69	25	58	25	75	77	83	68	71
Heavy Vehicles, %	11	13	0	11	0	3	50	5	2	17	6	5
Mvmt Flow	32	8	12	32	0	36	4	279	45	12	191	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	542	547	191	534	524	301	191	0	0	324	0	0
Stage 1	215	215	-	309	309	-	-	-	-	-	-	-
Stage 2	327	332	-	225	215	-	-	-	-	-	-	-
Follow-up Headway	3.599	4.117	3.3	3.599	4	3.327	2.65	-	-	2.353	-	-
Pot Capacity-1 Maneuver	438	430	856	443	461	736	1141	-	-	1156	-	-
Stage 1	767	705	-	682	663	-	-	-	-	-	-	-
Stage 2	667	625	-	758	729	-	-	-	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	412	424	856	426	454	736	1141	-	-	1156	-	-
Mov Capacity-2 Maneuver	412	424	-	426	454	-	-	-	-	-	-	-
Stage 1	764	698	-	679	660	-	-	-	-	-	-	-
Stage 2	632	623	-	731	721	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.1	12.5	0.1	0.4
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1141	-	-	412	523	549	1156	-	-
HCM Lane V/C Ratio	0.004	-	-	0.052	0.059	0.124	0.01	-	-
HCM Control Delay (s)	8.166	0	-	14.2	12.3	12.5	8.147	-	-
HCM Lane LOS	A	A		B	B	B	A		
HCM 95th %tile Q(veh)	0.011	-	-	0.163	0.186	0.422	0.032	-	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	0	5	13	1	44	7	208	1	4	137	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	25	63	65	25	83	35	75	25	50	70	38
Heavy Vehicles, %	28	0	8	0	0	0	0	6	0	0	4	50
Mvmt Flow	12	0	8	20	4	53	20	277	4	8	196	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	564	537	200	539	539	279	204	0	0	281	0	0
Stage 1	216	216	-	319	319	-	-	-	-	-	-	-
Stage 2	348	321	-	220	220	-	-	-	-	-	-	-
Follow-up Headway	3.752	4	3.372	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Capacity-1 Maneuver	399	453	826	456	452	765	1380	-	-	1293	-	-
Stage 1	731	728	-	697	657	-	-	-	-	-	-	-
Stage 2	617	655	-	787	725	-	-	-	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	363	444	826	445	443	765	1380	-	-	1293	-	-
Mov Capacity-2 Maneuver	363	444	-	445	443	-	-	-	-	-	-	-
Stage 1	720	723	-	687	647	-	-	-	-	-	-	-
Stage 2	562	646	-	775	721	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.1	11.6	0.5	0.3
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1380	-	-	467	625	1293	-	-
HCM Lane V/C Ratio	0.014	-	-	0.043	0.123	0.006	-	-
HCM Control Delay (s)	7.647	-	-	13.1	11.6	7.802	-	-
HCM Lane LOS	A			B	B	A		
HCM 95th %tile Q(veh)	0.044	-	-	0.133	0.419	0.019	-	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM 2010 TWSC
6: Prosperity Rd & Wells Park Rd

5/16/2016

Intersection

Intersection Delay, s/veh 2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	2	12	3	0	7	2	81	11	41	103	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	54	50	60	25	25	88	25	86	46	77	68	59
Heavy Vehicles, %	71	0	12	0	0	0	40	10	0	0	4	78
Mvmt Flow	24	4	20	12	0	8	8	94	24	53	151	32

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	400	408	168	408	412	106	184	0	0	118	0	0
Stage 1	274	274	-	122	122	-	-	-	-	-	-	-
Stage 2	126	134	-	286	290	-	-	-	-	-	-	-
Follow-up Headway	4.139	4	3.408	3.5	4	3.3	2.56	-	-	2.2	-	-
Pot Capacity-1 Maneuver	456	536	851	557	533	954	1192	-	-	1483	-	-
Stage 1	604	687	-	887	799	-	-	-	-	-	-	-
Stage 2	736	789	-	726	676	-	-	-	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	438	513	851	523	511	954	1192	-	-	1483	-	-
Mov Capacity-2 Maneuver	438	513	-	523	511	-	-	-	-	-	-	-
Stage 1	600	662	-	881	794	-	-	-	-	-	-	-
Stage 2	725	784	-	679	652	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.1	10.8	0.5	1.7
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1192	-	-	557	638	1483	-	-
HCM Lane V/C Ratio	0.007	-	-	0.086	0.031	0.036	-	-
HCM Control Delay (s)	8.041	-	-	12.1	10.8	7.518	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.02	-	-	0.282	0.097	0.112	-	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	8	0	1	19	4	8	1	71	20	18	198	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	40	92	25	75	50	100	25	77	79	56	71	63
Heavy Vehicles, %	21	25	0	6	20	0	0	29	6	11	14	0
Mvmt Flow	20	0	4	25	8	8	4	92	25	32	279	49

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	464	469	279	458	456	105	279	0	0	118	0	0
Stage 1	343	343	-	113	113	-	-	-	-	-	-	-
Stage 2	121	126	-	345	343	-	-	-	-	-	-	-
Follow-up Headway	3.689	4.225	3.3	3.554	4.18	3.3	2.2	-	-	2.299	-	-
Pot Capacity-1 Maneuver	478	460	765	506	475	955	1295	-	-	1416	-	-
Stage 1	634	598	-	882	768	-	-	-	-	-	-	-
Stage 2	839	750	-	662	607	-	-	-	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	459	448	765	494	463	955	1295	-	-	1416	-	-
Mov Capacity-2 Maneuver	459	448	-	494	463	-	-	-	-	-	-	-
Stage 1	632	584	-	879	766	-	-	-	-	-	-	-
Stage 2	821	748	-	644	593	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.5	12.3	0.3	0.7
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1295	-	-	459	540	537	1416	-	-
HCM Lane V/C Ratio	0.003	-	-	0.029	0.02	0.077	0.023	-	-
HCM Control Delay (s)	7.789	0	-	13.1	11.8	12.3	7.601	-	-
HCM Lane LOS	A	A	-	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0.009	-	-	0.09	0.06	0.249	0.07	-	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	22	5	4	23	0	21	1	214	35	10	135	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	63	33	69	25	58	25	75	77	83	68	71
Heavy Vehicles, %	11	13	0	11	0	3	50	5	2	17	6	5
Mvmt Flow	32	8	12	33	0	36	4	285	45	12	199	24

Major/Minor	Minor2	Minor1	Major1	Major2
Conflicting Flow All	557	562	199	549
Stage 1	223	223	-	316
Stage 2	334	339	-	233
Follow-up Headway	3.599	4.117	3.3	3.599
Pot Capacity-1 Maneuver	428	421	847	433
Stage 1	760	699	-	676
Stage 2	661	621	-	750
Time blocked-Platoon, %	-	-	-	-
Mov Capacity-1 Maneuver	402	415	847	416
Mov Capacity-2 Maneuver	402	415	-	416
Stage 1	757	692	-	673
Stage 2	626	619	-	723

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.3	12.7	0.1	0.4
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1133	-	-	402	513	536	1149	-	-
HCM Lane V/C Ratio	0.004	-	-	0.053	0.06	0.13	0.01	-	-
HCM Control Delay (s)	8.189	0	-	14.5	12.5	12.7	8.166	-	-
HCM Lane LOS	A	A	-	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0.011	-	-	0.167	0.19	0.444	0.032	-	-

Notes
~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	0	3	0	0	0	3	99	0	0	210	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	2	2	2	2	2	2
Mvmt Flow	3	0	3	0	0	0	3	108	0	0	228	3

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	344	344	230	232	0	0	108	0	0
Stage 1	230	230	-	-	-	-	-	-	-
Stage 2	114	114	-	-	-	-	-	-	-
Follow-up Headway	3.5	4	3.3	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	657	582	814	1336	-	-	1483	-	-
Stage 1	813	718	-	-	-	-	-	-	-
Stage 2	916	805	-	-	-	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	656	0	814	1336	-	-	1483	-	-
Mov Capacity-2 Maneuver	656	0	-	-	-	-	-	-	-
Stage 1	813	0	-	-	-	-	-	-	-
Stage 2	914	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.2	0
HCM LOS	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	SBL	SBT	SBR
Capacity (veh/h)	1336	-	-	656	814	1483	-	-
HCM Lane V/C Ratio	0.002	-	-	0.005	0.004	-	-	-
HCM Control Delay (s)	7.701	0	-	10.5	9.4	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0.007	-	-	0.015	0.012	0	-	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	0	5	0	0	0	5	256	0	0	153	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	5	0	0	0	5	278	0	0	166	7

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	459	459	170	173	0	0	278	0	0
Stage 1	170	170	-	-	-	-	-	-	-
Stage 2	289	289	-	-	-	-	-	-	-
Follow-up Headway	3.5	4	3.3	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	564	502	879	1404	-	-	1285	-	-
Stage 1	865	762	-	-	-	-	-	-	-
Stage 2	765	677	-	-	-	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	562	0	879	1404	-	-	1285	-	-
Mov Capacity-2 Maneuver	562	0	-	-	-	-	-	-	-
Stage 1	865	0	-	-	-	-	-	-	-
Stage 2	762	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	0.1	0
HCM LOS	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	SBL	SBT	SBR
Capacity (veh/h)	1404	-	-	562	879	1285	-	-
HCM Lane V/C Ratio	0.004	-	-	0.012	0.006	-	-	-
HCM Control Delay (s)	7.574	0	-	11.5	9.1	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0.012	-	-	0.035	0.019	0	-	-

Notes
 ~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	2	12	3	0	7	2	84	11	41	106	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	54	50	60	25	25	88	25	86	46	77	68	59
Heavy Vehicles, %	71	0	12	0	0	0	40	10	0	0	4	78
Mvmt Flow	24	4	20	12	0	8	8	98	24	53	156	32

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	408	416	172	416	421	110	188	0	0	122	0	0
Stage 1	278	278	-	126	126	-	-	-	-	-	-	-
Stage 2	130	138	-	290	295	-	-	-	-	-	-	-
Follow-up Headway	4.139	4	3.408	3.5	4	3.3	2.56	-	-	2.2	-	-
Pot Capacity-1 Maneuver	450	530	846	551	527	949	1188	-	-	1478	-	-
Stage 1	601	684	-	883	796	-	-	-	-	-	-	-
Stage 2	732	786	-	722	673	-	-	-	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	432	508	846	517	505	949	1188	-	-	1478	-	-
Mov Capacity-2 Maneuver	432	508	-	517	505	-	-	-	-	-	-	-
Stage 1	597	659	-	877	791	-	-	-	-	-	-	-
Stage 2	721	781	-	676	649	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.2	10.9	0.5	1.7
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1188	-	-	551	632	1478	-	-
HCM Lane V/C Ratio	0.007	-	-	0.087	0.032	0.036	-	-
HCM Control Delay (s)	8.051	-	-	12.2	10.9	7.527	-	-
HCM Lane LOS	A			B	B	A		
HCM 95th %tile Q(veh)	0.02	-	-	0.285	0.098	0.112	-	-

Notes
 - : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	0	5	13	1	43	7	213	1	4	142	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	25	63	65	25	83	35	75	25	50	70	38
Heavy Vehicles, %	28	0	8	0	0	0	0	6	0	0	4	50
Mvmt Flow	12	0	8	20	4	52	20	284	4	8	203	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	577	551	207	553	553	286	211	0	0	288	0	0
Stage 1	223	223	-	326	326	-	-	-	-	-	-	-
Stage 2	354	328	-	227	227	-	-	-	-	-	-	-
Follow-up Headway	3.752	4	3.372	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Capacity-1 Maneuver	391	445	818	447	444	758	1372	-	-	1286	-	-
Stage 1	724	723	-	691	652	-	-	-	-	-	-	-
Stage 2	613	651	-	780	720	-	-	-	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	356	436	818	436	435	758	1372	-	-	1286	-	-
Mov Capacity-2 Maneuver	356	436	-	436	435	-	-	-	-	-	-	-
Stage 1	713	719	-	681	642	-	-	-	-	-	-	-
Stage 2	559	642	-	768	716	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	13.2			11.7			0.5			0.3		
HCM LOS	B			B								

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1372	-	-	459	614	1286	-	-
HCM Lane V/C Ratio	0.015	-	-	0.043	0.123	0.006	-	-
HCM Control Delay (s)	7.663	-	-	13.2	11.7	7.817	-	-
HCM Lane LOS	A			B	B	A		
HCM 95th %tile Q(veh)	0.044	-	-	0.136	0.42	0.019	-	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined